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§ 96.1 Purpose.

This part establishes general provisions and the applicability, permitting, allowance, excess emissions, monitoring, and opt-in provisions for the NO\textsubscript{X} Budget Trading Program for State implementation plans as a means of mitigating the interstate transport of ozone and nitrogen oxides, an ozone precursor. The owner or operator of a unit, or any other person, shall comply with requirements of this part as a matter of federal law only to the extent a State that has jurisdiction over the unit incorporates by reference provisions of this part, or otherwise adopts such requirements of this part, and requires compliance, the State submits to the Administrator a State implementation plan including such adoption and such compliance requirement, and the Administrator approves the portion of the State implementation plan including such adoption and such compliance requirement. To the extent a State adopts requirements of this part, including at a minimum the requirements of subpart A (except for § 96.4(b)), subparts B through D, subpart F (except for § 96.55(c)), and subparts G and H of this part, the State authorizes the Administrator to assist the State in implementing the NO\textsubscript{X} Budget Trading Program by carrying out the functions set forth for the Administrator in such requirements.

§ 96.2 Definitions.

The terms used in this part shall have the meanings set forth in this section as follows:

Account certificate of representation means the completed and signed submission required by subpart B of this part for certifying the designation of a NO\textsubscript{X} authorized account representative for a NO\textsubscript{X} Budget source or a group of identified NO\textsubscript{X} Budget sources who is authorized to represent the owners and operators of such source or sources and of the NO\textsubscript{X} Budget units at such source or sources with regard to matters under the NO\textsubscript{X} Budget Trading Program.

Account number means the identification number given by the Administrator to each NO\textsubscript{X} Allowance Tracking System account.

Acid Rain emissions limitation means, as defined in § 72.2 of this chapter, a limitation on emissions of sulfur dioxide or nitrogen oxides under the Acid Rain Program under title IV of the CAA.

Administrator means the Administrator of the United States Environmental Protection Agency or the Administrator’s duly authorized representative.

Allocate or allocation means the determination by the permitting authority or the Administrator of the number of NO\textsubscript{X} allowances to be initially credited to a NO\textsubscript{X} Budget unit or an allocation set-aside.

Automated data acquisition and handling system or DAHS means that component of the CEMS, or other emissions monitoring system approved for use under subpart H of this part, designed to interpret and convert individual output signals from pollutant concentration monitors, flow monitors, diluent gas monitors, and other component parts of the monitoring system to produce a continuous record of the
measured parameters in the measurement units required by subpart H of this part.

Boiler means an enclosed fossil or other fuel-fired combustion device used to produce heat and to transfer heat to recirculating water, steam, or other medium.


Combined cycle system means a system comprised of one or more combustion turbines, heat recovery steam generators, and steam turbines configured to improve overall efficiency of electricity generation or steam production.

Combustion turbine means an enclosed fossil or other fuel-fired device that is comprised of a compressor, a combustor, and a turbine, and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine.

Commence commercial operation means, with regard to a unit that serves a generator, to have begun to produce steam, gas, or other heated medium used to generate electricity for sale or use, including test generation. Except as provided in §96.5, for a unit that is a NOX Budget unit under §96.4 on the date the unit commences commercial operation, such date shall remain the unit's date of commencement of commercial operation even if the unit is subsequently modified, reconstructed, or repowered. Except as provided in §96.5 or subpart I of this part, for a unit that is not a NOX Budget unit under §96.4 on the date of commencement of operation, the date the unit becomes a NOX Budget unit under §96.4 shall be the unit’s date of commencement of operation.

Common stack means a single flue through which emissions from two or more units are exhausted.

Compliance account means a NOX Allowance Tracking System account, established by the Administrator for a NOX Budget unit under subpart F of this part, in which the NOX allowance allocations for the unit are initially recorded and in which are held NOX allowances available for use by the unit for a control period for the purpose of meeting the unit’s NOX Budget emissions limitation.

Compliance certification means a submission to the permitting authority or the Administrator, as appropriate, that is required under subpart D of this part to report a NOX Budget source’s or a NOX Budget unit’s compliance or non-compliance with this part and that is signed by the NOX authorized account representative in accordance with subpart B of this part.

Continuous emission monitoring system or CEMS means the equipment required under subpart H of this part to sample, analyze, measure, and provide, by readings taken at least once every 15 minutes of the measured parameters, a permanent record of nitrogen oxides emissions, expressed in tons per hour for nitrogen oxides. The following systems are component parts included, consistent with part 75 of this chapter, in a continuous emission monitoring system:

1. Flow monitor;
2. Nitrogen oxides pollutant concentration monitors;
3. Diluent gas monitor (oxygen or carbon dioxide) when such monitoring is required by subpart H of this part;
4. A continuous moisture monitor when such monitoring is required by subpart H of this part; and
5. An automated data acquisition and handling system.

Control period means the period beginning May 1 of a year and ending on September 30 of the same year, inclusive.

Emissions means air pollutants exhausted from a unit or source into the
atmosphere, as measured, recorded, and reported to the Administrator by the NO\textsubscript{X} authorized account representative and as determined by the Administrator in accordance with subpart H of this part.


Excess emissions means any tonnage of nitrogen oxides emitted by a NO\textsubscript{X} Budget unit during a control period that exceeds the NO\textsubscript{X} Budget emissions limitation for the unit.

Fossil fuel means natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material.

Fossil fuel-fired means, with regard to a unit:

1. The combustion of fossil fuel, alone or in combination with any other fuel, where fossil fuel actually combusted comprises more than 50 percent of the annual heat input on a Btu basis during any year starting in 1995 or, if a unit had no heat input starting in 1995, during the last year of operation of the unit prior to 1995; or

2. The combustion of fossil fuel, alone or in combination with any other fuel, where fossil fuel is projected to comprise more than 50 percent of the annual heat input on a Btu basis during any year; provided that the unit shall be "fossil fuel-fired" as of the date, during such year, on which the unit begins combusting fossil fuel.

General account means a NO\textsubscript{X} Allowance Tracking System account, established under subpart F of this part, that is not a compliance account or an overdraft account.

Generator means a device that produces electricity.

Heat input means the product (in mmBtu/time) of the gross calorific value of the fuel (in Btu/lb) and the fuel feed rate into a combustion device (in mass of fuel/time), as measured, recorded, and reported to the Administrator by the NO\textsubscript{X} authorized account representative and as determined by the Administrator in accordance with subpart H of this part, and does not include the heat derived from preheated combustion air, recirculated flue gases, or exhaust from other sources.

Life-of-the-unit, firm power contractual arrangement means a unit participation power sales agreement under which a utility or industrial customer reserves, or is entitled to receive, a specified amount or percentage of nameplate capacity and associated energy from any specified unit and pays its proportional amount of such unit’s total costs, pursuant to a contract:

1. For the life of the unit;

2. For a cumulative term of no less than 30 years, including contracts that permit an election for early termination; or

3. For a period equal to or greater than 25 years or 70 percent of the economic useful life of the unit determined as of the time the unit is built, with option rights to purchase or release some portion of the nameplate capacity and associated energy generated by the unit at the end of the period.

Maximum design heat input means the ability of a unit to combust a stated maximum amount of fuel per hour on a steady state basis, as determined by the physical design and physical characteristics of the unit.

Maximum potential hourly heat input means an hourly heat input used for reporting purposes when a unit lacks certified monitors to report heat input. If the unit intends to use appendix D of part 75 of this chapter to report heat input, this value should be calculated, in accordance with part 75 of this chapter, using the maximum fuel flow rate and the maximum gross calorific value. If the unit intends to use a flow monitor and a diluent gas monitor, this value should be reported, in accordance with part 75 of this chapter, using the maximum potential flowrate and either the maximum carbon dioxide concentration (in percent CO\textsubscript{2}) or the minimum oxygen concentration (in percent O\textsubscript{2}).

Maximum potential NO\textsubscript{X} emission rate means the emission rate of nitrogen oxides (in lb/mmBtu) calculated in accordance with section 3 of appendix F of part 75 of this chapter, using the maximum potential nitrogen oxides concentration as defined in section 2 of appendix A of part 75 of this chapter.
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and either the maximum oxygen concentration (in percent O\textsubscript{2}) or the minimum carbon dioxide concentration (in percent CO\textsubscript{2}), under all operating conditions of the unit except for unit start up, shutdown, and upsets.

*Maximum rated hourly heat input* means a unit-specific maximum hourly heat input (mmBtu) which is the higher of the manufacturer’s maximum rated hourly heat input or the highest observed hourly heat input.

*Monitoring system* means any monitoring system that meets the requirements of subpart H of this part, including a continuous emissions monitoring system, an excepted monitoring system, or an alternative monitoring system.

*Most stringent State or Federal NO\textsubscript{X} emissions limitation* means, with regard to a NO\textsubscript{X} Budget opt-in source, the lowest NO\textsubscript{X} emissions limitation (in terms of lb/mmBtu) that is applicable to the unit under State or Federal law, regardless of the averaging period to which the emissions limitation applies.

*Nameplate capacity* means the maximum electrical generating output (in MWe) that a generator can sustain over a specified period of time when not restricted by seasonal or other deratings as measured in accordance with the United States Department of Energy standards.

*Non-title V permit* means a federally enforceable permit administered by the permitting authority pursuant to the CAA and regulatory authority under the CAA, other than title V of the CAA and part 70 or 71 of this chapter.

*NO\textsubscript{X} allowance* means an authorization by the permitting authority or the Administrator under the NO\textsubscript{X} Budget Trading Program to emit up to one ton of nitrogen oxides during the control period of the specified year or of any year thereafter.

*NO\textsubscript{X} allowance deduction or deduct NO\textsubscript{X} allowances* means the permanent withdrawal of NO\textsubscript{X} allowances by the Administrator from a NO\textsubscript{X} Allowance Tracking System compliance account or overdraft account to account for the number of tons of NO\textsubscript{X} emissions from a NO\textsubscript{X} Budget unit for a control period, determined in accordance with subpart H of this part, or for any other allowances or excess emissions for a prior period.
control period under §96.54(d) or to account for withdrawal from the NO\textsubscript{X} Budget Program, or for a change in regulatory status, for a NO\textsubscript{X} Budget opt-in source under §96.86 or §96.87.

**NO\textsubscript{X} Budget opt-in permit** means a NO\textsubscript{X} Budget permit covering a NO\textsubscript{X} Budget opt-in source.

**NO\textsubscript{X} Budget opt-in source** means a unit that has been elected to become a NO\textsubscript{X} Budget unit under the NO\textsubscript{X} Budget Trading Program and whose NO\textsubscript{X} Budget opt-in permit has been issued and is in effect under subpart I of this part.

**NO\textsubscript{X} Budget permit** means the legally binding and federally enforceable written document, or portion of such document, issued by the permitting authority under this part, including any permit revisions, specifying the NO\textsubscript{X} Budget Trading Program requirements applicable to a NO\textsubscript{X} Budget source, to each NO\textsubscript{X} Budget unit at the NO\textsubscript{X} Budget source, and to the owners and operators and the NO\textsubscript{X} authorized account representative of the NO\textsubscript{X} Budget source and each NO\textsubscript{X} Budget unit.

**NO\textsubscript{X} Budget source** means a source that includes one or more NO\textsubscript{X} Budget units.

**NO\textsubscript{X} Budget Trading Program** means a multi-state nitrogen oxides air pollution control and emission reduction program established in accordance with this part and pursuant to §51.121 of this chapter, as a means of mitigating the interstate transport of ozone and nitrogen oxides, an ozone precursor.

**NO\textsubscript{X} Budget unit** means a unit that is subject to the NO\textsubscript{X} Budget Trading Program emissions limitation under §96.4 or §96.80.

**Operating** means, with regard to a unit under §§96.22(d)(2) and 96.80, having documented heat input for more than 876 hours in the 6 months immediately preceding the submission of an application for an initial NO\textsubscript{X} Budget permit under §96.83(a).

**Operator** means any person who operates, controls, or supervises a NO\textsubscript{X} Budget unit, a NO\textsubscript{X} Budget source, or unit for which an application for a NO\textsubscript{X} Budget opt-in permit under §96.83 is submitted and not denied or withdrawn and shall include, but not be limited to, any holding company, utility system, or plant manager of such a unit or source.

**Opt-in** means to be elected to become a NO\textsubscript{X} Budget unit under the NO\textsubscript{X} Budget Trading Program through a final, effective NO\textsubscript{X} Budget opt-in permit under subpart I of this part.

**Overdraft account** means the NO\textsubscript{X} Allowance Tracking System account, established by the Administrator under subpart F of this part, for each NO\textsubscript{X} Budget source where there are two or more NO\textsubscript{X} Budget units.

**Owner** means any of the following persons:

1. Any holder of any portion of the legal or equitable title in a NO\textsubscript{X} Budget unit or in a unit for which an application for a NO\textsubscript{X} Budget opt-in permit under §96.83 is submitted and not denied or withdrawn; or
2. Any holder of a leasehold interest in a NO\textsubscript{X} Budget unit or in a unit for which an application for a NO\textsubscript{X} Budget opt-in permit under §96.83 is submitted and not denied or withdrawn; or
3. Any purchaser of power from a NO\textsubscript{X} Budget unit or from a unit for which an application for a NO\textsubscript{X} Budget opt-in permit under §96.83 is submitted and not denied or withdrawn under a life-of-the-unit, firm power contractual arrangement. However, unless expressly provided for in a leasehold agreement, owner shall not include a passive lessor, or a person who has an equitable interest through such lessor, whose rental payments are not based, either directly or indirectly, upon the revenues or income from the NO\textsubscript{X} Budget unit or from a unit for which an application for a NO\textsubscript{X} Budget opt-in permit under §96.83 is submitted and not denied or withdrawn; or
4. With respect to any general account, any person who has an ownership interest with respect to the NO\textsubscript{X} allowances held in the general account and who is subject to the binding agreement for the NO\textsubscript{X} authorized account representative to represent that person’s ownership interest with respect to NO\textsubscript{X} allowances.

**Permitting authority** means the State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to issue or revise permits to meet the requirements of the NO\textsubscript{X}.
Receive or receipt of means, when referring to the permitting authority or the Administrator, to come into possession of a document, information, or correspondence (whether sent in writing or by authorized electronic transmission), as indicated in an official correspondence log, or by a notation made on the document, information, or correspondence, by the permitting authority or the Administrator in the regular course of business.

Receive or receipt of means, when referring to the permitting authority or the Administrator, to come into possession of a document, information, or correspondence (whether sent in writing or by authorized electronic transmission), as indicated in an official correspondence log, or by a notation made on the document, information, or correspondence, by the permitting authority or the Administrator in the regular course of business.

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Receive or receipt of means, when referring to the permitting authority or the Administrator, to come into possession of a document, information, or correspondence (whether sent in writing or by authorized electronic transmission), as indicated in an official correspondence log, or by a notation made on the document, information, or correspondence, by the permitting authority or the Administrator in the regular course of business.

Receive or receipt of means, when referring to the permitting authority or the Administrator, to come into possession of a document, information, or correspondence (whether sent in writing or by authorized electronic transmission), as indicated in an official correspondence log, or by a notation made on the document, information, or correspondence, by the permitting authority or the Administrator in the regular course of business.
Unit operating hour or hour of unit operation means any hour (or fraction of an hour) during which a unit combusts any fuel. Utilization means the heat input (expressed in mmBtu/time) for a unit. The unit’s total heat input for the control period in each year will be determined in accordance with part 75 of this chapter if the NO\(_X\) Budget unit was otherwise subject to the requirements of part 75 of this chapter for the year, or will be based on the best available data reported to the Administrator for the unit if the unit was not otherwise subject to the requirements of part 75 of this chapter for the year.

§ 96.3 Measurements, abbreviations, and acronyms.

Measurements, abbreviations, and acronyms used in this part are defined as follows:


§ 96.4 Applicability.

(a) The following units in a State shall be NO\(_X\) Budget units, and any source that includes one or more such units shall be a NO\(_X\) Budget source, subject to the requirements of this part:

(1) Any unit that, any time on or after January 1, 1995, serves a generator with a nameplate capacity greater than 25 MWe and sells any amount of electricity; or

(2) Any unit that is not a unit under paragraph (a) of this section and that has a maximum design heat input greater than 250 mmBtu/hr.

(b) Notwithstanding paragraph (a) of this section, a unit under paragraph (a) of this section shall be subject only to the requirements of this paragraph (b) if the unit has a federally enforceable permit that meets the requirements of paragraph (b)(1) of this section and restricts the unit to burning only natural gas or fuel oil during a control period in 2003 or later and each control period thereafter and restricts the unit’s operating hours during each such control period to the number of hours (determined in accordance with paragraph (b)(1)(ii) and (iii) of this section) that limits the unit’s potential NO\(_X\) mass emissions for the control period to 25 tons or less. Notwithstanding paragraph (a) of this section, starting with the effective date of such federally enforceable permit, the unit shall not be a NO\(_X\) Budget unit.

(1) For each control period under paragraph (b) of this section, the federally enforceable permit must:

(i) Restrict the unit to burning only natural gas or fuel oil.

(ii) Restrict the unit’s operating hours to the number calculated by dividing 25 tons of potential NO\(_X\) mass emissions by the unit’s maximum potential hourly NO\(_X\) mass emissions.

(iii) Require that the unit’s potential NO\(_X\) mass emissions shall be calculated as follows:

(A) Select the default NO\(_X\) emission rate in Table 2 of §75.19 of this chapter that would otherwise be applicable assuming that the unit burns only the type of fuel (i.e., only natural gas or only fuel oil) that has the highest default NO\(_X\) emission factor of any type of fuel that the unit is allowed to burn under the fuel use restriction in paragraph (b)(1)(i) of this section; and

(B) Multiply the default NO\(_X\) emission rate under paragraph (b)(1)(iii)(A) of this section by the unit’s maximum rated hourly heat input. The owner or operator of the unit may petition the permitting authority to use a lower value for the unit’s maximum rated hourly heat input than the value as defined under §96.2. The permitting authority may approve such lower value if the owner or operator demonstrates that the maximum hourly heat input specified by the manufacturer or the highest observed hourly heat input, or both, are not representative, and that such lower value is representative, of the unit’s current capabilities because modifications have been made to the unit, limiting its capacity permanently.

(iv) Require that the owner or operator of the unit shall retain at the source that includes the unit, for 5 years, records demonstrating that the
operating hours restriction, the fuel use restriction, and the other requirements of the permit related to these restrictions were met.

(v) Require that the owner or operator of the unit shall report the unit’s hours of operation (treating any partial hour of operation as a whole hour of operation) during each control period to the permitting authority by November 1 of each year for which the unit is subject to the federally enforceable permit.

(2) The permitting authority that issues the federally enforceable permit with the fuel use restriction under paragraph (b)(1)(i) and the operating hours restriction under paragraphs (b)(1)(ii) and (iii) of this section will notify the Administrator in writing of each unit under paragraph (a) of this section whose federally enforceable permit issued by the permitting authority includes such restrictions. The permitting authority will also notify the Administrator in writing of each unit under paragraph (a) of this section whose federally enforceable permit issued by the permitting authority is revised to remove any such restriction, whose federally enforceable permit issued by the permitting authority includes any such restriction that is no longer applicable, or which does not comply with any such restriction.

(3) If, for any control period under paragraph (b) of this section, the fuel use restriction under paragraph (b)(1)(i) and the operating hours restriction under paragraphs (b)(1)(ii) and (iii) of this section is removed from the unit’s federally enforceable permit or otherwise becomes no longer applicable or if, for any such control period, the unit does not comply with the fuel use restriction under paragraph (b)(1)(i) of this section or the operating hours restriction under paragraphs (b)(1)(ii) and (iii) of this section is removed from the unit’s federally enforceable permit, the unit shall be a NOX Budget unit, subject to the requirements of this part. Such unit shall be treated as commencing operation and, for a unit under paragraph (a)(1) of this section, commencing commercial operation on September 30 of the control period for which the fuel use restriction or the operating hours restriction is no longer applicable or during which the unit does not comply with the fuel use restriction or the operating hours restriction.

§ 96.5 Retired unit exemption.

(a) This section applies to any NOX Budget unit, other than a NOX Budget opt-in source, that is permanently retired.

(b)(1) Any NOX Budget unit, other than a NOX Budget opt-in source, that is permanently retired shall be exempt from the NOX Budget Trading Program, except for the provisions of this section, §§96.2, 96.3, 96.4, 96.7 and subparts E, F, and G of this part.

(2) The exemption under paragraph (b)(1) of this section shall become effective the day on which the unit is permanently retired. Within 30 days of permanent retirement, the NOX authorized account representative (authorized in accordance with subpart B of this part) shall submit a statement to the permitting authority otherwise responsible for administering any NOX Budget permit for the unit. A copy of the statement shall be submitted to the Administrator. The statement shall state (in a format prescribed by the permitting authority) that the unit is permanently retired and will comply with the requirements of paragraph (c) of this section.

(3) After receipt of the notice under paragraph (b)(2) of this section, the permitting authority will amend any permit covering the source at which the unit is located to add the provisions and requirements of the exemption under paragraphs (b)(1) and (c) of this section.

(c) Special provisions. (1) A unit exempt under this section shall not emit any nitrogen oxides, starting on the date that the exemption takes effect. The owners and operators of the unit will be allocated allowances in accordance with subpart E of this part.

(2)(i) A unit exempt under this section and located at a source that is required, or but for this exemption would be required, to have a title V operating permit shall not resume operation unless the NOX authorized account representative of the source submits a complete NOX Budget permit application under §96.22 for the unit not less than 18 months (or such lesser time provided under the permitting
authority’s title V operating permits regulations for final action on a permit application) prior to the later of May 1, 2003 or the date on which the unit is to first resume operation.

(ii) A unit exempt under this section and located at a source that is required, or but for this exemption would be required, to have a non-title V permit shall not resume operation unless the NOx authorized account representative of the source submits a complete NOx Budget permit application under §96.22 for the unit not less than 18 months (or such lesser time provided under the permitting authority’s non-title V permits regulations for final action on a permit application) prior to the later of May 1, 2003 or the date on which the unit is to first resume operation.

(3) The owners and operators and, to the extent applicable, the NOx authorized account representative of a unit exempt under this section shall comply with the requirements of the NOx Budget Trading Program concerning all periods for which the exemption is not in effect, even if such requirements arise, or must be complied with, after the exemption takes effect.

(4) A unit that is exempt under this section is not eligible to be a NOx Budget opt-in source under subpart I of this part.

(5) For a period of 5 years from the date the records are created, the owners and operators of a unit exempt under this section shall retain at the source that includes the unit, records demonstrating that the unit is permanently retired. The 5-year period for keeping records may be extended for cause, at any time prior to the end of the period, in writing by the permitting authority or the Administrator. The owners and operators bear the burden of proof that the unit is permanently retired.

(b) Loss of exemption. (1) On the earlier of the following dates, a unit exempt under paragraph (b) of this section shall lose its exemption:

(A) The date on which the NOx authorized account representative submits a NOx Budget permit application under paragraph (c)(2) of this section; or

(B) The date on which the NOx authorized account representative is required under paragraph (c)(2) of this section to submit a NOx Budget permit application.

(ii) For the purpose of applying monitoring requirements under subpart H of this part, a unit that loses its exemption under this section shall be treated as a unit that commences operation or commercial operation on the first date on which the unit resumes operation.

§96.6 Standard requirements.

(a) Permit Requirements. (1) The NOx authorized account representative of each NOx Budget source required to have a federally enforceable permit and each NOx Budget unit required to have a federally enforceable permit at the source shall:

(i) Submit to the permitting authority a complete NOx Budget permit application under §96.22 in accordance with the deadlines specified in §96.21(b) and (c);

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review a NOx Budget permit application and issue or deny a NOx Budget permit.

(2) The owners and operators of each NOx Budget source required to have a federally enforceable permit and each NOx Budget unit required to have a federally enforceable permit at the source shall:

(i) Submit to the permitting authority a complete NOx Budget permit application under §96.22 in accordance with the deadlines specified in §96.21(b) and (c);

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review a NOx Budget permit application and issue or deny a NOx Budget permit.

(2) The owners and operators of each NOx Budget source required to have a federally enforceable permit and each NOx Budget unit required to have a federally enforceable permit at the source shall have a NOx Budget permit issued by the permitting authority and operate the unit in compliance with such NOx Budget permit.

(3) The owners and operators of a NOx Budget source that is not otherwise required to have a federally enforceable permit are not required to submit a NOx Budget permit application, and to have a NOx Budget permit, under subpart C of this part for such NOx Budget source.

(b) Monitoring requirements. (1) The owners and operators and, to the extent applicable, the NOx authorized account representative of each NOx Budget source and each NOx Budget unit at the source shall comply with the monitoring requirements of subpart H of this part.

(2) The emissions measurements recorded and reported in accordance with
subpart H of this part shall be used to determine compliance by the unit with the NOx Budget emissions limitation under paragraph (c) of this section.

(c) Nitrogen oxides requirements. (1) The owners and operators of each NOx Budget source and each NOx Budget unit at the source shall hold NOx allowances available for compliance deductions under §96.54, as of the NOx allowance transfer deadline, in the unit’s compliance account and the source’s overdraft account in an amount not less than the total NOx emissions for the control period from the unit, as determined in accordance with subpart H of this part, plus any amount necessary to account for actual utilization under §96.42(e) for the control period.

(2) Each ton of nitrogen oxides emitted in excess of the NOx Budget emissions limitation shall constitute a separate violation of this part, the CAA, and applicable State law.

(3) A NOx Budget unit shall be subject to the requirements under paragraph (c)(1) of this section starting on the later of May 1, 2003 or the date on which the unit commences operation.

(4) NOx allowances shall be held in, deducted from, or transferred among NOx Allowance Tracking System accounts in accordance with subparts E, F, G, and I of this part.

(5) A NOx allowance shall not be deducted, in order to comply with the requirements under paragraph (c)(1) of this section, for a control period in a year prior to the year for which the NOx allowance was allocated.

(6) A NOx allowance allocated by the permitting authority or the Administrator under the NOx Budget Trading Program is a limited authorization to emit one ton of nitrogen oxides in accordance with the NOx Budget Trading Program. No provision of the NOx Budget Trading Program, the NOx Budget permit application, the NOx Budget permit, or an exemption under §96.5 and no provision of law shall be construed to limit the authority of the United States or the State to terminate or limit such authorization.

(7) A NOx allowance allocated by the permitting authority or the Administrator under the NOx Budget Trading Program does not constitute a property right.

(8) Upon recordation by the Administrator under subpart F, G, or I of this part, every allocation, transfer, or deduction of a NOx allowance to or from a NOx Budget unit’s compliance account or the overdraft account of the source where the unit is located is deemed to amend automatically, and become a part of, any NOx Budget permit of the NOx Budget unit by operation of law without any further review.

(d) Excess emissions requirements. (1) The owners and operators of a NOx Budget unit that has excess emissions in any control period shall:

(i) Surrender the NOx allowances required for deduction under §96.54(d)(1); and

(ii) Pay any fine, penalty, or assessment or comply with any other remedy imposed under §96.54(d)(3).

(e) Recordkeeping and Reporting requirements. (1) Unless otherwise provided, the owners and operators of the NOx Budget source and each NOx Budget unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the permitting authority or the Administrator.

(i) The account certificate of representation for the NOx authorized account representative for the source and each NOx Budget unit at the source and all documents that demonstrate the truth of the statements in the account certificate of representation, in accordance with §96.13; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents become superseded because of the submission of a new account certificate of representation changing the NOx authorized account representative.

(ii) All emissions monitoring information, in accordance with subpart H of this part; provided that to the extent that subpart H of this part provides for a 3-year period for recordkeeping, the 3-year period shall apply.

(iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the NOx Budget Trading Program.
§ 96.7 Computation of time.

(a) Unless otherwise stated, any time period scheduled, under the NOX Budget Trading Program, to begin on the occurrence of an act or event shall begin on the day the act or event occurs.

(b) Unless otherwise stated, any time period scheduled, under the NOX Budget Trading Program, to begin before the occurrence of an act or event shall be computed so that the period ends the day before the act or event occurs.

(c) Unless otherwise stated, if the final day of any time period, under the NOX Budget Trading Program, falls on a weekend or a State or Federal holiday, the time period shall be extended to the next business day.

Subpart B—NOX Authorized Account Representative for NOX Budget Sources

§ 96.10 Authorization and responsibilities of the NOX authorized account representative.

(a) Except as provided under §96.11, each NOX Budget source, including all NOX Budget units at the source, shall have one and only one NOX authorized account representative, with regard to all matters under the NOX Budget Trading Program concerning the source or any NOX Budget unit at the source.
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(b) The NOx authorized account representative of the NOx Budget source shall be selected by an agreement binding on the owners and operators of the source and all NOx Budget units at the source.

(c) Upon receipt by the Administrator of a complete account certificate of representation under §96.13, the NOx authorized account representative of the source shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each owner and operator of the NOx Budget source represented and each NOx Budget unit at the source in all matters pertaining to the NOx Budget Trading Program, notwithstanding any agreement between the NOx authorized account representative and such owners and operators. The owners and operators shall be bound by any decision or order issued to the NOx authorized account representative by the permitting authority, the Administrator, or a court regarding the source or unit.

(d) No NOx Budget permit shall be issued, and no NOx Allowance Tracking System account shall be established for a NOx Budget unit at a source, until the Administrator has received a complete account certificate of representation under §96.13 for a NOx authorized account representative of the source and the NOx Budget units at the source.

(e)(1) Each submission under the NOx Budget Trading Program shall be submitted, signed, and certified by the NOx authorized account representative for each NOx Budget source on behalf of which the submission is made. Each such submission shall include the following certification statement by the NOx authorized account representative: “I am authorized to make this submission on behalf of the owners and operators of the NOx Budget sources or NOx Budget units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(2) The permitting authority and the Administrator will accept or act on a submission made on behalf of owner or operators of a NOx Budget source or a NOx Budget unit only if the submission has been made, signed, and certified in accordance with paragraph (e)(1) of this section.

§ 96.11 Alternate NOx authorized account representative.

(a) An account certificate of representation may designate one and only one alternate NOx authorized account representative who may act on behalf of the NOx authorized account representative. The agreement by which the alternate NOx authorized account representative is selected shall include a procedure for authorizing the alternate NOx authorized account representative to act in lieu of the NOx authorized account representative.

(b) Upon receipt by the Administrator of a complete account certificate of representation under §96.13, any representation, action, inaction, or submission by the alternate NOx authorized account representative shall be deemed to be a representation, action, inaction, or submission by the NOx authorized account representative.

(c) Except in this section and §§96.10(a), 96.12, 96.13, and 96.51, whenever the term “NOx authorized account representative” is used in this part, the term shall be construed to include the alternate NOx authorized account representative.

§ 96.12 Changing the NOx authorized account representative and the alternate NOx authorized account representative; changes in the owners and operators.

(a) Changing the NOx authorized account representative. The NOx authorized account representative may be changed at any time upon receipt by the Administrator of a superseding
§ 96.13  Account certificate of representation.

(a) A complete account certificate of representation for a NOx authorized account representative or an alternate NOx authorized account representative shall include the following elements in a format prescribed by the Administrator:

(1) Identification of the NOx Budget source and each NOx Budget unit at the source for which the account certificate of representation is submitted.

(2) The name, address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the NOx authorized account representative and any alternate NOx authorized account representative.

(3) A list of the owners and operators of the NOx Budget source and of each NOx Budget unit at the source.

(4) The following certification statement by the NOx authorized account representative and any alternate NOx authorized account representative, as applicable, by an agreement binding on the owners and operators of the NOx Budget source and each NOx Budget unit at the source. I certify that I have all the necessary authority to carry out my duties and responsibilities under the NOx Budget Trading Program on behalf of the owners and operators of the NOx Budget source and each NOx Budget unit at the source and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions and by any decision or order issued to me by the permitting authority, the Administrator, or a court regarding the source or unit.”

(5) The signature of the NOx authorized account representative and any alternate NOx authorized account representative and the dates signed.

(b) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the account certificate of representation under §96.13. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous NOx authorized account representative prior to the time and date when the Administrator receives the superseding account certificate of representation shall be binding on the new NOx authorized account representative and the owners and operators of the NOx Budget source and the NOx Budget units at the source.

(c) Changes in the owners and operators.

(1) In the event a new owner or operator of a NOx Budget source or a NOx Budget unit is not included in the list of owners and operators submitted in the account certificate of representation, such new owner or operator shall be deemed to be subject to and bound by the account certificate of representation, the representations, actions, inactions, and submissions of the NOx authorized account representative and any alternate NOx authorized account representative of the source or unit, and the decisions, orders, actions, and inactions of the permitting authority or the Administrator, as if the new owner or operator were included in such list.

(2) Within 30 days following any change in the owners and operators of a NOx Budget source or a NOx Budget unit, including the addition of a new owner or operator, the NOx authorized account representative or alternate NOx authorized account representative shall submit a revision to the account certificate of representation amending the list of owners and operators to include the change.
representation shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

§ 96.14 Objections concerning the NO\textsubscript{X} authorized account representative.

(a) Once a complete account certificate of representation under § 96.13 has been submitted and received, the permitting authority and the Administrator will rely on the account certificate of representation unless and until a superseding complete account certificate of representation under § 96.13 is received by the Administrator.

(b) Except as provided in § 96.12(a) or (b), no objection or other communication submitted to the permitting authority or the Administrator concerning the authorization, or any representation, action, inaction, or submission of the NO\textsubscript{X} authorized account representative shall affect any representation, action, inaction, or submission of the NO\textsubscript{X} authorized account representative or the finality of any decision or order by the permitting authority or the Administrator under the NO\textsubscript{X} Budget Trading Program.

(c) Neither the permitting authority nor the Administrator will adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of any NO\textsubscript{X} authorized account representative, including private legal disputes concerning the proceeds of NO\textsubscript{X} allowance transfers.

Subpart C—Permits

§ 96.20 General NO\textsubscript{X} Budget trading program permit requirements.

(a) For each NO\textsubscript{X} Budget source required to have a federally enforceable permit, such permit shall include a NO\textsubscript{X} Budget permit administered by the permitting authority.

(1) For NO\textsubscript{X} Budget sources required to have a title V operating permit, the NO\textsubscript{X} Budget portion of the title V permit shall be administered in accordance with the permitting authority’s regulations promulgated to administer non-title V permits, except as provided otherwise by this subpart or subpart I of this part. The applicable provisions of such non-title V permits regulations may include, but are not limited to, provisions addressing permit applications, permit application shield, permit duration, permit shield, permit issuance, permit revision and reopening, public participation, State review, and review by the Administrator.

(b) Each NO\textsubscript{X} Budget permit (including a draft or proposed NO\textsubscript{X} Budget permit, if applicable) shall contain all applicable NO\textsubscript{X} Budget Trading Program requirements and shall be a complete and segregable portion of the permit under paragraph (a) of this section.

§ 96.21 Submission of NO\textsubscript{X} Budget permit applications.

(a) Duty to apply. The NO\textsubscript{X} authorized account representative of any NO\textsubscript{X} Budget source required to have a federally enforceable permit shall submit to the permitting authority a complete NO\textsubscript{X} Budget permit application under § 96.22 by the applicable deadline in paragraph (b) of this section.

(b)(1) For NO\textsubscript{X} Budget sources required to have a title V operating permit:

(i) For any source, with one or more NO\textsubscript{X} Budget units under § 96.4 that commence operation before January 1, 2000, the NO\textsubscript{X} authorized account representative shall submit a complete NO\textsubscript{X} Budget permit application under § 96.22 covering such NO\textsubscript{X} Budget units to the permitting authority at least 18
§ 96.22  Information requirements for NOx Budget permit applications.

A complete NOx Budget permit application shall include the following elements concerning the NOx Budget source for which the application is submitted, in a format prescribed by the permitting authority:

(a) Identification of the NOx Budget source, including plant name and the ORIS (Office of Regulatory Information Systems) or facility code assigned to the source by the Energy Information Administration, if applicable;

(b) Identification of each NOx Budget unit at the NOx Budget source and whether it is a NOx Budget unit under § 96.4 or under subpart I of this part;

(c) The standard requirements under § 96.6; and

(d) For each NOx Budget opt-in unit at the NOx Budget source, the following certification statements by the NOx authorized account representative:

(1) “I certify that each unit for which this permit application is submitted under subpart I of this part is not a NOx Budget unit under 40 CFR 96.4 and is not covered by a retired unit exemption under 40 CFR 96.5 that is in effect.”

(2) If the application is for an initial NOx Budget opt-in permit, “I certify that each unit for which this permit application is submitted under subpart I is currently operating, as that term is defined under 40 CFR 96.2.”

§ 96.23  NOx Budget permit contents.

(a) Each NOx Budget permit (including any draft or proposed NOx Budget permit, if applicable) will contain, in a format prescribed by the permitting authority, all elements required for a
complete NOx Budget permit application under §96.22 as approved or adjusted by the permitting authority.
(b) Each NOx Budget permit is deemed to incorporate automatically the definitions of terms under §96.2 and, upon recordation by the Administrator under subparts F, G, or I of this part, every allocation, transfer, or deduction of an NOx allowance to or from the compliance accounts of the NOx Budget units covered by the permit or the overdraft account of the NOx Budget source covered by the permit.

§ 96.24 Effective date of initial NOx Budget permit.
The initial NOx Budget permit covering a NOx Budget unit for which a complete NOx Budget permit application is timely submitted under §96.21(b) shall become effective by the later of:
(a) May 1, 2003;
(b) May 1 of the year in which the NOx Budget unit commences operation, if the unit commences operation on or before May 1 of that year;
(c) The date on which the NOx Budget unit commences operation, if the unit commences operation during a control period; or
(d) May 1 of the year following the year in which the NOx Budget unit commences operation, if the unit commences operation on or after October 1 of the year.

§ 96.25 NOx Budget permit revisions.
(a) For a NOx Budget source with a title V operating permit, except as provided in §96.23(b), the permitting authority will revise the NOx Budget permit, as necessary, in accordance with the permitting authority’s title V operating permits regulations addressing permit revisions.
(b) For a NOx Budget source with a non-title V permit, except as provided in §96.23(b), the permitting authority will revise the NOx Budget permit, as necessary, in accordance with the permitting authority’s non-title V permits regulations addressing permit revisions.

Subpart D—Compliance Certification

§ 96.30 Compliance certification report.
(a) Applicability and deadline. For each control period in which one or more NOx Budget units at a source are subject to the NOx Budget emissions limitation, the NOx authorized account representative of the source shall submit to the permitting authority and the Administrator by November 30 of that year, a compliance certification report for each source covering all such units.

(b) Contents of report. The NOx authorized account representative shall include in the compliance certification report under paragraph (a) of this section the following elements, in a format prescribed by the Administrator, concerning each unit at the source and subject to the NOx Budget emissions limitation for the control period covered by the report:
(1) Identification of each NOx Budget unit;
(2) At the NOx authorized account representative’s option, the serial numbers of the NOx allowances that are to be deducted from each unit’s compliance account under §96.54 for the control period;
(3) At the NOx authorized account representative’s option, for units sharing a common stack and having NOx emissions that are not monitored separately or apportioned in accordance with subpart H of this part, the percentage of allowances that is to be deducted from each unit’s compliance account under §96.54(e); and
(4) The compliance certification under paragraph (c) of this section.

(c) Compliance certification. In the compliance certification report under paragraph (a) of this section, the NOx authorized account representative shall certify, based on reasonable inquiry of those persons with primary responsibility for operating the source and the NOx Budget units at the source in compliance with the NOx Budget Trading Program, whether each NOx Budget unit for which the compliance certification is submitted was operated during the calendar year covered by
§ 96.31 Permitting authority's and Administrator's action on compliance certifications.

(a) The permitting authority or the Administrator may review and conduct independent audits concerning any compliance certification or any other submission under the NOX Budget Trading Program and make appropriate adjustments of the information in the compliance certifications or other submissions.

(b) The Administrator may deduct NOX allowances from or transfer NOX allowances to a unit's compliance account or a source's overdraft account based on the information in the compliance certifications or other submissions, as adjusted under paragraph (a) of this section.

Subpart E—NOX Allowance Allocations

§ 96.40 State trading program budget.

The State trading program budget allocated by the permitting authority under §96.42 for a control period will equal the total number of tons of NOX emissions apportioned to the NOX Budget units under §96.4 in the State for the control period, as determined by the applicable, approved State implementation plan.

§ 96.41 Timing requirements for NOX allowance allocations.

(a) By September 30, 1999, the permitting authority will submit to the Administrator the NOX allowance allocations, in accordance with §96.42, for the control periods in 2003, 2004, and 2005.

(b) By April 1, 2003 and April 1 of each year thereafter, the permitting authority will submit to the Administrator the NOX allowance allocations, in accordance with §96.42, for the control period in the year that is three years after the year of the applicable deadline for submission under this paragraph (b). If the permitting authority fails to submit to the Administrator the NOX allowance allocations in accordance with this paragraph (b), the Administrator will allocate, for the applicable control period, the same number of NOX allowances as were allocated for the preceding control period.

(c) By April 1, 2004 and April 1 of each year thereafter, the permitting authority will submit to the Administrator the NOX allowance allocations, in accordance with §96.42, for any NOX allowances remaining in the allocation set-aside for the prior control period.
§ 96.42 NO\textsubscript{X} allowance allocations.

(a)(1) The heat input (in mmBtu) used for calculating NO\textsubscript{X} allowance allocations for each NO\textsubscript{X} Budget unit under §96.4 will be:

(i) For a NO\textsubscript{X} allowance allocation under §96.41(a), the average of the two highest amounts of the unit’s heat input for the control periods in 1995, 1996, and 1997 if the unit is under §96.4(a)(1) or the control period in 1995 if the unit is under §96.4(a)(2); and

(ii) For a NO\textsubscript{X} allowance allocation under §96.41(b), the unit’s heat input for the control period in the year that is four years before the year for which the NO\textsubscript{X} allocation is being calculated.

(2) The unit’s total heat input for the control period in each year specified under paragraph (a)(1) of this section will be determined in accordance with part 75 of this chapter if the NO\textsubscript{X} Budget unit was otherwise subject to the requirements of part 75 of this chapter for the year, or will be based on the best available data reported to the permitting authority for the unit if the unit was not otherwise subject to the requirements of part 75 of this chapter for the year.

(b) For each control period under §96.41, the permitting authority will allocate to all NO\textsubscript{X} Budget units under §96.4(a)(1) in the State that commenced operation before May 1 of the period used to calculate heat input under paragraph (a)(1) of this section, a total number of NO\textsubscript{X} allowances equal to 95 percent in 2003, 2004, and 2005, or 98 percent thereafter, of the tons of NO\textsubscript{X} emissions in the State trading program budget apportioned to electric generating units. This adjustment will be made by: multiplying each unit’s allocation by 95 percent in 2003, 2004, and 2005, or 98 percent thereafter, of the number of tons of NO\textsubscript{X} emissions in the State trading program budget apportioned to electric generating units. This adjustment will be made by: multiplying each unit’s allocation by 95 percent in 2003, 2004, and 2005, or 98 percent thereafter, of the number of tons of NO\textsubscript{X} emissions in the State trading program budget apportioned to electric generating units.

(c) For each control period under §96.41, the permitting authority will allocate to all NO\textsubscript{X} Budget units under §96.4(a)(2) in the State that commenced operation before May 1 of the period used to calculate heat input under paragraph (a)(1) of this section, a total number of NO\textsubscript{X} allowances equal to 95 percent in 2003, 2004, and 2005, or 98 percent thereafter, of the tons of NO\textsubscript{X} emissions in the State trading program budget apportioned to electric generating units under §96.40 in accordance with the following procedures:

1. The permitting authority will allocate NO\textsubscript{X} allowances to each NO\textsubscript{X} Budget unit under §96.4(a)(1) in an amount equaling 0.17 lb/mmBtu multiplied by the heat input determined under paragraph (a) of this section, rounded to the nearest whole NO\textsubscript{X} allowance as appropriate.

2. If the initial total number of NO\textsubscript{X} allowances allocated to all NO\textsubscript{X} Budget units under §96.4(a)(1) in the State for a control period under paragraph (b)(1) of this section does not equal 95 percent in 2003, 2004, and 2005, or 98 percent thereafter, of the number of tons of NO\textsubscript{X} emissions in the State trading program budget apportioned to non-electric generating units, the permitting authority will adjust the total number of NO\textsubscript{X} allowances allocated to

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all such NOₓ Budget units for the control period under paragraph (c)(1) of this section so that the total number of NOₓ allowances allocated equals 95 percent in 2003, 2004, and 2005, or 98 percent thereafter, of the number of tons of NOₓ emissions in the State trading program budget apportioned to non-electric generating units. This adjustment will be made by: multiplying each unit’s allocation by 95 percent in 2003, 2004, and 2005, or 98 percent thereafter, of the number of tons of NOₓ emissions in the State trading program budget apportioned to non-electric generating units divided by the total number of NOₓ allowances allocated under paragraph (c)(1) of this section, and rounding to the nearest whole NOₓ allowance as appropriate.

(d) For each control period under § 96.41, the permitting authority will allocate NOₓ allowances to NOₓ Budget units under § 96.4 in the State that commenced operation, or is projected to commence operation, on or after May 1 of the period used to calculate heat input under paragraph (a)(1) of this section, in accordance with the following procedures:

(1) The permitting authority will establish one allocation set-aside for each control period. Each allocation set-aside will be allocated NOₓ allowances equal to 5 percent in 2003, 2004, and 2005, or 2 percent thereafter, of the tons of NOₓ emissions in the State trading program budget under § 96.40, rounded to the nearest whole NOₓ allowance as appropriate.

(2) The NOₓ authorized account representative of a NOₓ Budget unit under paragraph (d) of this section may submit to the permitting authority a request, in writing or in a format specified by the permitting authority, to be allocated NOₓ allowances for no more than five consecutive control periods under § 96.41, starting with the control period during which the NOₓ Budget unit commenced, or is projected to commence, operation and ending with the control period preceding the control period for which it will receive an allocation under paragraph (b) or (c) of this section. The NOₓ allowance allocation request must be submitted prior to May 1 of the first control period for which the NOₓ allowance allocation is requested and after the date on which the permitting authority issues a permit to construct the NOₓ Budget unit.

(3) In a NOₓ allowance allocation request under paragraph (d)(2) of this section, the NOₓ authorized account representative for units under § 96.4(a)(1) may request for a control period NOₓ allowances in an amount that does not exceed 0.15 lb/mmBtu multiplied by the NOₓ Budget unit’s maximum design heat input (in mmBtu/hr) multiplied by the number of hours remaining in the control period starting with the first day in the control period on which the unit operated or is projected to operate.

(4) In a NOₓ allowance allocation request under paragraph (d)(2) of this section, the NOₓ authorized account representative for units under § 96.4(a)(2) may request for a control period NOₓ allowances in an amount that does not exceed 0.17 lb/mmBtu multiplied by the NOₓ Budget unit’s maximum design heat input (in mmBtu/hr) multiplied by the number of hours remaining in the control period starting with the first day in the control period on which the unit operated or is projected to operate.

(5) The permitting authority will review, and allocate NOₓ allowances pursuant to, each NOₓ allowance allocation request under paragraph (d)(2) of this section in the order that the request is received by the permitting authority.

(i) Upon receipt of the NOₓ allowance allocation request, the permitting authority will determine whether, and will make any necessary adjustments to the request to ensure that, for units under § 96.4(a)(1), the control period and the number of allowances specified are consistent with the requirements of paragraphs (d)(2) and (3) of this section and, for units under § 96.4(a)(2), the control period and the number of allowances specified are consistent with the requirements of paragraphs (d)(2) and (4) of this section.

(ii) If the allocation set-aside for the control period for which NOₓ allowances are requested has an amount of NOₓ allowances not less than the number requested (as adjusted under paragraph (d)(5)(i) of this section), the permitting authority will allocate the
amount of the NO\textsubscript{X} allowances requested (as adjusted under paragraph (d)(5)(i) of this section) to the NO\textsubscript{X} Budget unit.

(iii) If the allocation set-aside for the control period for which NO\textsubscript{X} allowances are requested has a smaller amount of NO\textsubscript{X} allowances than the number requested (as adjusted under paragraph (d)(5)(i) of this section), the permitting authority will deny in part the request and allocate only the remaining number of NO\textsubscript{X} allowances in the allocation set-aside to the NO\textsubscript{X} Budget unit.

(iv) Once an allocation set-aside for a control period has been depleted of all NO\textsubscript{X} allowances, the permitting authority will deny, and will not allocate any NO\textsubscript{X} allowances pursuant to, any NO\textsubscript{X} allowance allocation request under which NO\textsubscript{X} allowances have not already been allocated for the control period.

(v) Within 60 days of receipt of a NO\textsubscript{X} allowance allocation request, the permitting authority will take appropriate action under paragraph (d)(5) of this section and notify the NO\textsubscript{X} authorized account representative that submitted the request and the Administrator of the number of NO\textsubscript{X} allowances (if any) allocated for the control period to the NO\textsubscript{X} Budget unit.

(e) For a NO\textsubscript{X} Budget unit that is allocated NO\textsubscript{X} allowances under paragraph (d) of this section for a control period, the Administrator will deduct NO\textsubscript{X} allowances under §96.54(b) or (e) to account for the actual utilization of the unit during the control period. The Administrator will calculate the number of NO\textsubscript{X} allowances to be deducted shall be zero if the number calculated is less than zero:

\[
\text{NO\textsubscript{X} allowances deducted for actual utilization for units under §96.4(a)(1)} = (\text{Unit’s NO\textsubscript{X} allowances allocated for control period}) - (\text{Unit’s actual control period utilization} \times 0.17 \text{ lb/ mmBtu})
\]

No\textsubscript{X} allowances deducted for actual utilization for units under §96.4(a)(2) = (Unit’s NO\textsubscript{X} allowances allocated for control period) - (Unit’s actual control period utilization \times 0.15 \text{ lb/ mmBtu})

Where:

“Unit’s NO\textsubscript{X} allowances allocated for control period” is the number of NO\textsubscript{X} allowances allocated to the unit for the control period under paragraph (d) of this section; and

“Unit’s actual control period utilization” is the utilization (in mmBtu), as defined in §96.2, of the unit during the control period.

(f) After making the deductions for compliance under §96.54(b) or (e) for a control period, the Administrator will notify the permitting authority whether any NO\textsubscript{X} allowances remain in the allocation set-aside for the control period. The permitting authority will allocate any such NO\textsubscript{X} allowances to the NO\textsubscript{X} Budget units in the State using the following formula and rounding to the nearest whole NO\textsubscript{X} allowance as appropriate:

Unit’s share of NO\textsubscript{X} allowances remaining in allocation set-aside = Total NO\textsubscript{X} allowances remaining in allocation set-aside × (Unit’s NO\textsubscript{X} allowance allocation + State trading program budget excluding allocation set-aside)

Where:

“Total NO\textsubscript{X} allowances remaining in allocation set-aside” is the total number of NO\textsubscript{X} allowances remaining in the allocation set-aside to which the allocation set-aside applies;

“Unit’s NO\textsubscript{X} allowance allocation” is the number of NO\textsubscript{X} allowances allocated under paragraph (b) or (c) of this section to the unit for the control period to which the allocation set-aside applies; and

“State trading program budget excluding allocation set-aside” is the State trading program budget under §96.40 for the control period to which the allocation set-aside applies multiplied by 95 percent if the control period is in 2003, 2004, or 2005 or 98 percent if the control period is in any year thereafter, rounded to the nearest whole NO\textsubscript{X} allowance as appropriate.

Subpart F—NO\textsubscript{X} Allowance Tracking System

§ 96.50 NO\textsubscript{X} Allowance Tracking System accounts.

(a) Nature and function of compliance accounts and overdraft accounts. Consistent with §96.51(a), the Administrator will establish one compliance account for each NO\textsubscript{X} Budget unit and one overdraft account for each source with one or more NO\textsubscript{X} Budget units. Allocations of NO\textsubscript{X} allowances pursuant to subpart E of this part or §96.88 and deductions or transfers of NO\textsubscript{X} allowances pursuant to §96.31, §96.54, §96.56, subpart G of this part, or subpart I of this part will be recorded in the compliance accounts or overdraft accounts in accordance with this subpart.

(b) Nature and function of general accounts. Consistent with §96.51(b), the Administrator will establish, upon request, a general account for any person. Transfers of allowances pursuant to subpart G of this part will be recorded in the general account in accordance with this subpart.

§ 96.51 Establishment of accounts.

(a) Compliance accounts and overdraft accounts. Upon receipt of a complete account certificate of representation under §96.13, the Administrator will establish:

(1) A compliance account for each NO\textsubscript{X} Budget unit for which the account certificate of representation was submitted; and

(2) An overdraft account for each source for which the account certificate of representation was submitted and that has two or more NO\textsubscript{X} Budget units.

(b) General accounts. (1) Any person may apply to open a general account for the purpose of holding and transferring allowances. A complete application for a general account shall be submitted to the Administrator and shall include the following elements in a format prescribed by the Administrator:

(i) Name, mailing address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the NO\textsubscript{X} authorized account representative and any alternate NO\textsubscript{X} authorized account representative;

(ii) At the option of the NO\textsubscript{X} authorized account representative, organization name and type of organization;

(iii) A list of all persons subject to a binding agreement for the NO\textsubscript{X} authorized account representative or any alternate NO\textsubscript{X} authorized account representative to represent their ownership interest with respect to the allowances held in the general account;

(iv) The following certification statement by the NO\textsubscript{X} authorized account representative and any alternate NO\textsubscript{X} authorized account representative: ‘‘I certify that I was selected as the NO\textsubscript{X} authorized account representative or the NO\textsubscript{X} alternate authorized account representative, as applicable, by an agreement that is binding on all persons who have an ownership interest with respect to allowances held in the general account. I certify that I have all the necessary authority to carry out my duties and responsibilities under the NO\textsubscript{X} Budget Trading Program on behalf of such persons and that each such person shall be fully bound by my representations, actions, inactions, or submissions and by any order or decision issued to me by the Administrator or a court regarding the general account.’’

(v) The signature of the NO\textsubscript{X} authorized account representative and any alternate NO\textsubscript{X} authorized account representative and the dates signed.

(vi) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the account certificate of representation shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

(2) Upon receipt by the Administrator of a complete application for a general account under paragraph (b)(1) of this section:

(i) The Administrator will establish a general account for the person or persons for whom the application is submitted.

(ii) The NO\textsubscript{X} authorized account representative and any alternate NO\textsubscript{X} authorized account representative for the general account shall represent and, by
his or her representations, actions, inactions, or submissions, legally bind each person who has an ownership interest with respect to NOX allowances held in the general account in all matters pertaining to the NOX Budget Trading Program, notwithstanding any agreement between the NOX authorized account representative or any alternate NOX authorized account representative and such person. Any such person shall be bound by any order or decision issued to the NOX authorized account representative or any alternate NOX authorized account representative by the Administrator or a court regarding the general account.

(iii) Each submission concerning the general account shall be submitted, signed, and certified by the NOX authorized account representative or any alternate NOX authorized account representative for the persons having an ownership interest with respect to NOX allowances held in the general account. Each such submission shall include the following certification statement by the NOX authorized account representative or any alternate NOX authorized account representative any: “I am authorized to make this submission on behalf of the persons having an ownership interest with respect to the NOX allowances held in the general account. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(iv) The Administrator will accept or act on a submission concerning the general account only if the submission has been made, signed, and certified in accordance with paragraph (b)(2)(iii) of this section.

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(3)(i) An application for a general account may designate one and only one NOX authorized account representative and one and only one alternate NOX authorized account representative who may act on behalf of the NOX authorized account representative. The agreement by which the alternate NOX authorized account representative is selected shall include a procedure for authorizing the alternate NOX authorized account representative to act in lieu of the NOX authorized account representative.

(ii) Upon receipt by the Administrator of a complete application for a general account under paragraph (b)(1) of this section, any representation, action, inaction, or submission by any alternate NOX authorized account representative shall be deemed to be a representation, action, inaction, or submission by the NOX authorized account representative.

(4)(i) The NOX authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous NOX authorized account representative prior to the time and date when the Administrator receives the superseding application for a general account shall be binding on the new NOX authorized account representative and the persons with an ownership interest with respect to the allowances in the general account.

(ii) The alternate NOX authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate NOX authorized account representative prior to the time and date when the Administrator receives the superseding application for a general account shall be binding on the new alternate NOX authorized account representative and the persons with an ownership interest with respect to the allowances in the general account.
§ 96.52 NOX Allowance Tracking System responsibilities of NOX authorized account representative.

(a) Following the establishment of a NOX Allowance Tracking System account, all submissions to the Administrator pertaining to the account, including, but not limited to, submissions concerning the deduction or transfer of NOX allowances in the account, shall be made only by the NOX authorized account representative for the account.

(b) Authorized account representative identification. The Administrator will assign a unique identifying number to each NOX authorized account representative.

§ 96.53 Recordation of NOX allowance allocations.

(a) The Administrator will record the NOX allowances for 2003 in the NOX Budget units' compliance accounts and the allocation set-asides, as allocated under subpart E of this part. The Administrator will also record the NOX allowances allocated under §96.88(a)(1) for each NOX Budget opt-in source in its compliance account.

(b) Each year, after the Administrator has made all deductions from a NOX Budget unit's compliance account and the overdraft account for the year after the last year for which allowances were previously allocated to the compliance account. Each year, the Administrator will also record NOX allowances, as allocated under subpart E of this part, in the allocation set-aside for the year after the last year for which allowances were
§ 96.42(e), for the control period:

(a) NOX allowance transfers. When allocating NOX allowances to and recording them in an account, the Administrator will assign each NOX allowance a unique identification number that will include digits identifying the year for which the NOX allowance is allocated.

§ 96.54 Compliance.

(a) NOX allowance transfer deadline. The NOX allowances are available to be deducted for compliance with a unit’s NOX Budget emissions limitation for a control period in a given year only if the NOX allowances:

(i) Were allocated for a control period in a prior year or the same year; and

(ii) Are held in the unit’s compliance account, or the overdraft account of the source where the unit is located, as of the NOX allowance transfer deadline for that control period or are transferred into the compliance account or overdraft account by a NOX allowance transfer correctly submitted for recordation under §96.60 by the NOX allowance transfer deadline for that control period.

(b) Deductions for compliance. (1) Following the recordation, in accordance with §96.61, of NOX allowance transfers submitted for recordation in the unit’s compliance account or the overdraft account of the source where the unit is located by the NOX allowance transfer deadline for a control period, the Administrator will deduct NOX allowances available under paragraph (a) of this section to cover the unit’s NOX emissions (as determined in accordance with subpart H of this part), or to account for actual utilization under §96.42(e), for the control period:

(i) From the compliance account; and

(ii) Only if no more NOX allowances available under paragraph (a) of this section remain in the compliance account, from the overdraft account. In deducting allowances for units at the source from the overdraft account, the Administrator will begin with the unit having the compliance account with the lowest NOX Allowance Tracking System account number and end with the unit having the compliance account with the highest NOX Allowance Tracking System account number (with account numbers sorted beginning with the left-most character and ending with the right-most character and the letter characters assigned values in alphabetical order and less than all numeric characters).

(2) The Administrator will deduct NOX allowances first under paragraph (b)(1)(i) of this section and then under paragraph (b)(1)(ii) of this section:

(i) Until the number of NOX allowances deducted for the control period equals the number of tons of NOX emissions, determined in accordance with subpart H of this part, from the unit for the control period for which compliance is being determined, plus the number of NOX allowances required for deduction to account for actual utilization under §96.42(e) for the control period; or

(ii) Until no more NOX allowances available under paragraph (a) of this section remain in the respective account.

(c)(1) Identification of NOX allowances by serial number. The NOX authorized account representative for each compliance account may identify by serial number the NOX allowances to be deducted from the unit’s compliance account under paragraph (b), (d), or (e) of this section. Such identification shall be made in the compliance certification report submitted in accordance with §96.30.

(2) First-in, first-out. The Administrator will deduct NOX allowances for a control period from the compliance account, in the absence of an identification or in the case of a partial identification of NOX allowances by serial number under paragraph (c)(1) of this section, or the overdraft account on a first-in, first-out (FIFO) accounting basis in the following order:

(i) Those NOX allowances that were allocated for the control period to the unit under subpart E or I of this part;

(ii) Those NOX allowances that were allocated for the control period to any unit and transferred and recorded in the account pursuant to subpart G of this part, in order of their date of recordation;

(iii) Those NOX allowances that were allocated for a prior control period to
§ 96.55 Banking.

(a) NOX allowances may be banked for future use or transfer in a compliance account, an overdraft account, or a general account, as follows:

(1) Any NOX allowance that is held in a compliance account, an overdraft account, or a general account will remain in such account unless and until the NOX allowance is deducted or transferred under §96.31, §96.54, §96.56, subpart G of this part, or subpart I of this part.

(2) The Administrator will designate, as a “banked” NOX allowance, any NOX allowance that remains in a compliance account, an overdraft account, or a general account after the Administrator has made all deductions for a given control period from the compliance account or overdraft account pursuant to §96.54.

(b) Each year starting in 2004, after the Administrator has completed the designation of banked NOX allowances under paragraph (a)(2) of this section and before May 1 of the year, the Administrator will determine the extent to which banked NOX allowances may be deducted from each such unit’s compliance account to cover the unit’s share of NOX emissions from the common stack for a control period. Such identification shall be made in the compliance certification report submitted in accordance with §96.30.

(2) Notwithstanding paragraph (b)(2)(1) of this section, the Administrator will deduct NOX allowances for each such unit until the number of NOX allowances deducted equals the unit’s identified percentage (under paragraph (e)(1) of this section) of the number of tons of NOX emissions, as determined in accordance with subpart H of this part, from the common stack for the control period for which compliance is being determined or, if no percentage is identified, an equal percentage for each such unit, plus the number of allowances required for deduction to account for actual utilization under §96.42(e) for the control period.

(f) The Administrator will record in the appropriate compliance account or overdraft account all deductions from such an account pursuant to paragraphs (b), (d), or (e) of this section.
be used for compliance in the control period for the current year, as follows:

(1) The Administrator will determine the total number of banked NO\textsubscript{X} allowances held in compliance accounts, overdraft accounts, or general accounts.

(2) If the total number of banked NO\textsubscript{X} allowances determined, under paragraph (b)(1) of this section, to be held in compliance accounts, overdraft accounts, or general accounts is less than or equal to 10\% of the sum of the State trading program budgets for the control period for the States in which NO\textsubscript{X} Budget units are located, any banked NO\textsubscript{X} allowance may be deducted for compliance in accordance with §96.54.

(3) If the total number of banked NO\textsubscript{X} allowances determined, under paragraph (b)(1) of this section, to be held in compliance accounts, overdraft accounts, or general accounts exceeds 10\% of the sum of the State trading program budgets for the control period for the States in which NO\textsubscript{X} Budget units are located, any banked allowance may be deducted for compliance in accordance with §96.54, except as follows:

(i) The Administrator will determine the following ratio: 0.10 multiplied by the sum of the State trading program budgets for the control period for the States in which NO\textsubscript{X} Budget units are located and divided by the total number of banked NO\textsubscript{X} allowances determined, under paragraph (b)(1) of this section, to be held in compliance accounts, overdraft accounts, or general accounts.

(ii) The Administrator will multiply the number of banked NO\textsubscript{X} allowances in each compliance account or overdraft account. The resulting product is the number of banked NO\textsubscript{X} allowances in the account that may be deducted for compliance in accordance with §96.54. Any banked NO\textsubscript{X} allowances in excess of the resulting product may be deducted for compliance in accordance with §96.54, except that, if such NO\textsubscript{X} allowances are used to make a deduction, two such NO\textsubscript{X} allowances must be deducted for each deduction of one NO\textsubscript{X} allowance required under §96.54.

(c) Any NO\textsubscript{X} Budget unit may reduce its NO\textsubscript{X} emission rate in the 2001 or 2002 control period, the owner or operator of the unit may request early reduction credits, and the permitting authority may allocate NO\textsubscript{X} allowances in 2003 to the unit in accordance with the following requirements.

(1) Each NO\textsubscript{X} Budget unit for which the owner or operator requests any early reduction credits under paragraph (c)(4) of this section shall monitor NO\textsubscript{X} emissions in accordance with subpart H of this part starting in the 2000 control period and for each control period for which such early reduction credits are requested. The unit’s monitoring system availability shall be not less than 90 percent during the 2000 control period, and the unit must be in compliance with any applicable State or Federal emissions or emissions-related requirements.

(2) NO\textsubscript{X} emission rate and heat input under paragraphs (c)(3) through (5) of this section shall be determined in accordance with subpart H of this part.

(3) Each NO\textsubscript{X} Budget unit for which the owner or operator requests any early reduction credits under paragraph (c)(4) of this section shall reduce its NO\textsubscript{X} emission rate, for each control period for which early reduction credits are requested, to less than both 0.25 lb/mmBtu and 80 percent of the unit’s NO\textsubscript{X} emission rate in the 2000 control period.

(4) The NO\textsubscript{X} authorized account representative of a NO\textsubscript{X} Budget unit that meets the requirements of paragraphs (c)(1) and (3) of this section may submit to the permitting authority a request for early reduction credits for the unit based on NO\textsubscript{X} emission rate reductions made by the unit in the control period for 2001 or 2002 in accordance with paragraph (c)(3) of this section.

(i) In the early reduction credit request, the NO\textsubscript{X} authorized account may request early reduction credits for such control period in an amount equal to the unit’s heat input for such control period multiplied by the difference between 0.25 lb/mmBtu and the unit’s NO\textsubscript{X} emission rate for each control period, divided by 2000 lb/ton, and rounded to the nearest ton.

(ii) The early reduction credit request must be submitted, in a format specified by the permitting authority, by October 31 of the year in which the NO\textsubscript{X} emission rate reductions on which
the request is based are made or such later date approved by the permitting authority.

(5) The permitting authority will allocate NO\textsubscript{X} allowances, to NO\textsubscript{X} Budget units meeting the requirements of paragraphs (c)(1) and (3) of this section and covered by early reduction requests meeting the requirements of paragraph (c)(4)(ii) of this section, in accordance with the following procedures:

(i) Upon receipt of each early reduction credit request, the permitting authority will accept the request only if the requirements of paragraphs (c)(1), (c)(3), and (c)(4)(ii) of this section are met and, if the request is accepted, will make any necessary adjustments to the request to ensure that the amount of the early reduction credits requested meets the requirement of paragraphs (c)(2) and (4) of this section.

(ii) If the State’s compliance supplement pool has an amount of NO\textsubscript{X} allowances not less than the number of early reduction credits in all accepted early reduction credit requests for 2001 and 2002 (as adjusted under paragraph (c)(5)(i) of this section), the permitting authority will allocate to each NO\textsubscript{X} Budget unit covered by such accepted requests one allowance for each early reduction credit requested (as adjusted under paragraph (c)(5)(i) of this section).

(iii) If the State’s compliance supplement pool has a smaller amount of NO\textsubscript{X} allowances than the number of early reduction credits in all accepted early reduction credit requests for 2001 and 2002 (as adjusted under paragraph (c)(5)(i) of this section), the permitting authority will allocate NO\textsubscript{X} allowances to each NO\textsubscript{X} Budget unit covered by such accepted requests according to the following formula:

\[
\text{Unit’s allocated early reduction credits} = \frac{\text{Unit’s adjusted early reduction credits}}{\text{Total adjusted early reduction credits requested by all units}} \times \text{Available NO\textsubscript{X} allowances from the State’s compliance supplement pool}
\]

where:

“Unit’s adjusted early reduction credits” is the number of early reduction credits for the unit for 2001 and 2002 in accepted early reduction credit requests, as adjusted under paragraph (c)(5)(i) of this section.

“Total adjusted early reduction credits requested by all units” is the number of early reduction credits for all units for 2001 and 2002 in accepted early reduction credit requests, as adjusted under paragraph (c)(5)(i) of this section.

“Available NO\textsubscript{X} allowances from the State’s compliance supplement pool” is the number of NO\textsubscript{X} allowances in the State’s compliance supplement pool and available for early reduction credits for 2001 and 2002.

(6) By May 1, 2003, the permitting authority will submit to the Administrator the allocations of NO\textsubscript{X} allowances determined under paragraph (c)(5) of this section. The Administrator will record such allocations to the extent that they are consistent with the requirements of paragraphs (c)(1) through (5) of this section.

(7) NO\textsubscript{X} allowances recorded under paragraph (c)(6) of this section may be deducted for compliance under §96.54 for the control periods in 2003 or 2004. Notwithstanding paragraph (a) of this section, the Administrator will deduct as retired any NO\textsubscript{X} allowance that is recorded under paragraph (c)(6) of this section and is not deducted for compliance in accordance with §96.54 for the control period in 2003 or 2004.

(8) NO\textsubscript{X} allowances recorded under paragraph (c)(6) of this section are treated as banked allowances in 2004 for the purposes of paragraphs (a) and (b) of this section.

§96.56 Account error.

The Administrator may, at his or her sole discretion and on his or her own motion, correct any error in any NO\textsubscript{X} Allowance Tracking System account. Within 10 business days of making such correction, the Administrator will notify the NO\textsubscript{X} authorized account representative for the account.

§96.57 Closing of general accounts.

(a) The NO\textsubscript{X} authorized account representative of a general account may instruct the Administrator to close the account by submitting a statement requesting deletion of the account from the NO\textsubscript{X} Allowance Tracking System account and by correctly submitting for recordation under §96.60 an allowance transfer of all NO\textsubscript{X} allowances in the
Subpart G—NOX Allowance Transfers

§ 96.60 Submission of NOX allowance transfers.

The NOX authorized account representatives seeking recordation of a NOX allowance transfer shall submit the transfer to the Administrator. To be considered correctly submitted, the NOX allowance transfer shall include the following elements in a format specified by the Administrator:

(a) The numbers identifying both the transferor and transferee accounts;

(b) A specification by serial number of each NOX allowance to be transferred; and

(c) The printed name and signature of the NOX authorized account representative of the transferor account and the date signed.

§ 96.61 EPA recordation.

(a) Within 5 business days of receiving a NOX allowance transfer, except as provided in paragraph (b) of this section, the Administrator will record a NOX allowance transfer by moving each NOX allowance from the transferor account to the transferee account as specified by the request, provided that:

1. The transfer is correctly submitted under §96.60;

2. The transferor account includes each NOX allowance identified by serial number in the transfer; and

3. The transfer meets all other requirements of this part.

(b) A NOX allowance transfer that is submitted for recordation following the NOX allowance transfer deadline and that includes any NOX allowances allocated for a control period prior to or the same as the control period to which the NOX allowance transfer deadline applies will not be recorded until after completion of the process of recordation of NOX allowance allocations in §96.53(b).

(c) Where a NOX allowance transfer submitted for recordation fails to meet the requirements of paragraph (a) of this section, the Administrator will not record such transfer.

§ 96.62 Notification.

(a) Notification of recordation. Within 5 business days of recordation of a NOX allowance transfer under §96.61, the Administrator will notify each party to the transfer. Notice will be given to the NOX authorized account representatives of both the transferrer and transferee accounts.

(b) Notification of non-recordation. Within 10 business days of receipt of a NOX allowance transfer that fails to meet the requirements of §96.61(a), the Administrator will notify the NOX authorized account representatives of both accounts subject to the transfer of:

1. A decision not to record the transfer, and
2. The reasons for such non-recordation.

(c) Nothing in this section shall preclude the submission of a NOX allowance transfer for recordation following notification of non-recordation.

Subpart H—Monitoring and Reporting

§ 96.70 General requirements.

The owners and operators, and to the extent applicable, the NOX authorized account representative of a NOX Budget unit, shall comply with the monitoring and reporting requirements as provided in this subpart and in subpart...
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H of part 75 of this chapter. For purposes of complying with such requirements, the definitions in §96.2 and in §72.2 of this chapter shall apply, and the terms “affected unit,” “designated representative,” and “continuous emission monitoring system” (or “CEMS”) in part 75 of this chapter shall be replaced by the terms “NOX Budget unit,” “NOx authorized account representative,” and “continuous emission monitoring system” (or “CEMS”), respectively, as defined in §96.2.

(a) Requirements for installation, certification, and data accounting. The owner or operator of each NOX Budget unit must meet the following requirements. These provisions also apply to a unit for which an application for a NOX Budget opt-in permit is submitted and not denied or withdrawn, as provided in subpart I of this part:

(1) Install all monitoring systems required under this subpart for monitoring NOX mass. This includes all systems required to monitor NOX emission rate, NOx concentration, heat input, and flow, in accordance with §§75.72 and 75.76.

(2) Install all monitoring systems for monitoring heat input, if required under §96.76 for developing NOX allowance allocations.

(3) Successfully complete all certification tests required under §96.71 and meet all other provisions of this subpart and part 75 of this chapter applicable to the monitoring systems under paragraphs (a)(1) and (2) of this section.

(4) Record, and report data from the monitoring systems under paragraphs (a)(1) and (2) of this section.

(b) Compliance dates. The owner or operator must meet the requirements of paragraphs (a)(1) through (a)(3) of this section on or before the following dates and must record and report data on and after the following dates:

(1) NOX Budget units for which the owner or operator intends to apply for early reduction credits under §96.55(d) must comply with the requirements of this subpart by May 1, 2000.

(2) Except for NOX Budget units under paragraph (b)(1) of this section, NOX Budget units under §96.4 that commence operation before January 1, 2002, must comply with the requirements of this subpart by May 1, 2002.

(3) NOX Budget units under §96.4 that commence operation on or after January 1, 2002 and that report on an annual basis under §96.74(d) must comply with the requirements of this subpart by the later of the following dates:

(i) May 1, 2002; or

(ii) The earlier of:

(A) 180 days after the date on which the unit commences operation or, (B) For units under §96.4(a)(1), 90 days after the date on which the unit commences commercial operation.

(4) NOX Budget units under §96.4 that commence operation on or after January 1, 2002 and that report on a control season basis under §96.74(d) must comply with the requirements of this subpart by the later of the following dates:

(i) The earlier of:

(A) 180 days after the date on which the unit commences operation or,

(B) For units under §96.4(a)(1), 90 days after the date on which the unit commences commercial operation.

(ii) However, if the applicable deadline under paragraph (b)(4)(i) section does not occur during a control period, May 1; immediately following the date determined in accordance with paragraph (b)(4)(i) of this section.

(5) For a NOX Budget unit with a new stack or flue for which construction is completed after the applicable deadline under paragraph (b)(1), (b)(2) or (b)(3) of this section or subpart I of this part:

(i) 90 days after the date on which emissions first exit to the atmosphere through the new stack or flue;

(ii) However, if the unit reports on a control season basis under §96.74(d) and the applicable deadline under paragraph (b)(5)(i) of this section does not occur during the control period, May 1 immediately following the applicable deadline in paragraph (b)(5)(i) of this section.

(6) For a unit for which an application for a NOX Budget opt in permit is submitted and not denied or withdrawn, the compliance dates specified under subpart I of this part.

(c) Reporting data prior to initial certification. (1) The owner or operator of a NOX Budget unit that misses the certification deadline under paragraph (b)(5)(i) of this section is not eligible to apply for early reduction credits. The owner or operator of the unit becomes
subject to the certification deadline under paragraph (b)(2) of this section.

(2) The owner or operator of a NO\textsubscript{X} Budget under paragraphs (b)(3) or (b)(4) of this section must determine, record and report NO\textsubscript{X} mass, heat input (if required for purposes of allocations) and any other values required to determine NO\textsubscript{X} Mass (e.g. NO\textsubscript{X} emission rate and heat input or NO\textsubscript{X} concentration and stack flow) using the provisions of §75.70(g) of this chapter, from the date and hour that the unit starts operating until all required certification tests are successfully completed.

(d) Prohibitions. (1) No owner or operator of a NO\textsubscript{X} Budget unit or a non-NO\textsubscript{X} Budget unit monitored under §75.72(b)(2)(ii) shall use any alternative monitoring system, alternative reference method, or any other alternative for the required continuous emission monitoring system without having obtained prior written approval in accordance with §96.75.

(2) No owner or operator of a NO\textsubscript{X} Budget unit or a non-NO\textsubscript{X} Budget unit monitored under §75.72(b)(2)(ii) shall operate the unit so as to discharge, or allow to be discharged, NO\textsubscript{X} emissions to the atmosphere without accounting for all such emissions in accordance with the applicable provisions of this subpart and part 75 of this chapter except as provided for in §75.74 of this chapter.

(3) No owner or operator of a NO\textsubscript{X} Budget unit or a non-NO\textsubscript{X} Budget unit monitored under §75.72(b)(2)(ii) shall disrupt the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording NO\textsubscript{X} mass emissions discharged into the atmosphere, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the applicable provisions of this subpart and part 75 of this chapter except as provided for in §75.74 of this chapter.

(4) No owner or operator of a NO\textsubscript{X} Budget unit or a non-NO\textsubscript{X} Budget unit monitored under §75.72(b)(2)(ii) shall retire or permanently discontinue use of the continuous emission monitoring system, any component thereof, or any other approved emission monitoring system under this subpart, except under any one of the following circumstances:

(i) During the period that the unit is covered by a retired unit exemption under §96.5 that is in effect;

(ii) The owner or operator is monitoring emissions from the unit with another certified monitoring system approved, in accordance with the applicable provisions of this subpart and part 75 of this chapter, by the permitting authority for use at that unit that provides emission data for the same pollutant or parameter as the retired or discontinued monitoring system; or

(iii) The NO\textsubscript{X} authorized account representative submits notification of the date of certification testing of a replacement monitoring system in accordance with §96.71(b)(2).

§96.71 Initial certification and recertification procedures

(a) The owner or operator of a NO\textsubscript{X} Budget unit that is subject to an Acid Rain emissions limitation shall comply with the initial certification and recertification procedures of part 75 of this chapter, except that:

1. If, prior to January 1, 1998, the Administrator approved a petition under §75.17(a) or (b) of this chapter for apportioning the NO\textsubscript{X} emission rate measured in a common stack or a petition under §75.66 of this chapter for an alternative to a requirement in §75.17 of this chapter, the NO\textsubscript{X} authorized account representative shall resubmit the petition to the Administrator under §96.75(a) to determine if the approval applies under the NO\textsubscript{X} Budget Trading Program.

2. For any additional CEMS required under the common stack provisions in §75.72 of this chapter, or for any NO\textsubscript{X} concentration CEMS used under the provisions of §75.71(a)(2) of this chapter, the owner or operator shall meet the requirements of paragraph (b) of this section.

(b) The owner or operator of a NO\textsubscript{X} Budget unit that is not subject to an Acid Rain emissions limitation shall comply with the following initial certification and recertification procedures, except that the owner or operator of a unit that qualifies to use the
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low mass emissions excepted monitoring methodology under §75.19 shall also meet the requirements of paragraph (c) of this section and the owner or operator of a unit that qualifies to use an alternative monitoring system under subpart E of part 75 of this chapter shall also meet the requirements of paragraph (d) of this section. The owner or operator of a NO\textsubscript{X} Budget unit that is subject to an Acid Rain emissions limitation, but requires additional CEMS under the common stack provisions in §75.72 of this chapter, or that uses a NO\textsubscript{X} concentration CEMS under §75.71(a)(2) of this chapter also shall comply with the following initial certification and recertification procedures.

(1) Requirements for initial certification. The owner or operator shall ensure that each monitoring system required by subpart H of part 75 of this chapter (which includes the automated data acquisition and handling system) successfully completes all of the initial certification testing required under §75.20 of this chapter. The owner or operator shall ensure that all applicable certification tests are successfully completed by the deadlines specified in §96.70(b). In addition, whenever the owner or operator installs a monitoring system in order to meet the requirements of this part in a location where no such monitoring system was previously installed, initial certification according to §75.20 is required.

(2) Requirements for recertification. Whenever the owner or operator makes a replacement, modification, or change in a certified monitoring system that the Administrator or the permitting authority determines significantly affects the ability of the system to accurately measure or record NO\textsubscript{X} mass emissions or heat input or to meet the requirements of §75.21 of this chapter or appendix B to part 75 of this chapter, the owner or operator shall recertify the continuous emissions monitoring system according to §75.20(b) of this chapter. Examples of changes which require recertification include: replacement of the analyzer, change in location or orientation of the sampling probe or site, or changing of flow rate monitor polynomial coefficients.

(3) Certification approval process for initial certifications and recertification. (i) Notification of certification. The NO\textsubscript{X} authorized account representative shall submit to the permitting authority, the appropriate EPA Regional Office and the permitting authority a written notice of the dates of certification in accordance with §96.73.

(ii) Certification application. The NO\textsubscript{X} authorized account representative shall submit to the permitting authority a certification application for each monitoring system required under subpart H of part 75 of this chapter. A complete certification application shall include the information specified in subpart H of part 75 of this chapter.

(iii) Except for units using the low mass emission excepted methodology under §75.19 of this chapter, the provisional certification date for a monitor shall be determined using the procedures set forth in §75.20(a)(3) of this chapter. A provisionally certified monitor may be used under the NO\textsubscript{X} Budget Trading Program for a period not to exceed 120 days after receipt by the permitting authority of the complete certification application for the monitoring system or component thereof under paragraph (b)(3)(ii) of this section. Data measured and recorded by the provisionally certified monitoring system or component thereof, in accordance with the requirements of part 75 of this chapter, will be considered valid quality-assured data (retroactive to the date and time of provisional certification), provided that the permitting authority does not invalidate the provisional certification by issuing a notice of disapproval within 120 days of receipt of the complete certification application by the permitting authority.
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(iv) Certification application formal approval process. The permitting authority will issue a written notice of approval or disapproval of the certification application to the owner or operator within 120 days of receipt of the complete certification application under paragraph (b)(3)(ii) of this section. In the event the permitting authority does not issue such a notice within such 120-day period, each monitoring system which meets the applicable performance requirements of part 75 of this chapter and is included in the certification application will be deemed certified for use under the NOx Budget Trading Program.

(A) Approval notice. If the certification application is complete and shows that each monitoring system meets the applicable performance requirements of part 75 of this chapter, then the permitting authority will issue a written notice of approval of the certification application within 120 days of receipt.

(B) Incomplete application notice. A certification application will be considered complete when all of the applicable information required to be submitted under paragraph (b)(3)(ii) of this section has been received by the permitting authority. If the certification application is not complete, then the permitting authority will issue a written notice of incompleteness that sets a reasonable date by which the NOx authorized account representative must submit the additional information required to complete the certification application. If the NOx authorized account representative does not comply with the notice of incompleteness by the specified date, then the permitting authority may issue a notice of disapproval under paragraph (b)(3)(iv)(C) of this section.

(C) Disapproval notice. If the certification application shows that any monitoring system or component thereof does not meet the performance requirements of this part, or if the certification application is incomplete and the requirement for disapproval under paragraph (b)(3)(iv)(B) of this section has been met, the permitting authority will issue a written notice of disapproval of the certification application. Upon issuance of such notice of disapproval, the provisional certification is invalidated by the permitting authority and the data measured and recorded by each uncertified monitoring system or component thereof shall not be considered valid quality-assured data beginning with the date and hour of provisional certification. The owner or operator shall follow the procedures for loss of certification in paragraph (b)(3)(v) of this section for each monitoring system or component thereof which is disapproved for initial certification.

(D) Audit decertification. The permitting authority may issue a notice of disapproval of the certification status of a monitor in accordance with §96.72(b).

(v) Procedures for loss of certification. If the permitting authority issues a notice of disapproval of a certification application under paragraph (b)(3)(iv)(C) of this section or a notice of disapproval of certification status under paragraph (b)(3)(iv)(D) of this section, then:

(A) The owner or operator shall substitute the following values, for each hour of unit operation during the period of invalid data beginning with the date and hour of provisional certification and continuing until the time, date, and hour specified under §75.20(a)(5)(i) of this chapter:

(i) For units using or intending to monitor for NOx emission rate and heat input or for units using the low mass emission excepted methodology under §75.19 of this chapter, the maximum potential NOx emission rate and the maximum potential hourly heat input of the unit.

(ii) For units intending to monitor for NOx mass emissions using a NOx pollutant concentration monitor and a flow monitor, the maximum potential concentration of NOx and the maximum potential flow rate of the unit under section 2.1 of appendix A of part 75 of this chapter;

(B) The NOx authorized account representative shall submit a notification of certification retest dates and a new certification application in accordance with paragraphs (b)(3)(i) and (ii) of this section; and
§ 96.72 Out of control periods.

(a) Whenever any monitoring system fails to meet the quality assurance requirements of appendix B of part 75 of this chapter, the owner or operator of the unit shall notify the permitting authority and submit a certification application for approval to use the low mass emissions excepted methodology under § 75.19 of this chapter until the completion of the period for the permitting authority's review.

(b) For units that commenced operation after its compliance deadline under § 96.71(b), the owner or operator of the unit shall comply with the notification and application requirements for certification according to the procedures specified in paragraph (b)(3) of this section and § 75.20(f) of this chapter.
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this chapter, data shall be substituted using the applicable procedures in sub-
part D, appendix D, or appendix E of part 75 of this chapter.

(b) Audit decertification. Whenever both an audit of a monitoring system and a review of the initial certification or recertification application reveal that any system or component should not have been certified or recertified because it did not meet a particular performance specification or other requirement under §96.71 or the applicable provisions of part 75 of this chapter, both at the time of the initial certification or recertification application submission and at the time of the audit, the permitting authority will issue a notice of disapproval of the certification status of such system or component. For the purposes of this paragraph, an audit shall be either a field audit or an audit of any information submitted to the permitting authority or the Administrator. By issuing the notice of disapproval, the permitting authority revokes prospectively the certification status of the system or component. The data measured and recorded by the system or component shall not be considered valid quality-assured data from the date of issuance of the notification of the revoked certification status until the date and time that the owner or operator completes subsequently approved initial certification or recertification tests. The owner or operator shall follow the initial certification or recertification procedures in §96.71 for each disapproved system.

§ 96.73 Notifications.

The NOX authorized account representative for a NOX Budget unit shall submit written notice to the permitting authority and the Administrator in accordance with §75.61 of this chapter, except that if the unit is not subject to an Acid Rain emissions limitation, the notification is only required to be sent to the permitting authority.

§ 96.74 Recordkeeping and reporting.

(a) General provisions. (1) The NOX authorized account representative shall comply with all recordkeeping and reporting requirements in this section and with the requirements of §96.10(e).

(2) If the NOX authorized account representative for a NOX Budget unit subject to an Acid Rain Emission limitation who signed and certified any submission that is made under subpart F or G of part 75 of this chapter and which includes data and information required under this subpart or subpart H of part 75 of this chapter is not the same person as the designated representative or the alternative designated representative for the unit under part 72 of this chapter, the submission must also be signed by the designated representative or the alternative designated representative.

(b) Monitoring plans. (1) The owner or operator of a unit subject to an Acid Rain Emissions limitation shall comply with requirements of §75.62 of this chapter, except that the monitoring plan shall also include all of the information required by subpart H of part 75 of this chapter.

(2) The owner or operator of a unit that is not subject to an Acid Rain emissions limitation shall comply with requirements of §75.62 of this chapter, except that the monitoring plan is only required to include the information required by subpart H of part 75 of this chapter.

(c) Certification applications. The NOX authorized account representative shall submit an application to the permitting authority within 45 days after completing all initial certification or recertification tests required under §96.71 including the information required under subpart H of part 75 of this chapter.

(d) Quarterly reports. The NOX authorized account representative shall submit quarterly reports, as follows:

(1) If a unit is subject to an Acid Rain emission limitation or if the owner or operator of the NOX budget unit chooses to meet the annual reporting requirements of this subpart H, the NOX authorized account representative shall submit a quarterly report for each calendar quarter beginning with:

(i) For units that elect to comply with the early reduction credit provisions under §96.55 of this part, the calendar quarter that includes the date of initial provisional certification under §96.71(b)(3)(iii). Data shall be reported from the date and hour corresponding.
to the date and hour of provisional certification; or

(ii) For units commencing operation prior to May 1, 2002 that are not required to certify monitors by May 1, 2000 under §96.70(b)(1), the earlier of the calender quarter that includes the date of initial provisional certification under §96.71(b)(3)(iii) or, if the certification tests are not completed by May 1, 2002, the partial calender quarter from May 1, 2002 through June 30, 2002. Data shall be reported from the earlier of the date and hour corresponding to the date and hour of provisional certification or the first hour on May 1, 2002; or

(iii) For a unit that commences operation after May 1, 2002, the calendar quarter in which the unit commences operation. Data shall be reported from the date and hour corresponding to when the unit commenced operation.

(2) If a NO\textsubscript{X} budget unit is not subject to an Acid Rain emission limitation, then the NO\textsubscript{X} authorized account representative shall either:

(i) Meet all of the requirements of part 75 related to monitoring and reporting NO\textsubscript{X} mass emissions during the entire year and meet the reporting deadlines specified in paragraph (d)(1) of this section; or

(ii) Submit quarterly reports only for the periods from the earlier of May 1 or the date and hour that the owner or operator successfully completes all of the recertification tests required under §75.74(d)(3) through September 30 of each year in accordance with the provisions of §75.74(b) of this chapter. The NO\textsubscript{X} authorized account representative shall submit a quarterly report for each calendar quarter, beginning with:

(A) For units that elect to comply with the early reduction credit provisions under §96.55, the calender quarter that includes the date of initial provisional certification under §96.71(b)(3)(iii). Data shall be reported from the date and hour of provisional certification; or

(B) For units commencing operation prior to May 1, 2002 that are not required to certify monitors by May 1, 2000 under §96.70(b)(1), the earlier of the calender quarter that includes the date of initial provisional certification under §96.71(b)(3)(iii), or if the certification tests are not completed by May 1, 2002, the partial calender quarter from May 1, 2002 through June 30, 2002. Data shall be reported from the earlier of the date and hour corresponding to the date and hour of provisional certification or the first hour of May 1, 2002; or

(C) For units that commence operation after May 1, 2002 during the control period, the calendar quarter in which the unit commences operation. Data shall be reported from the date and hour corresponding to when the unit commenced operation; or

(D) For units that commence operation after May 1, 2002 and before May 1 of the year in which the unit commences operation, the earlier of the calender quarter that includes the date of initial provisional certification under §96.71(b)(3)(iii) or, if the certification tests are not completed by May 1 of the year in which the unit commences operation, May 1 of the year in which the unit commences operation. Data shall be reported from the earlier of the date and hour corresponding to the date and hour of provisional certification or the first hour of May 1 of the year after the unit commences operation.

(E) For units that commence operation after May 1, 2002 and after September 30 of the year in which the unit commences operation, the earlier of the calendar quarter that includes the date of initial provisional certification under §96.71(b)(3)(iii) or, if the certification tests are not completed by May 1 of the year after the unit commences operation, May 1 of the year after the unit commences operation. Data shall be reported from the earlier of the date and hour corresponding to the date and hour of provisional certification or the first hour of May 1 of the year after the unit commences operation.

(3) The NO\textsubscript{X} authorized account representative shall submit each quarterly report to the Administrator within 30 days following the end of the calendar quarter covered by the report. Quarterly reports shall be submitted in the manner specified in subpart H of part 75 of this chapter and §75.64 of this chapter.
(i) For units subject to an Acid Rain Emissions limitation, quarterly reports shall include all of the data and information required in subpart H of part 75 of this chapter for each NO\textsubscript{X} Budget unit (or group of units using a common stack) as well as information required in subpart G of part 75 of this chapter.

(ii) For units not subject to an Acid Rain Emissions limitation, quarterly reports are only required to include all of the data and information required in subpart H of part 75 of this chapter for each NO\textsubscript{X} Budget unit (or group of units using a common stack).

(4) **Compliance certification.** The NO\textsubscript{X} authorized account representative shall submit to the Administrator a compliance certification in support of each quarterly report based on reasonable inquiry of those persons with primary responsibility for ensuring that all of the unit’s emissions are correctly and fully monitored. The certification shall state that:

(i) The monitoring data submitted were recorded in accordance with the applicable requirements of this subpart and part 75 of this chapter, including the quality assurance procedures and specifications; and

(ii) For a unit with add-on NO\textsubscript{X} emission controls and for all hours where data are substituted in accordance with §75.34(a)(1) of this chapter, the add-on emission controls were operating within the range of parameters listed in the monitoring plan and the substitute values do not systematically underestimate NO\textsubscript{X} emissions; and

(iii) For a unit that is reporting on a control period basis under §96.74(d) the NO\textsubscript{X} emission rate and NO\textsubscript{X} concentration values substituted for missing data under subpart D of part 75 of this chapter are calculated using only values from a control period and do not systematically underestimate NO\textsubscript{X} emissions.

§ 96.75 **Petitions.**

(a) The NO\textsubscript{X} authorized account representative of a NO\textsubscript{X} Budget unit that is subject to an Acid Rain emissions limitation may submit a petition under §75.66 of this chapter to the Administrator requesting approval to apply an alternative to any requirement of this subpart.

(1) Application of an alternative to any requirement of this subpart is in accordance with this subpart only to the extent that the petition is approved by the Administrator, in consultation with the permitting authority.

(2) Notwithstanding paragraph (a)(1) of this section, if the petition requests approval to apply an alternative to a requirement concerning any additional CEMS required under the common stack provisions of §75.72 of this chapter, the petition is governed by paragraph (b) of this section.

(b) The NO\textsubscript{X} authorized account representative of a NO\textsubscript{X} Budget unit that is not subject to an Acid Rain emissions limitation may submit a petition under §75.66 of this chapter to the permitting authority and the Administrator requesting approval to apply an alternative to any requirement of this subpart.

(1) The NO\textsubscript{X} authorized account representative of a NO\textsubscript{X} Budget unit that is subject to an Acid Rain emissions limitation may submit a petition under §75.66 of this chapter to the permitting authority and the Administrator requesting approval to apply an alternative to a requirement concerning any additional CEMS required under the common stack provisions of §75.72 of this chapter or a NO\textsubscript{X} concentration CEMS used under §75.71(a)(2) of this chapter.

(2) Application of an alternative to any requirement of this subpart is in accordance with this subpart only to the extent the petition under paragraph (b) of this section is approved by both the permitting authority and the Administrator.

§ 96.76 **Additional requirements to provide heat input data for allocations purposes.**

(a) The owner or operator of a unit that elects to monitor and report NO\textsubscript{X} Mass emissions using a NO\textsubscript{X} concentration system and a flow system shall also monitor and report heat input at the unit level using the procedures set forth in part 75 of this chapter for any source located in a state developing source allocations based upon heat input.
§ 96.80 Applicability.

A unit that is in the State, is not a NOX Budget unit under § 96.4, vents all of its emissions to a stack, and is operating, may qualify, under this subpart, to become a NOX Budget opt-in source. A unit that is a NOX Budget unit, is covered by a retired unit exemption under § 96.5 that is in effect, or is not operating is not eligible to become a NOX Budget opt-in source.

§ 96.81 General.

Except otherwise as provided in this part, a NOX Budget opt-in source shall be treated as a NOX Budget unit for purposes of applying subparts A through H of this part.

§ 96.82 NOX authorized account representative.

A unit for which an application for a NOX Budget opt-in permit is submitted and not denied or withdrawn, or a NOX Budget opt-in source, located at the same source as one or more NOX Budget units, shall have the same NOX authorized account representative as such NOX Budget units.

§ 96.83 Applying for NOX Budget opt-in permit.

(a) Applying for initial NOX Budget opt-in permit. In order to apply for an initial NOX Budget opt-in permit, the NOX authorized account representative of a unit qualified under § 96.80 may submit to the permitting authority at any time, except as provided under § 96.86(g):

(1) A complete NOX Budget permit application under § 96.22;

(2) A monitoring plan submitted in accordance with subpart H of this part; and

(3) A complete account certificate of representation under § 96.13, if no NOX authorized account representative has been previously designated for the unit.

(b) Duty to reapply. The NOX authorized account representative of a NOX Budget opt-in source shall submit a complete NOX Budget permit application under § 96.22 to renew the NOX Budget opt-in permit in accordance with § 96.21(c) and, if applicable, an updated monitoring plan in accordance with subpart H of this part.

§ 96.84 Opt-in process.

The permitting authority will issue or deny a NOX Budget opt-in permit for a unit for which an initial application for a NOX Budget opt-in permit under § 96.83 is submitted, in accordance with § 96.20 and the following:

(a) Interim review of monitoring plan. The permitting authority will determine, on an interim basis, the sufficiency of the monitoring plan accompanying the initial application for a NOX Budget opt-in permit under § 96.83. A monitoring plan is sufficient, for purposes of interim review, if the plan appears to contain information demonstrating that the NOX emissions rate and heat input of the unit are monitored and reported in accordance with subpart H of this part. A determination of sufficiency shall not be construed as acceptance or approval of the unit’s monitoring plan.

(b) If the permitting authority determines that the unit’s monitoring plan is sufficient under paragraph (a) of this section and after completion of monitoring system certification under subpart H of this part, the NOX emissions rate and the heat input of the unit shall be monitored and reported in accordance with subpart H of this part for one full control period during which monitoring system availability is not less than 90 percent and during which the unit is in full compliance with any applicable State or Federal emissions or emissions-related requirements. Solely for purposes of applying the requirements in the prior sentence, the unit shall be treated as a “NOX Budget unit” prior to issuance of a NOX Budget opt-in permit covering the unit.

(c) Based on the information monitored and reported under paragraph (b) of this section, the unit’s baseline heat
rate shall be calculated as the unit’s total heat input (in mmBtu) for the control period and the unit’s baseline NOX emissions rate shall be calculated as the unit’s total NOX emissions (in lb) for the control period divided by the unit’s baseline heat rate.

(d) After calculating the baseline heat input and the baseline NOX emissions rate for the unit under paragraph (c) of this section, the permitting authority will serve a draft NOX Budget opt-in permit on the NOX authorized account representative of the unit.

(e) Confirmation of intention to opt-in. Within 20 days after the issuance of the draft NOX Budget opt-in permit, the NOX authorized account representative of the unit must submit to the permitting authority a confirmation of the intention to opt in the unit under paragraph (e) of this section, the permitting authority will serve a draft NOX Budget opt-in permit under §96.83. The permitting authority will treat the failure to make a timely submission as a withdrawal of the NOX Budget opt-in permit application.

(f) Issuance of draft NOX Budget opt-in permit. If the NOX authorized account representative confirms the intention to opt-in the unit under paragraph (e) of this section, the permitting authority will issue the draft NOX Budget opt-in permit in accordance with §96.20.

(g) Notwithstanding paragraphs (a) through (f) of this section, if at any time before issuance of a draft NOX Budget opt-in permit for the unit, the permitting authority determines that the unit does not qualify as a NOX Budget opt-in source under §96.80, the NOX authorized account representative shall submit to the permitting authority a draft denial of a NOX Budget opt-in permit for the unit in accordance with §96.20.

(h) Withdrawal of application for NOX Budget opt-in permit. A NOX authorized account representative of a unit may withdraw its application for a NOX Budget opt-in permit under §96.83 at any time prior to the issuance of the final NOX Budget opt-in permit. Once the application for a NOX Budget opt-in permit is withdrawn, a NOX authorized account representative wanting to reapply must submit a new application for a NOX Budget permit under §96.83.

(i) Effective date. The effective date of the initial NOX Budget opt-in permit shall be May 1 of the first control period starting after the issuance of the initial NOX Budget opt-in permit by the permitting authority. The unit shall be a NOX Budget opt-in source and a NOX Budget unit as of the effective date of the initial NOX Budget opt-in permit.

§96.85 NOX Budget opt-in permit contents.

(a) Each NOX Budget opt-in permit (including any draft or proposed NOX Budget opt-in permit, if applicable) will contain all elements required for a complete NOX Budget opt-in permit application under §96.22 as approved or adjusted by the permitting authority.

(b) Each NOX Budget opt-in permit is deemed to incorporate automatically the definitions of terms under §96.2 and, upon recordation by the Administrator under subpart F, G, or I of this part, every allocation, transfer, or deduction of NOX allowances to or from the compliance accounts of each NOX Budget opt-in source covered by the NOX Budget opt-in permit or the over-draft account of the NOX Budget source where the NOX Budget opt-in source is located.

§96.86 Withdrawal from NOX Budget Trading Program.

(a) Requesting withdrawal. To withdraw from the NOX Budget Trading Program, the NOX authorized account representative of a NOX Budget opt-in source shall submit to the permitting authority a request to withdraw effective as of a specified date prior to May 1 or after September 30. The submission shall be made no later than 90 days prior to the requested effective date of withdrawal.

(b) Conditions for withdrawal. Before a NOX Budget opt-in source covered by a request under paragraph (a) of this section may withdraw from the NOX Budget Trading Program and the NOX Budget opt-in permit may be terminated under paragraph (e) of this section, the following conditions must be met:

(1) For the control period immediately before the withdrawal is to be effective, the NOX authorized account representative must submit or must have submitted to the permitting authority an annual compliance certification report in accordance with §96.30.
§ 96.87  Change in regulatory status.

(a) Notification. When a NOX Budget opt-in source becomes a NOX Budget unit under §96.4, the NOX Budget opt-in source of the NOX Budget unit shall become the NOX Budget opt-in source of the acceptance of the withdrawal of the NOX Budget opt-in source as of the specified effective date that is after such requirements have been met and that is prior to May 1 or after September 30.

(2) If the NOX Budget opt-in source has excess emissions for the control period immediately before the withdrawal is to be effective, the Administrator will deduct or has deducted from the NOX Budget opt-in source’s compliance account, or the overdraft account of the NOX Budget opt-in source where the NOX Budget opt-in source is located, the full amount required under §96.54(d) for the control period.

(3) After the requirements for withdrawal under paragraphs (a) and (b) of this section are met, the Administrator will deduct from the NOX Budget opt-in source’s compliance account, or the overdraft account of the NOX Budget opt-in source where the NOX Budget opt-in source is located, NOX allowances equal in number to and allocated for the same or a prior control period as any NOX allowances allocated to that source under §96.88 for any control period for which the withdrawal is to be effective. The Administrator will close the NOX Budget opt-in source’s compliance account and will establish, and transfer any remaining allowances to, a new general account for the owners and operators of the NOX Budget opt-in source. The NOX authorized account representative for the NOX Budget opt-in source shall become the NOX authorized account representative for the general account.

(c) A NOX Budget opt-in source that withdraws from the NOX Budget Trading Program shall comply with all requirements under the NOX Budget Trading Program concerning all years for which such NOX Budget opt-in source was a NOX Budget opt-in source, even if such requirements arise or must be complied with after the withdrawal takes effect.

(d) Notification. (1) After the requirements for withdrawal under paragraphs (a) and (b) of this section are met (including deduction of the full amount of NOX allowances required), the permitting authority will issue a notification to the NOX authorized account representative of the NOX Budget opt-in source of the acceptance of the withdrawal of the NOX Budget opt-in source as of a specified effective date that is after such requirements have been met and that is prior to May 1 or after September 30.

(2) If the requirements for withdrawal under paragraphs (a) and (b) of this section are not met, the permitting authority will issue a notification to the NOX authorized account representative of the NOX Budget opt-in source that the NOX Budget opt-in source’s request to withdraw is denied. If the NOX Budget opt-in source’s request to withdraw is denied, the NOX Budget opt-in source shall remain subject to the requirements for a NOX Budget opt-in source.
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(b) Permitting authority’s and Administrator’s action. (1)(i) When the NOX Budget opt-in source becomes a NOX Budget unit under §96.4, the permitting authority will revise the NOX Budget opt-in source’s NOX Budget opt-in permit to meet the requirements of a NOX Budget permit under §96.22 as of an effective date that is the date on which such NOX Budget opt-in source becomes a NOX Budget unit under §96.4.

(ii)(A) The Administrator will deduct from the compliance account for the NOX Budget unit under paragraph (b)(1)(i) of this section, or the overdraft account of the NOX Budget source where the unit is located, NOX allowances equal in number to and allocated for the same or a prior control period as:

(I) Any NOX allowances allocated to the NOX Budget unit under paragraph (b)(1)(i) of this section, or the overdraft account of the NOX Budget source where the unit is located, NOX allowances equal in number to and allocated for the same or a prior control period as:

(1) Any NOX allowances allocated to the NOX Budget unit (as a NOX Budget opt-in source) under §96.88 for any control period after the last control period during which the unit’s NOX Budget opt-in permit was effective; and

(2) If the effective date of the NOX Budget permit revision under paragraph (b)(1)(i) of this section is during a control period, the NOX allowances allocated to the NOX Budget unit (as a NOX Budget opt-in source) under §96.88 for the control period multiplied by the ratio of the number of days, in the control period, starting with the effective date of the permit revision under paragraph (b)(1)(i) of this section, divided by the total number of days in the control period.

(B) The NOX authorized account representative shall ensure that the compliance account of the NOX Budget unit under paragraph (b)(1)(i) of this section, or the overdraft account of the NOX Budget source where the unit is located, includes the NOX allowances necessary for completion of the deduction under paragraph (b)(1)(i)(A) of this section. If the compliance account or overdraft account does not contain sufficient NOX allowances, the Administrator will deduct the required number of NOX allowances, regardless of the control period for which they were allocated, whenever NOX allowances are recorded in either account.

(ii)(A) For every control period during which the NOX Budget permit revised under paragraph (b)(1)(i) of this section is effective, the NOX Budget unit under paragraph (b)(1)(i) of this section will be treated, solely for purposes of NOX allowance allocations under §96.42, as a unit that commenced operation on the effective date of the NOX Budget permit revision under paragraph (b)(1)(i) of this section and will be allocated NOX allowances under §96.42.

(B) Notwithstanding paragraph (b)(1)(ii)(A) of this section, if the effective date of the NOX Budget permit revision under paragraph (b)(1)(i) of this section is during a control period, the following number of NOX allowances will be allocated to the NOX Budget unit under paragraph (b)(1)(i) of this section under §96.42 for the control period: the number of NOX allowances otherwise allocated to the NOX Budget unit under §96.42 for the control period multiplied by the ratio of the number of days, in the control period, starting with the effective date of the permit revision under paragraph (b)(1)(i) of this section, divided by the total number of days in the control period.

(2)(i) When the NOX authorized account representative of a NOX Budget opt-in source does not renew its NOX Budget opt-in permit under §96.83(b), the Administrator will deduct from the NOX Budget opt-in source’s compliance account, or the overdraft account of the NOX Budget source where the NOX Budget opt-in source is located, NOX allowances equal in number to and allocated for the same or a prior control period as any NOX allowances allocated to the NOX Budget opt-in source under §96.88 for any control period after the last control period for which the NOX Budget opt-in permit is effective. The NOX authorized account representative shall ensure that the NOX Budget opt-in source’s compliance account or the overdraft account of the NOX Budget source where the NOX Budget opt-in source is located includes the NOX allowances necessary for completion of such deduction. If the compliance account or overdraft account does not contain sufficient NOX allowances, the Administrator will deduct the required number of NOX allowances, regardless of the control period for which they were allocated, whenever NOX allowances are recorded in either account.
(ii) After the deduction under paragraph (b)(2)(i) of this section is completed, the Administrator will close the NO\textsubscript{X} Budget opt-in source’s compliance account. If any NO\textsubscript{X} allowances remain in the compliance account after completion of such deduction and any deduction under §96.54, the Administrator will close the NO\textsubscript{X} Budget opt-in source’s compliance account and will establish, and transfer any remaining allowances to, a new general account for the owners and operators of the NO\textsubscript{X} Budget opt-in source. The NO\textsubscript{X} authorized account representative for the NO\textsubscript{X} Budget opt-in source shall become the NO\textsubscript{X} authorized account representative for the general account.

§ 96.88 NO\textsubscript{X} allowance allocations to opt-in units.

(a) NO\textsubscript{X} allowance allocation. (1) By December 31 immediately before the first control period for which the NO\textsubscript{X} Budget opt-in permit is effective, the permitting authority will allocate NO\textsubscript{X} allowances to the NO\textsubscript{X} Budget opt-in source and submit to the Administrator the allocation for the control period in accordance with paragraph (b) of this section.

(2) By no later than December 31, after the first control period for which the NO\textsubscript{X} Budget opt-in permit is in effect, and December 31 of each year thereafter, the permitting authority will allocate NO\textsubscript{X} allowances to the NO\textsubscript{X} Budget opt-in source and submit to the Administrator allocations for the next control period, in accordance with paragraph (b) of this section.

(b) For each control period for which the NO\textsubscript{X} Budget opt-in source has an approved NO\textsubscript{X} Budget opt-in permit, the NO\textsubscript{X} Budget opt-in source will be allocated NO\textsubscript{X} allowances in accordance with the following procedures:

(1) The heat input (in mmBtu) used for calculating NO\textsubscript{X} allowance allocations will be the lesser of:

(i) The NO\textsubscript{X} Budget opt-in source’s baseline heat input determined pursuant to §96.84(c); or

(ii) The NO\textsubscript{X} Budget opt-in source’s heat input, as determined in accordance with subpart H of this part, for the control period in the year prior to the year of the control period for which the NO\textsubscript{X} allocations are being calculated.

(2) The permitting authority will allocate NO\textsubscript{X} allowances to the NO\textsubscript{X} Budget opt-in source in an amount equaling the heat input (in mmBtu) determined under paragraph (b)(1) of this section multiplied by the lesser of:

(i) The NO\textsubscript{X} Budget opt-in source’s baseline NO\textsubscript{X} emissions rate (in lb/mmBtu) determined pursuant to §96.84(c); or

(ii) The most stringent State or Federal NO\textsubscript{X} emissions limitation applicable to the NO\textsubscript{X} Budget opt-in source during the control period.

Subpart J—Mobile and Area Sources [Reserved]

Subparts K—Z [Reserved]

Subpart AA—CAIR NO\textsubscript{X} Annual Trading Program General Provisions

SOURCE: 70 FR 25339, May 12, 2005, unless otherwise noted.

§ 96.101 Purpose.

This subpart and subparts BB through II establish the model rule comprising general provisions and the designated representative, permitting, allowance, monitoring, and opt-in provisions for the State Clean Air Interstate Rule (CAIR) NO\textsubscript{X} Annual Trading Program, under section 110 of the Clean Air Act and §51.123 of this chapter, as a means of mitigating interstate transport of fine particulates and nitrogen oxides. The owner or operator of a unit or a source shall comply with the requirements of this subpart and subparts BB through II as a matter of federal law only if the State with jurisdiction over the unit and the source incorporates by reference such subparts or otherwise adopts the requirements of such subparts in accordance with §§51.123(o)(1) or (2) of this chapter, the State submits to the Administrator one or more revisions of the State implementation plan that include such adoption, and the Administrator approves such revisions. If the State adopts the requirements of such subparts in accordance with §§51.123(o)(1) or
(2) of this chapter, then the State authorizes the Administrator to assist the State in implementing the CAIR NO\textsubscript{X} Annual Trading Program by carrying out the functions set forth for the Administrator in such subparts.

§ 96.102 Definitions.

The terms used in this subpart and subparts BB through II shall have the meanings set forth in this section as follows:

- **Account number** means the identification number given by the Administrator to each CAIR NO\textsubscript{X} Allowance Tracking System account.

- **Acid Rain emissions limitation** means a limitation on emissions of sulfur dioxide or nitrogen oxides under the Acid Rain Program.

- **Acid Rain Program** means a multi-state sulfur dioxide and nitrogen oxides air pollution control and emission reduction program established by the Administrator under title IV of the CAA and parts 72 through 78 of this chapter.

- **Administrator** means the Administrator of the United States Environmental Protection Agency or the Administrator’s duly authorized representative.

- **Allocate** or **allocation** means, with regard to CAIR NO\textsubscript{X} allowances, the determination by a permitting authority or the Administrator of the amount of such CAIR NO\textsubscript{X} allowances to be initially credited to a CAIR NO\textsubscript{X} unit, a new unit set-aside, or other entity.

- **Allowance transfer deadline** means, for a control period, midnight of March 1 (if it is a business day), or midnight of the first business day thereafter (if March 1 is not a business day), immediately following the control period and is the deadline by which a CAIR NO\textsubscript{X} allowance transfer must be submitted for recordation in a CAIR NO\textsubscript{X} source’s compliance account in order to be used to meet the source’s CAIR NO\textsubscript{X} emissions limitation for such control period in accordance with §96.154.

- **Alternate CAIR designated representative** means, for a CAIR NO\textsubscript{X} source and each CAIR NO\textsubscript{X} unit at the source, the natural person who is authorized by the owners and operators of the source and all such units at the source, in accordance with subparts BB and II of this part, to act on behalf of the CAIR designated representative in matters pertaining to the CAIR NO\textsubscript{X} Annual Trading Program. If the CAIR NO\textsubscript{X} source is also a CAIR SO\textsubscript{2} source, then this natural person shall be the same person as the alternate CAIR designated representative under the CAIR SO\textsubscript{2} Trading Program. If the CAIR NO\textsubscript{X} source is also a CAIR NO\textsubscript{X} Ozone Season source, then this natural person shall be the same person as the alternate CAIR designated representative under the Acid Rain Program. If the CAIR NO\textsubscript{X} source is also subject to the Acid Rain Program, then this natural person shall be the same person as the alternate designated representative under the Acid Rain Program. If the CAIR NO\textsubscript{X} source is also subject to the Hg Budget Trading Program, then this natural person shall be the same person as the alternate Hg designated representative under the Hg Budget Trading Program.

- **Automated data acquisition and handling system** or **DAHS** means that component of the continuous emission monitoring system, or other emissions monitoring system approved for use under subpart HH of this part, designed to interpret and convert individual output signals from pollutant concentration monitors, flow monitors, diluent gas monitors, and other component parts of the monitoring system to produce a continuous record of the measured parameters in the measurement units required by subpart HH of this part.

- **Biomass** means—
  1. Any organic material grown for the purpose of being converted to energy;
  2. Any organic byproduct of agriculture that can be converted into energy; or
  3. Any material that can be converted into energy and is nonmerchantable for other purposes, that is segregated from other nonmerchantable material, and that is:
     1. A forest-related organic resource, including mill residues, precommercial thinnings, slash, brush, or byproduct from conversion of trees to merchantable material; or
     2. A wood material, including pallets, crates, dunnage, manufacturing...
CAIR NO\textsubscript{X} allowance means a limited authorization issued by a permitting authority or the Administrator under provisions of a State implementation plan that are approved under §51.123(o)(1) or (2) or (p) of this chapter, or under subpart EE of part 97 or §97.188 of this chapter, to emit one ton of nitrogen oxides during a control period of the specified calendar year for which the authorization is allocated or of any calendar year thereafter under the CAIR NO\textsubscript{X} Program. An authorization to emit nitrogen oxides that is not issued under provisions of a State implementation plan that are approved under §51.123(o)(1) or (2) or (p) of this chapter or subpart EE of part 97 or §97.188 of this chapter shall not be a CAIR NO\textsubscript{X} allowance.

CAIR NO\textsubscript{X} allowance deduction or deduct CAIR NO\textsubscript{X} allowances means the permanent withdrawal of CAIR NO\textsubscript{X} allowances by the Administrator from a compliance account, e.g., in order to account for a specified number of tons of total nitrogen oxides emissions from all CAIR NO\textsubscript{X} units at a CAIR NO\textsubscript{X} source for a control period, determined in accordance with subpart HH of this part, or to account for excess emissions.

CAIR NO\textsubscript{X} Allowance Tracking System means the system by which the Administrator records allocations, deductions, and transfers of CAIR NO\textsubscript{X} allowances under the CAIR NO\textsubscript{X} Annual Trading Program. Such allowances will be allocated, held, deducted, or transferred only as whole allowances.

CAIR NO\textsubscript{X} Allowance Tracking System account means an account in the CAIR NO\textsubscript{X} Allowance Tracking System established by the Administrator for purposes of recording the allocation, holding, transferring, or deducting of CAIR NO\textsubscript{X} allowances.

CAIR NO\textsubscript{X} allowances held or hold CAIR NO\textsubscript{X} allowances means the CAIR NO\textsubscript{X} allowances recorded by the Administrator, or submitted to the Administrator for recordation, in accordance with subparts FF, GG, and II of this part, in a CAIR NO\textsubscript{X} Allowance Tracking System account.

CAIR NO\textsubscript{X} Annual Trading Program means a multi-state nitrogen oxides air...
pollution control and emission reduction program approved and administered by the Administrator in accordance with subparts AA through II of this part and §51.123(o)(1) or (2) of this chapter or established by the Administrator in accordance with subparts AA through III of this chapter and §§51.123(p) and 52.35 of this chapter, as a means of mitigating interstate transport of fine particulates and nitrogen oxides.

CAIR NOX emissions limitation means, for a CAIR NOX source, the tonnage equivalent of NOX emissions in a control period, of the CAIR NOX allowances available for deduction for the source under §96.154(a) and (b) for the control period.

CAIR NOX Ozone Season source means a source that is subject to the CAIR NOX Ozone Season Trading Program.

CAIR NOX Ozone Season Trading Program means a multi-state nitrogen oxides air pollution control and emission reduction program approved and administered by the Administrator in accordance with subparts AAAA through IIII of this part and § 51.123(aa)(1) or (2) (and (bb)(1), (bb)(2), or (dd)) of this chapter or established by the Administrator in accordance with subparts AAAA through IIII of part 97 of this chapter and §§ 51.123(ee) and 52.35 of this chapter, as a means of mitigating interstate transport of ozone and nitrogen oxides.

CAIR NOX source means a source that includes one or more CAIR NOX units.

CAIR NOX unit means a unit that is subject to the CAIR NOX Annual Trading Program under §96.104 and, except for purposes of §96.105 and subpart EE of this part, a CAIR NOX opt-in unit under subpart II of this part.

CAIR permit means the legally binding and federally enforceable written document, or portion of such document, issued by the permitting authority under subpart CC of this part, including any permit revisions, specifying the CAIR NOX Annual Trading Program requirements applicable to a CAIR NOX source, to each CAIR NOX unit at the source, and to the owners and operators and the CAIR designated representative of the source and each such unit.

CAIR SO2 source means a source that is subject to the CAIR SO2 Trading Program.

CAIR SO2 Trading Program means a multi-state sulfur dioxide air pollution control and emission reduction program approved and administered by the Administrator in accordance with subparts AAA through III of this part and §51.124(o)(1) or (2) of this chapter or established by the Administrator in accordance with subparts AAA through III of part 97 of this chapter and §§51.124(r) and 52.36 of this chapter, as a means of mitigating interstate transport of fine particulates and sulfur dioxide.

Clean Air Act or CAA means the Clean Air Act, 42 U.S.C. 7401, et seq.

Coal means any solid fuel classified as anthracite, bituminous, subbituminous, or lignite.

Coal-derived fuel means any fuel (whether in a solid, liquid, or gaseous state) produced by the mechanical, thermal, or chemical processing of coal.

Coal-fired means:
(1) Except for purposes of subpart EE of this part, combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of any other fuel, during any year; or
(2) For purposes of subpart EE of this part, combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of any other fuel, during a specified year.

Cogeneration unit means a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine:
(1) Having equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy; and
(2) Producing during the 12-month period starting on the date the unit first produces electricity and during any calendar year after the calendar year in which the unit first produces electricity—
   (i) For a topping-cycle cogeneration unit,
      (A) Useful thermal energy not less than 5 percent of total energy output; and
(B) Useful power that, when added to one-half of useful thermal energy produced, is not less than 42.5 percent of total energy input, if useful thermal energy produced is 15 percent or more of total energy output, or not less than 45 percent of total energy input, if useful thermal energy produced is less than 15 percent of total energy output.

(ii) For a bottoming-cycle cogeneration unit, useful power not less than 45 percent of total energy input;

(3) Provided that the total energy input under paragraphs (2)(i)(B) and (2)(ii) of this definition shall equal the unit’s total energy input from all fuel except biomass if the unit is a boiler.

Combustion turbine means:

(1) An enclosed device comprising a compressor, a combustor, and a turbine and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine; and

(2) If the enclosed device under paragraph (1) of this definition is combined cycle, any associated duct burner, heat recovery steam generator, and steam turbine.

Commence commercial operation means, with regard to a unit:

(1) To have begun to produce steam, gas, or other heated medium used to generate electricity for sale or use, including test generation, except as provided in §96.105 and §96.184(h).

(i) For a unit that is a CAIR NO\textsubscript{X} unit under §96.104 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the date of commencement of commercial operation of the unit, which shall continue to be treated as the same unit.

(ii) For a unit with a date for commencement of commercial operation as defined in paragraph (2) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), such date shall remain the replaced unit’s date of commencement of commercial operation of the unit, which shall continue to be treated as the same unit.

(iii) For a unit that is replaced by a unit at the same source (e.g., repowered) after the date the unit commences operation as defined in paragraph (1) of this definition, such date shall remain the replaced unit’s date of commencement of commercial operation of the unit, which shall continue to be treated as the same unit.

Commence operation means:

(1) To have begun any mechanical, chemical, or electronic process, including, with regard to a unit, start-up of a unit’s combustion chamber, except as provided in §96.184(h).

(2) For a unit that undergoes a physical change (other than replacement of the unit by a unit at the same source) after the date the unit commences operation of the unit, which shall continue to be treated as the same unit.

(i) For a unit with a date for commencement of commercial operation as defined in paragraph (1) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), such date shall remain the replaced unit’s date of commence-
commencement of operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of operation as defined in paragraph (1), (2), or (3) of this definition as appropriate, except as provided in §96.184(h).

Compliance account means a CAIR NOx Allowance Tracking System account, established by the Administrator for a CAIR NOx source under subpart FF or II of this part, in which any CAIR NOx allowance allocations for the CAIR NOx units at the source are initially recorded and in which are held any CAIR NOx allowances available for use for a control period in order to meet the source’s CAIR NOx emissions limitation in accordance with §96.154.

Continuous emission monitoring system or CEMS means the equipment required under subpart HH of this part to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of nitrogen oxides emissions, stack gas volumetric flow rate, stack gas moisture content, and oxygen or carbon dioxide concentration (as applicable), in a manner consistent with part 75 of this chapter. The following systems are the principal types of continuous emission monitoring systems required under subpart HH of this part:

1. A flow monitoring system, consisting of a stack flow rate monitor and an automated data acquisition and handling system and providing a permanent, continuous record of stack gas volumetric flow rate, in standard cubic feet per hour (scfh);
2. A nitrogen oxides concentration monitoring system, consisting of a NOx pollutant concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of NOx emissions, in parts per million (ppm);
3. A nitrogen oxides emission rate (or NOx-diluent) monitoring system, consisting of a NOx pollutant concentration monitor, a diluent gas (CO2 or O2) monitor, and an automated data acquisition and handling system and providing a permanent, continuous record of NOx concentration, in parts per million (ppm), diluent gas concentration, in percent CO2 or O2; and NOx emission rate, in pounds per million British thermal units (lb/mmBtu);
4. A moisture monitoring system, as defined in §75.11(b)(2) of this chapter and providing a permanent, continuous record of the stack gas moisture content, in percent H2O;
5. A carbon dioxide monitoring system, consisting of a CO2 pollutant concentration monitor (or an oxygen monitor plus suitable mathematical equations from which the CO2 concentration is derived) and an automated data acquisition and handling system and providing a permanent, continuous record of CO2 emissions, in percent CO2; and
6. An oxygen monitoring system, consisting of an O2 concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of O2, in percent O2.

Control period means the period beginning January 1 of a calendar year, except as provided in §96.106(c)(2), and ending on December 31 of the same year, inclusive.

Emissions means air pollutants exhausted from a unit or source into the atmosphere, as measured, recorded, and reported to the Administrator by the CAIR designated representative and as determined by the Administrator in accordance with subpart HH of this part.

Excess emissions means any ton of nitrogen oxides emitted by the CAIR NOx units at a CAIR NOx source during a control period that exceeds the CAIR NOx emissions limitation for the source.

Fossil fuel means natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material.

Fossil-fuel-fired means, with regard to a unit, combusting any amount of fossil fuel in any calendar year.

Fuel oil means any petroleum-based fuel (including diesel fuel or petroleum derivatives such as oil tar) and any recycled or blended petroleum products or petroleum by-products used as a fuel whether in a liquid, solid, or gaseous state.
General account means a CAIR NO\textsubscript{X} Allowance Tracking System account, established under subpart FF of this part, that is not a compliance account.

Generator means a device that produces electricity.

Gross electrical output means, with regard to a cogeneration unit, electricity made available for use, including any such electricity used in the power production process (which process includes, but is not limited to, any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls).

Heat input means, with regard to a specified period of time, the product (in mmBtu/time) of the gross calorific value of the fuel (in Btu/lb) divided by 1,000,000 Btu/mmBtu and multiplied by the fuel feed rate into a combustion device (in lb of fuel/time), as measured, recorded, and reported to the Administrator by the CAIR designated representative and determined by the Administrator in accordance with subpart HH of this part and excluding the heat derived from preheated combustion air, recirculated flue gases, or exhaust from other sources.

Heat input rate means the amount of heat input (in mmBtu) divided by unit operating time (in hr) or, with regard to a specific fuel, the amount of heat input attributed to the fuel (in mmBtu) divided by the unit operating time (in hr) during which the unit combusts the fuel.

H\textsubscript{g} Budget Trading Program means a multi-state H\textsubscript{g} air pollution control and emission reduction program approved and administered by the Administrator in accordance with subpart HHHH of part 60 of this chapter and §60.210(a)(6), or established by the Administrator under section 111 of the Clean Air Act, as a means of reducing national H\textsubscript{g} emissions.

Life-of-the-unit, firm power contractual arrangement means a unit participation power sales agreement under which a utility or industrial customer reserves, or is entitled to receive, a specified amount or percentage of nameplate capacity and associated energy generated by any specified unit and pays its proportional amount of such unit’s total costs, pursuant to a contract:

1. For the life of the unit;

2. For a cumulative term of no less than 30 years, including contracts that permit an election for early termination; or

3. For a period no less than 25 years or 70 percent of the economic useful life of the unit determined as of the time the unit is built, with option rights to purchase or release some portion of the nameplate capacity and associated energy generated by the unit at the end of the period.

Maximum design heat input means the maximum amount of fuel per hour (in Btu/hr) that a unit is capable ofcombusting on a steady state basis as of the initial installation of the unit as specified by the manufacturer of the unit.

Monitoring system means any monitoring system that meets the requirements of subpart HH of this part, including a continuous emissions monitoring system, an alternative monitoring system, or an excepted monitoring system under part 75 of this chapter.

Most stringent State or Federal NO\textsubscript{X} emissions limitation means, with regard to a unit, the lowest NO\textsubscript{X} emissions limitation (in terms of lb/mmBtu) that is applicable to the unit under State or Federal law, regardless of the averaging period to which the emissions limitation applies.

Nameplate capacity means, starting from the initial installation of a generator, the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady state basis and during continuous operation (when not restricted by seasonal or other deratings) as of such installation as specified by the manufacturer of the generator or, starting from the completion of any subsequent physical change in the generator resulting in an increase in the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady state basis and during continuous operation (when not restricted by seasonal or other deratings), such increased maximum amount as of such completion as specified by the person conducting the physical change.

Oil-fired means, for purposes of subpart EE of this part, combusting fuel
oil for more than 15.0 percent of the annual heat input in a specified year and not qualifying as coal-fired.

Operator means any person who operates, controls, or supervises a CAIR NO\textsubscript{X} unit or a CAIR NO\textsubscript{X} source and shall include, but not be limited to, any holding company, utility system, or plant manager of such a unit or source.

Owner means any of the following persons:

(1) With regard to a CAIR NO\textsubscript{X} source or a CAIR NO\textsubscript{X} unit at a source, respectively:
   (i) Any holder of any portion of the legal or equitable title in a CAIR NO\textsubscript{X} unit at the source or the CAIR NO\textsubscript{X} unit;
   (ii) Any holder of a leasehold interest in a CAIR NO\textsubscript{X} unit at the source or the CAIR NO\textsubscript{X} unit;
   (iii) Any purchaser of power from a CAIR NO\textsubscript{X} unit at the source or the CAIR NO\textsubscript{X} unit under a life-of-the-unit, firm power contractual arrangement; provided that, unless expressly provided for in a leasehold agreement, owner shall not include a passive lessor, or a person who has an equitable interest through such lessor, whose rental payments are not based (either directly or indirectly) on the revenues or income from such CAIR NO\textsubscript{X} unit; or
   (2) With regard to any general account, any person who has an ownership interest with respect to the CAIR NO\textsubscript{X} allowances held in the general account and who is subject to the binding agreement for the CAIR authorized account representative to represent the person’s ownership interest with respect to CAIR NO\textsubscript{X} allowances.

Permitting authority means the State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to issue or revise permits to meet the requirements of the CAIR NO\textsubscript{X} Annual Trading Program or, if no such agency has been so authorized, the Administrator.

Potential electrical output capacity means 33 percent of a unit’s maximum design heat input, divided by 3,413 Btu/kWh, divided by 1,000 kWh/MWh, and multiplied by 8,760 hr/yr.

Receive or receipt of means, when referring to the permitting authority or the Administrator, to come into possession of a document, information, or correspondence (whether sent in hard copy or by authorized electronic transmission), as indicated in an official log, or by a notation made on the document, information, or correspondence, by the permitting authority or the Administrator in the regular course of business.

Recordation, record, or recorded means, with regard to CAIR NO\textsubscript{X} allowances, the movement of CAIR NO\textsubscript{X} allowances by the Administrator into or between CAIR NO\textsubscript{X} Allowance Tracking System accounts, for purposes of allocation, transfer, or deduction.

Reference method means any direct test method of sampling and analyzing for an air pollutant as specified in §75.22 of this chapter.

Replacement, replace, or replaced means, with regard to a unit, the demolishing of a unit, or the permanent shutdown and permanent disabling of a unit, and the construction of another unit (the replacement unit) to be used instead of the demolished or shutdown unit (the replaced unit).

Repowered means, with regard to a unit, replacement of a coal-fired boiler with one of the following coal-fired technologies at the same source as the coal-fired boiler:

(1) Atmospheric or pressurized fluidized bed combustion;
   (2) Integrated gasification combined cycle;
   (3) Magnetohydrodynamics;
   (4) Direct and indirect coal-fired turbines;
   (5) Integrated gasification fuel cells; or
   (6) As determined by the Administrator in consultation with the Secretary of Energy, a derivative of one or more of the technologies under paragraphs (1) through (5) of this definition and any other coal-fired technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of January 1, 2005.

Serial number means, for a CAIR NO\textsubscript{X} allowance, the unique identification
number assigned to each CAIR NOX allowance by the Administrator.

Sequential use of energy means:

(1) For a topping-cycle cogeneration unit, the use of reject heat from electricity production in a useful thermal energy application or process; or

(2) For a bottoming-cycle cogeneration unit, the use of reject heat from useful thermal energy application or process in electricity production.

Solid waste incineration unit means a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine that is a “solid waste incineration unit” as defined in section 129(g)(1) of the Clean Air Act.

Source means all buildings, structures, or installations located in one or more contiguous or adjacent properties under common control of the same person or persons. For purposes of section 502(c) of the Clean Air Act, a “source,” including a “source” with multiple units, shall be considered a single “facility.”

State means one of the States or the District of Columbia that adopts the CAIR NOX Annual Trading Program pursuant to §51.123(o)(1) or (2) of this chapter.

Submit or serve means to send or transmit a document, information, or correspondence to the person specified in accordance with the applicable regulation:

(1) In person;

(2) By United States Postal Service; or

(3) By other means of dispatch or transmission and delivery. Compliance with any “submission” or “service” deadline shall be determined by the date of dispatch, transmission, or mailing and not the date of receipt.

Title V operating permit means a permit issued under title V of the Clean Air Act and part 70 or part 71 of this chapter.

Title V operating permit regulations means the regulations that the Administrator has approved or issued as meeting the requirements of title V of the Clean Air Act and part 70 or 71 of this chapter.

Ton means 2,000 pounds. For the purpose of determining compliance with the CAIR NOX emissions limitation, total tons of nitrogen oxides emissions for a control period shall be calculated as the sum of all recorded hourly emissions (or the mass equivalent of the recorded hourly emission rates) in accordance with subpart HH of this part, but with any remaining fraction of a ton equal to or greater than 0.50 tons deemed to equal one ton and any remaining fraction of a ton less than 0.50 tons deemed to equal zero tons.

Topping-cycle cogeneration unit means a cogeneration unit in which the energy input to the unit is first used to produce useful power, including electricity, and at least some of the reject heat from the electricity production is then used to provide useful thermal energy.

Total energy input means, with regard to a cogeneration unit, total energy of all forms supplied to the cogeneration unit, excluding energy produced by the cogeneration unit itself. Each form of energy supplied shall be measured by the lower heating value of that form of energy calculated as follows:

$$LHV = HHV - 10.55(W + 9H)$$

Where:

$LHV$ = lower heating value of fuel in Btu/lb,
$HHV$ = higher heating value of fuel in Btu/lb,
$W$ = Weight % of moisture in fuel, and
$H$ = Weight % of hydrogen in fuel.

Total energy output means, with regard to a cogeneration unit, the sum of useful power and useful thermal energy produced by the cogeneration unit.

Unit means a stationary, fossil-fuel-fired boiler or combustion turbine or other stationary, fossil-fuel-fired combustion device.

Unit operating day means a calendar day in which a unit combusts any fuel.

Unit operating hour or hour of unit operation means an hour in which a unit combusts any fuel.

Useful power means, with regard to a cogeneration unit, electricity or mechanical energy made available for use, excluding any such energy used in the power production process (which process includes, but is not limited to, any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls).

Useful thermal energy means, with regard to a cogeneration unit, thermal energy that is:
§ 96.104 Applicability.

(a) Except as provided in paragraph (b) of this section:

(1) The following units in a State shall be CAIR NO\textsubscript{X} units, and any source that includes one or more such units shall be a CAIR NO\textsubscript{X} source, subject to the requirements of this subpart and subparts BB through HH of this part: any stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine serving at any time, since the later of November 15, 1990 or the start-up of the unit’s combustion chamber, a generator with nameplate capacity of more than 25 MWe producing electricity for sale.

(2) If a stationary boiler or stationary combustion turbine that, under paragraph (a)(1) of this section, is not a CAIR NO\textsubscript{X} unit begins to combust fossil fuel or to serve a generator with nameplate capacity of more than 25 MWe producing electricity for sale, the unit shall become a CAIR NO\textsubscript{X} unit as provided in paragraph (a)(1) of this section on the first date on which it both combusts fossil fuel and serves such generator.

(b) The units in a State that meet the requirements set forth in paragraph (b)(1)(i), (b)(2)(i), or (b)(2)(ii) of this section shall not be CAIR NO\textsubscript{X} units:

(1)(i) Any unit that is a CAIR NO\textsubscript{X} unit under paragraph (a)(1) or (2) of this section:

(A) Qualifying as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and continuing to qualify as a cogeneration unit; and

(B) Not serving at any time, since the later of November 15, 1990 or the start-up of the unit’s combustion chamber, a generator with nameplate capacity of more than 25 MWe supplying in any calendar year more than one-third of the unit’s potential electric output capacity or 219,000 MWh, whichever is greater, to any utility power distribution system for sale.

(ii) If a unit qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and meets the requirements of paragraphs (b)(1)(i) of this section for at least one calendar year, but subsequently no longer meets all such requirements, the unit shall become a CAIR NO\textsubscript{X} unit starting on the earlier of January 1 after the first calendar year during which the unit first produces electricity and meets the requirements of paragraphs (b)(1)(i) of this section.

(2)(i) Any unit that is a CAIR NO\textsubscript{X} unit under paragraph (a)(1) or (2) of this section commencing operation before January 1, 1985:

(A) Qualifying as a solid waste incineration unit; and
§ 96.105  Retired unit exemption.

(a)(1) Any CAIR NO<sub>X</sub> unit that is permanently retired and is not a CAIR NO<sub>X</sub> opt-in unit under subpart II of this part shall be exempt from the CAIR NO<sub>X</sub> Annual Trading Program, except for the provisions of this section, § 96.102, § 96.103, § 96.104, § 96.106(c)(4) through (7), § 96.107, § 96.108, and subparts BB and EE through GG.

(2) The exemption under paragraph (a)(1) of this section shall become effective the day on which the CAIR NO<sub>X</sub> unit is permanently retired. Within 30 days of the unit’s permanent retirement, the CAIR designated representative shall submit a statement to the permitting authority otherwise responsible for administering any CAIR permit for the unit and shall submit a copy of the statement to the Administrator. The statement shall state, in a format prescribed by the permitting authority, that the unit was permanently retired on a specific date and will comply with the requirements of paragraph (b) of this section.

(b) Special provisions.

(1) A unit exempt under paragraph (a) of this section shall not emit any nitrogen oxides, starting on the date that the exemption takes effect.

(2) The permitting authority will allocate CAIR NO<sub>X</sub> allowances under subpart EE of this part to a unit exempt under paragraph (a) of this section.

(3) For a period of 5 years from the date the records are created, the owners and operators of a unit exempt under paragraph (a) of this section shall retain, at the source that includes the unit, records demonstrating that the unit is permanently retired. The 5-year period for keeping records may be extended for cause, at any time before the end of the period, in writing by the permitting authority or the Administrator. The owners and operators bear the burden of proof that the unit is permanently retired.

(4) The owners and operators and, to the extent applicable, the CAIR designated representative of a unit exempt under paragraph (a) of this section shall comply with the requirements of the CAIR NO<sub>X</sub> Annual Trading Program concerning all periods for which the exemption is not in effect, even if such requirements arise, or must be complied with, after the exemption takes effect.

(5) A unit exempt under paragraph (a) of this section and located at a source that is required, or but for this exemption would be required, to have a Title V operating permit shall not resume operation unless the CAIR designated representative of the source submits a complete CAIR permit application under § 96.122 for the unit not less than...
18 months (or such lesser time provided by the permitting authority) before the later of January 1, 2009 or the date on which the unit resumes operation.

(6) On the earlier of the following dates, a unit exempt under paragraph (a) of this section shall lose its exemption:

(i) The date on which the CAIR designated representative submits a CAIR permit application for the unit under paragraph (b)(5) of this section;

(ii) The date on which the unit resumes operation, if the CAIR designated representative is not required to submit a CAIR permit application for the unit; or

(iii) The date on which the CAIR designated representative is required to submit a CAIR permit application for the unit under subpart CC of this part.

(7) For the purpose of applying monitoring, reporting, and recordkeeping requirements under subpart HH of this part, a unit that loses its exemption under paragraph (a) of this section shall be treated as a unit that commences commercial operation on the first date on which the unit resumes operation.

§ 96.106 Standard requirements.

(a) Permit requirements. (1) The CAIR designated representative of each CAIR NO\textsubscript{X} source required to have a title V operating permit and each CAIR NO\textsubscript{X} unit required to have a title V operating permit at the source shall:

(i) Submit to the permitting authority a complete CAIR permit application under §96.122 in accordance with the deadlines specified in §96.121; and

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review a CAIR permit application and issue or deny a CAIR permit.

(2) The owners and operators of each CAIR NO\textsubscript{X} source required to have a title V operating permit and each CAIR NO\textsubscript{X} unit required to have a title V operating permit at the source shall have a CAIR permit issued by the permitting authority under subpart CC of this part for the source and operate the source and the unit in compliance with such CAIR permit.

(3) Except as provided in subpart II of this part, the owners and operators of a CAIR NO\textsubscript{X} source that is not otherwise required to have a title V operating permit and each CAIR NO\textsubscript{X} unit that is not otherwise required to have a title V operating permit are not required to submit a CAIR permit application, and to have a CAIR permit, under subpart CC of this part for such CAIR NO\textsubscript{X} source and such CAIR NO\textsubscript{X} unit.

(b) Monitoring, reporting, and recordkeeping requirements. (1) The owners and operators, and the CAIR designated representative, of each CAIR NO\textsubscript{X} source and each CAIR NO\textsubscript{X} unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of subpart HH of this part.

(2) The emissions measurements recorded and reported in accordance with subpart HH of this part shall be used to determine compliance by each CAIR NO\textsubscript{X} source with the CAIR NO\textsubscript{X} emissions limitation under paragraph (c) of this section.

(c) Nitrogen oxides emission requirements. (1) As of the allowance transfer deadline for a control period, the owners and operators of each CAIR NO\textsubscript{X} source and each CAIR NO\textsubscript{X} unit at the source shall hold, in the source’s compliance account, CAIR NO\textsubscript{X} allowances available for compliance deductions for the control period under §96.154(a) in an amount not less than the tons of total nitrogen oxides emissions for the control period from all CAIR NO\textsubscript{X} units at the source, as determined in accordance with subpart HH of this part.

(2) A CAIR NO\textsubscript{X} unit shall be subject to the requirements under paragraph (c)(1) of this section for the control period starting on the later of January 1, 2009 or the deadline for meeting the unit’s monitor certification requirements under §96.170(b)(1), (2), or (5) and for each control period thereafter.

(3) A CAIR NO\textsubscript{X} allowance shall not be deducted, for compliance with the requirements under paragraph (c)(1) of this section, for a control period in a calendar year before the year for which the CAIR NO\textsubscript{X} allowance was allocated.
(4) CAIR NO\textsubscript{X} allowances shall be held in, deducted from, or transferred into or among CAIR NO\textsubscript{X} Allowance Tracking System accounts in accordance with subparts FF, GG, and II of this part.

(5) A CAIR NO\textsubscript{X} allowance is a limited authorization to emit one ton of nitrogen oxides in accordance with the CAIR NO\textsubscript{X} Annual Trading Program. No provision of the CAIR NO\textsubscript{X} Annual Trading Program, the CAIR permit application, the CAIR permit, or an exemption under §96.105 and no provision of law shall be construed to limit the authority of the State or the United States to terminate or limit such authority.

(6) A CAIR NO\textsubscript{X} allowance does not constitute a property right.

(7) Upon recordation by the Administrator under subpart EE, FF, GG, or II of this part, every allocation, transfer, or deduction of a CAIR NO\textsubscript{X} allowance to or from a CAIR NO\textsubscript{X} source’s compliance account is incorporated automatically in any CAIR permit of the source.

(d) Excess emissions requirements. If a CAIR NO\textsubscript{X} source emits nitrogen oxides during any control period in excess of the CAIR NO\textsubscript{X} emissions limitation, then:

(1) The owners and operators of the source and each CAIR NO\textsubscript{X} unit at the source shall surrender the CAIR NO\textsubscript{X} allowances required for deduction under §96.154(d)(1) and pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act or applicable State law; and

(2) Each ton of such excess emissions and each day of such control period shall constitute a separate violation of this subpart, the Clean Air Act, and applicable State law.

(e) Recordkeeping and reporting requirements. (1) Unless otherwise provided, the owners and operators of the CAIR NO\textsubscript{X} source and each CAIR NO\textsubscript{X} unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the permitting authority or the Administrator.

(1) The certificate of representation under §96.113 for the CAIR designated representative for the source and each CAIR NO\textsubscript{X} unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation under §96.113 changing the CAIR designated representative.

(ii) All emissions monitoring information, in accordance with subpart HH of this part, provided that to the extent that subpart HH of this part provides for a 3-year period for recordkeeping, the 3-year period shall apply.

(iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the CAIR NO\textsubscript{X} Annual Trading Program.

(iv) Copies of all documents used to complete a CAIR permit application and any other submission under the CAIR NO\textsubscript{X} Annual Trading Program or to demonstrate compliance with the requirements of the CAIR NO\textsubscript{X} Annual Trading Program.

(2) The CAIR designated representative of a CAIR NO\textsubscript{X} source and each CAIR NO\textsubscript{X} unit at the source shall submit the reports required under the CAIR NO\textsubscript{X} Annual Trading Program, including those under subpart HH of this part.

(f) Liability. (1) Each CAIR NO\textsubscript{X} source and each CAIR NO\textsubscript{X} unit shall meet the requirements of the CAIR NO\textsubscript{X} Annual Trading Program.

(2) Any provision of the CAIR NO\textsubscript{X} Annual Trading Program that applies to a CAIR NO\textsubscript{X} source or the CAIR designated representative of a CAIR NO\textsubscript{X} source shall also apply to the owners and operators of such source and of the CAIR NO\textsubscript{X} units at the source.

(3) Any provision of the CAIR NO\textsubscript{X} Annual Trading Program that applies to a CAIR NO\textsubscript{X} unit or the CAIR designated representative of a CAIR NO\textsubscript{X} unit shall also apply to the owners and operators of such unit.

(g) Effect on other authorities. No provision of the CAIR NO\textsubscript{X} Annual Trading Program, a CAIR permit application, a
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CAIR permit, or an exemption under §96.105 shall be construed as exempting or excluding the owners and operators, and the CAIR designated representative, of a CAIR NO\textsubscript{X} source or CAIR NO\textsubscript{X} unit from compliance with any other provision of the applicable, approved State implementation plan, a federally enforceable permit, or the Clean Air Act.

[70 FR 25339, May 12, 2005, as amended at 71 FR 25382, Apr. 28, 2006]

§ 96.107 Computation of time.

(a) Unless otherwise stated, any time period scheduled, under the CAIR NO\textsubscript{X} Annual Trading Program, to begin on the occurrence of an act or event shall begin on the day the act or event occurs.

(b) Unless otherwise stated, any time period scheduled, under the CAIR NO\textsubscript{X} Annual Trading Program, to begin before the occurrence of an act or event shall be computed so that the period ends the day before the act or event occurs.

(c) Unless otherwise stated, if the final day of any time period, under the CAIR NO\textsubscript{X} Annual Trading Program, falls on a weekend or a State or Federal holiday, the time period shall be extended to the next business day.

§ 96.108 Appeal procedures.

The appeal procedures for decisions of the Administrator under the CAIR NO\textsubscript{X} Annual Trading Program are set forth in part 78 of this chapter.

Subpart BB—CAIR Designated Representative for CAIR NO\textsubscript{X} Sources

Source: 70 FR 25339, May 12, 2005, unless otherwise noted.

§ 96.110 Authorization and responsibilities of CAIR designated representative.

(a) Except as provided under §96.111, each CAIR NO\textsubscript{X} source, including all CAIR NO\textsubscript{X} units at the source, shall have one and only one CAIR designated representative, with regard to all matters under the CAIR NO\textsubscript{X} Annual Trading Program concerning the source or any CAIR NO\textsubscript{X} unit at the source.

(b) The CAIR designated representative of the CAIR NO\textsubscript{X} source shall be selected by an agreement binding on the owners and operators of the source and all CAIR NO\textsubscript{X} units at the source and shall act in accordance with the certification statement in §96.113(a)(4)(iv).

(c) Upon receipt by the Administrator of a complete certificate of representation under §96.113, the CAIR designated representative of the source shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each owner and operator of the CAIR NO\textsubscript{X} source represented and each CAIR NO\textsubscript{X} unit at the source in all matters pertaining to the CAIR NO\textsubscript{X} Annual Trading Program, notwithstanding any agreement between the CAIR designated representative and such owners and operators. The owners and operators shall be bound by any decision or order issued to the CAIR designated representative by the permitting authority, the Administrator, or a court regarding the source or unit.

(d) No CAIR permit will be issued, no emissions data reports will be accepted, and no CAIR NO\textsubscript{X} Allowance Tracking System account will be established for a CAIR NO\textsubscript{X} unit at a source, until the Administrator has received a complete certificate of representation under §96.113 for a CAIR designated representative of the source and the CAIR NO\textsubscript{X} units at the source.

(e)(1) Each submission under the CAIR NO\textsubscript{X} Annual Trading Program shall be submitted, signed, and certified by the CAIR designated representative for each CAIR NO\textsubscript{X} source on behalf of which the submission is made. Each such submission shall include the following certification statement by the CAIR designated representative: "I am authorized to make this submission on behalf of the owners and operators of the source or units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I..."
§96.111 Alternate CAIR designated representative.

(a) A certificate of representation under §96.113 may designate one and only one alternate CAIR designated representative, who may act on behalf of the CAIR designated representative. The agreement by which the alternate CAIR designated representative is selected shall include a procedure for authorizing the alternate CAIR designated representative to act in lieu of the CAIR designated representative.

(b) Upon receipt by the Administrator of a complete certificate of representation under §96.113, any representation, action, inaction, or submission by the alternate CAIR designated representative shall be deemed to be a representation, action, inaction, or submission by the CAIR designated representative.

(c) Except in this section and §§96.102, 96.110(a) and (d), 96.112, 96.113, 96.115, 96.116, 96.182, whenever the term “CAIR designated representative” is used in subparts AA through II of this part, the term shall be construed to include the CAIR designated representative or any alternate CAIR designated representative.

[70 FR 25339, May 12, 2005, as amended at 71 FR 25382, Apr. 28, 2006]

§96.112 Changing CAIR designated representative and alternate CAIR designated representative; changes in owners and operators.

(a) Changing CAIR designated representative. The CAIR designated representative may be changed at any time upon receipt by the Administrator of a superseding complete certificate of representation under §96.113. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CAIR designated representative before the time and date when the Administrator receives the superseding certificate of representation shall be binding on the new CAIR designated representative and the owners and operators of the CAIR NO\textsubscript{X} source and the CAIR NO\textsubscript{X} units at the source.

(b) Changing alternate CAIR designated representative. The alternate CAIR designated representative may be changed at any time upon receipt by the Administrator of a superseding complete certificate of representation under §96.113. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate CAIR designated representative before the time and date when the Administrator receives the superseding certificate of representation shall be binding on the new alternate CAIR designated representative and the owners and operators of the CAIR NO\textsubscript{X} source and the CAIR NO\textsubscript{X} units at the source.

(c) Changes in owners and operators.

(1) In the event an owner or operator of a CAIR NO\textsubscript{X} source or a CAIR NO\textsubscript{X} unit is not included in the list of owners and operators in the certificate of representation under §96.113, such owner or operator shall be deemed to be subject to and bound by the certificate of representation, the representations, actions, inactions, and submissions of the CAIR designated representative and any alternate CAIR designated representative of the source or unit, and the decisions and orders of the permitting authority, the Administrator, or a court, as if the owner or operator were included in such list.

(2) Within 30 days following any change in the owners and operators of a CAIR NO\textsubscript{X} source or a CAIR NO\textsubscript{X} unit, including the addition of a new owner or operator, the CAIR designated representative or any alternate CAIR designated representative shall submit a revision to the certificate of representation under §96.113 amending the list.
§ 96.113 Certificate of representation.

(a) A complete certificate of representation for a CAIR designated representative or an alternate CAIR designated representative shall include the following elements in a format prescribed by the Administrator:

(1) Identification of the CAIR NO\textsubscript{X} source, and each CAIR NO\textsubscript{X} unit at the source, for which the certificate of representation is submitted, including identification and nameplate capacity of each generator served by each such unit.

(2) The name, address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the CAIR designated representative and any alternate CAIR designated representative.

(3) A list of the owners and operators of the CAIR NO\textsubscript{X} source and of each CAIR NO\textsubscript{X} unit at the source.

(4) The following certification statements by the CAIR designated representative and any alternate CAIR designated representative:

(i) “I certify that I was selected as the CAIR designated representative or alternate CAIR designated representative, as applicable, by an agreement binding on the owners and operators of the source and each CAIR NO\textsubscript{X} unit at the source.”

(ii) “I certify that I have all the necessary authority to carry out my duties and responsibilities under the CAIR NO\textsubscript{X} Annual Trading Program on behalf of the owners and operators of the source and each CAIR NO\textsubscript{X} unit at the source and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions.”

(iii) “I certify that the owners and operators of the source and of each CAIR NO\textsubscript{X} unit at the source shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.”

(iv) “Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, a CAIR NO\textsubscript{X} unit, or where a utility or industrial customer purchases power from a CAIR NO\textsubscript{X} unit under a life-of-the-unit, firm power contractual arrangement, I certify that: I have given a written notice of my selection as the ‘CAIR designated representative’ or ‘alternate CAIR designated representative’, as applicable, and of the agreement by which I was selected to each owner and operator of the source and of each CAIR NO\textsubscript{X} unit at the source; and CAIR NO\textsubscript{X} allowances and proceeds of transactions involving CAIR NO\textsubscript{X} allowances will be deemed to be held or distributed in proportion to each holder’s legal, equitable, leasehold, or contractual reservation or entitlement, except that, if such multiple holders have expressly provided for a different distribution of CAIR NO\textsubscript{X} allowances by contract, CAIR NO\textsubscript{X} allowances and proceeds of transactions involving CAIR NO\textsubscript{X} allowances will be deemed to be held or distributed in accordance with the contract.”

(5) The signature of the CAIR designated representative and any alternate CAIR designated representative and the dates signed.

(b) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the certificate of representation shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

§ 96.114 Objections concerning CAIR designated representative.

(a) Once a complete certificate of representation under §96.113 has been submitted and received, the permitting authority and the Administrator will rely on the certificate of representation unless and until a superseding complete certificate of representation under §96.113 is received by the Administrator.
(b) Except as provided in §96.112(a) or (b), no objection or other communication submitted to the permitting authority or the Administrator concerning the authorization, or any representation, action, inaction, or submission, of the CAIR designated representative shall affect any representation, action, inaction, or submission of the CAIR designated representative or the finality of any decision or order by the permitting authority or the Administrator under the CAIR NOx Annual Trading Program.

(c) Neither the permitting authority nor the Administrator will adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of any CAIR designated representative, including private legal disputes concerning the proceeds of CAIR NOx allowance transfers.

§96.115 Delegation by CAIR designated representative and alternate CAIR designated representative.

(a) A CAIR designated representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under this part.

(b) An alternate CAIR designated representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under this part.

(c) In order to delegate authority to make an electronic submission to the Administrator in accordance with paragraph (a) or (b) of this section, the CAIR designated representative or alternate CAIR designated representative, as appropriate, must submit to the Administrator a notice of delegation, in a format prescribed by the Administrator, that includes the following elements:

(1) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of such CAIR designated representative or alternate CAIR designated representative;

(2) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of each such natural person (referred to as an “agent”):

(3) For each such natural person, a list of the type or types of electronic submissions under paragraph (a) or (b) of this section for which authority is delegated to him or her; and

(4) The following certification statements by such CAIR designated representative or alternate CAIR designated representative:

(i) “I agree that any electronic submission to the Administrator that is by an agent identified in this notice of delegation and of a type listed for such agent in this notice of delegation and that is made when I am a CAIR designated representative or alternate CAIR designated representative, as appropriate, and before this notice of delegation is superseded by another notice of delegation under 40 CFR 96.115(d) shall be deemed to be an electronic submission by me.”

(ii) “Until this notice of delegation is superseded by another notice of delegation under 40 CFR 96.115(d), I agree to maintain an e-mail account and to notify the Administrator immediately of any change in my e-mail address unless all delegation of authority by me under 40 CFR 96.115 is terminated.”

(d) A notice of delegation submitted under paragraph (c) of this section shall be effective, with regard to the CAIR designated representative or alternate CAIR designated representative identified in such notice, upon receipt of such notice by the Administrator and until receipt by the Administrator of a superseding notice of delegation submitted by such CAIR designated representative or alternate CAIR designated representative, as appropriate. The superseding notice of delegation may replace any previously identified agent, add a new agent, or eliminate entirely any delegation of authority.

(e) Any electronic submission covered by the certification in paragraph (c)(4)(i) of this section and made in accordance with a notice of delegation effective under paragraph (d) of this section shall be deemed to be an electronic submission by the CAIR designated representative or alternate CAIR designated representative or alternate CAIR designated representative.
CAIR designated representative submitting such notice of delegation.


Subpart CC—Permits

SOURCE: 70 FR 25339, May 12, 2005, unless otherwise noted.

§ 96.120 General CAIR NOX Annual Trading Program permit requirements.

(a) For each CAIR NOX source required to have a title V operating permit or required, under subpart II of this part, to have a title V operating permit or other federally enforceable permit, such permit shall include a CAIR permit administered by the permitting authority for the title V operating permit or the federally enforceable permit as applicable. The CAIR portion of the title V permit or other federally enforceable permit as applicable shall be administered in accordance with the permitting authority’s title V operating permits regulations promulgated under part 70 or 71 of this chapter or the permitting authority’s regulations for other federally enforceable permits as applicable, except as provided otherwise by §96.105, this subpart, and subpart II of this part.

(b) Each CAIR permit shall contain, with regard to the CAIR NOX source and the CAIR NOX units at the source covered by the CAIR permit, all applicable CAIR NOX Annual Trading Program, CAIR NOX Ozone Season Trading Program, and CAIR SO2 Trading Program requirements and shall be a complete and separable portion of the title V operating permit or other federally enforceable permit under paragraph (a) of this section.

[70 FR 25339, May 12, 2005, as amended at 71 FR 25383, Apr. 28, 2006]

§ 96.121 Submission of CAIR permit applications.

(a) Duty to apply. The CAIR designated representative of any CAIR NOX source required to have a title V operating permit shall submit to the permitting authority a complete CAIR permit application under §96.122 for the source covering each CAIR NOX unit at the source at least 18 months (or such lesser time provided by the permitting authority) before the later of January 1, 2009 or the date on which the CAIR NOX unit commences commercial operation, except as provided in §96.183(a).

(b) Duty to Reapply. For a CAIR NOX source required to have a title V operating permit, the CAIR designated representative shall submit a complete CAIR permit application under §96.122 for the source covering each CAIR NOX unit at the source to renew the CAIR permit in accordance with the permitting authority’s title V operating permits regulations addressing permit renewal, except as provided in §96.183(b).

[70 FR 25339, May 12, 2005, as amended at 71 FR 25383, Apr. 28, 2006]

§ 96.122 Information requirements for CAIR permit applications.

A complete CAIR permit application shall include the following elements concerning the CAIR NOX source for which the application is submitted, in a format prescribed by the permitting authority:

(a) Identification of the CAIR NOX source;

(b) Identification of each CAIR NOX unit at the CAIR NOX source; and

(c) The standard requirements under §96.106.

[70 FR 25339, May 12, 2005]

§ 96.123 CAIR permit contents and term.

(a) Each CAIR permit will contain, in a format prescribed by the permitting authority, all elements required for a complete CAIR permit application under §96.122.

(b) Each CAIR permit is deemed to incorporate automatically the definitions of terms under §96.102 and, upon recordation by the Administrator under subpart EE, FF, GG, or II of this part, every allocation, transfer, or deduction of a CAIR NOX allowance to or from the compliance account of the CAIR NOX source covered by the permit.

(c) The term of the CAIR permit will be set by the permitting authority, as necessary to facilitate coordination of the renewal of the CAIR permit with issuance, revision, or renewal of the CAIR NOX source’s title V operating
permit or other federally enforceable permit as applicable.

§ 96.124 CAIR permit revisions.

Except as provided in §96.123(b), the permitting authority will revise the CAIR permit, as necessary, in accordance with the permitting authority’s title V operating permits regulations or the permitting authority’s regulations for other federally enforceable permits as applicable addressing permit revisions.

Subpart DD [Reserved]

Subpart EE—CAIR NO\textsubscript{X} Allowance Allocations

SOURCE: 70 FR 25339, May 12, 2005, unless otherwise noted.

§ 96.140 State trading budgets.

The State trading budgets for annual allocations of CAIR NO\textsubscript{X} allowances for the control periods in 2009 through 2014 and in 2015 and thereafter are respectively as follows:

<table>
<thead>
<tr>
<th>State</th>
<th>State trading budget for 2009–2014 (tons)</th>
<th>State trading budget for 2015 and thereafter (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>69,020</td>
<td>57,517</td>
</tr>
<tr>
<td>Delaware</td>
<td>4,166</td>
<td>3,472</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>144</td>
<td>120</td>
</tr>
<tr>
<td>Florida</td>
<td>99,445</td>
<td>82,871</td>
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<tr>
<td>Georgia</td>
<td>66,321</td>
<td>55,268</td>
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<tr>
<td>Illinois</td>
<td>76,230</td>
<td>63,525</td>
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<td>Indiana</td>
<td>108,935</td>
<td>90,779</td>
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<tr>
<td>Iowa</td>
<td>32,692</td>
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<td>Kentucky</td>
<td>83,205</td>
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<td>Louisiana</td>
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<td>Maryland</td>
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<td>Michigan</td>
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<td>Minnesota</td>
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<td>Mississippi</td>
<td>17,807</td>
<td>14,839</td>
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<tr>
<td>Missouri</td>
<td>59,871</td>
<td>49,892</td>
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<tr>
<td>New Jersey</td>
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<td>10,558</td>
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<td>New York</td>
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<td>North Carolina</td>
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<tr>
<td>Ohio</td>
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<td>90,558</td>
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<tr>
<td>Pennsylvania</td>
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<td>82,541</td>
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<tr>
<td>South Carolina</td>
<td>32,662</td>
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<tr>
<td>Tennessee</td>
<td>50,973</td>
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<tr>
<td>Texas</td>
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<tr>
<td>Virginia</td>
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<td>30,062</td>
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<tr>
<td>West Virginia</td>
<td>74,220</td>
<td>61,850</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>40,759</td>
<td>33,966</td>
</tr>
</tbody>
</table>

§ 96.141 Timing requirements for CAIR NO\textsubscript{X} allowance allocations.

(a) By October 31, 2006, the permitting authority will submit to the Administrator the CAIR NO\textsubscript{X} allowance allocations, in a format prescribed by the Administrator and in accordance with §96.142(a) and (b), for the control periods in 2009, 2010, 2011, 2012, 2013, and 2014.

(b) By October 31, 2009 and October 31 of each year thereafter, the permitting authority will submit to the Administrator the CAIR NO\textsubscript{X} allowance allocations, in a format prescribed by the Administrator and in accordance with §96.142(a) and (b), for the control period in the sixth year after the year of the applicable deadline for submission under this paragraph.

(c) By October 31, 2009 and October 31 of each year thereafter, the permitting authority will submit to the Administrator the CAIR NO\textsubscript{X} allowance allocations, in a format prescribed by the Administrator and in accordance with §96.142(a), (c), and (d), for the control period in the year of the applicable deadline for submission under this paragraph.

§ 96.142 CAIR NO\textsubscript{X} allowance allocations.

(a)(1) The baseline heat input (in mmBtu) used with respect to CAIR NO\textsubscript{X} allowance allocations under paragraph (b) of this section for each CAIR NO\textsubscript{X} unit will be:

(i) For units commencing operation before January 1, 2001 the average of the 3 highest amounts of the unit’s adjusted control period heat input for 2000 through 2004, with the adjusted control period heat input for each year calculated as follows:

(A) If the unit is coal-fired during the year, the unit’s control period heat input for such year is multiplied by 100 percent;

(B) If the unit is oil-fired during the year, the unit’s control period heat input for such year is multiplied by 60 percent; and

(C) If the unit is not subject to paragraph (a)(1)(i)(A) or (B) of this section, the unit’s control period heat input for such year is multiplied by 40 percent.
(i) For units commencing operation on or after January 1, 2001 and operating each calendar year during a period of 5 or more consecutive calendar years, the average of the 3 highest amounts of the unit’s total converted control period heat input over the first such 5 years.

(2)(i) A unit’s control period heat input, and a unit’s status as coal-fired or oil-fired, for a calendar year under paragraph (a)(1)(i) of this section, and a unit’s total tons of NO\textsubscript{X} emissions during a calendar year under paragraph (c)(3) of this section, will be determined in accordance with part 75 of this chapter, to the extent the unit was otherwise subject to the requirements of part 75 of this chapter for the year, or will be based on the best available data reported to the permitting authority for the unit, to the extent the unit was not otherwise subject to the requirements of part 75 of this chapter for the year.

(ii) A unit’s converted control period heat input for a calendar year specified under paragraph (a)(1)(ii) of this section equals:

(A) Except as provided in paragraph (a)(2)(ii)(B) or (C) of this section, the control period gross electrical output of the generator or generators served by the unit multiplied by 7,900 Btu/kWh, if the unit is coal-fired for the year, or 6,675 Btu/kWh, if the unit is not coal-fired for the year, and divided by 1,000,000 Btu/mmBtu, provided that if a generator is served by 2 or more units, then the gross electrical output of the generator will be attributed to each unit in proportion to the unit’s share of the total control period heat input of such units for the year;

(B) For a unit that is a boiler and has equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy, the total heat energy (in Btu) of the steam produced by any associated heat recovery steam generator during the control period divided by 0.8, and with the sum divided by 1,000,000 Btu/mmBtu.

(b)(1) For each control period in 2009 and thereafter, the permitting authority will allocate to all CAIR NO\textsubscript{X} units in the State that have a baseline heat input (as determined under paragraph (a) of this section) a total amount of CAIR NO\textsubscript{X} allowances equal to 95 percent for a control period during 2009 through 2014, and 97 percent for a control period during 2015 and thereafter, of the tons of NO\textsubscript{X} emissions in the State trading budget under §96.140 (except as provided in paragraph (d) of this section).

(2) The permitting authority will allocate CAIR NO\textsubscript{X} allowances to each CAIR NO\textsubscript{X} unit under paragraph (b)(1) of this section in an amount determined by multiplying the total amount of CAIR NO\textsubscript{X} allowances allocated under paragraph (b)(1) of this section by the ratio of the baseline heat input of such CAIR NO\textsubscript{X} unit to the total amount of baseline heat input of all such CAIR NO\textsubscript{X} units in the State and rounding to the nearest whole allowance as appropriate.

(c) For each control period in 2009 and thereafter, the permitting authority will allocate CAIR NO\textsubscript{X} allowances to CAIR NO\textsubscript{X} units in a State that are not allocated CAIR NO\textsubscript{X} allowances under paragraph (b) of this section because the units do not yet have a baseline heat input under paragraph (a) of this section or because the units have a baseline heat input but all CAIR NO\textsubscript{X} allowances available under paragraph (b) of this section for the control period are already allocated, in accordance with the following procedures:

(1) The permitting authority will establish a separate new unit set-aside for each control period. Each new unit set-aside will be allocated CAIR NO\textsubscript{X} allowances equal to 5 percent for a control period in 2009 through 2014, and 3 percent for a control period in 2015 and thereafter, of the amount of tons of
§ 96.143  Compliance supplement pool.

(a) In addition to the CAIR NO\textsubscript{X} allowances allocated under §96.142, the permitting authority may allocate for

NO\textsubscript{X} emissions in the State trading budget under §96.140.

(2) The CAIR designated representative of such a CAIR NO\textsubscript{X} unit may submit to the permitting authority a request, in a format specified by the permitting authority, to be allocated CAIR NO\textsubscript{X} allowances, starting with the later of the control period in 2009 or the first control period after the control period in which the CAIR NO\textsubscript{X} unit commences commercial operation and until the first control period for which the unit is allocated CAIR NO\textsubscript{X} allowances under paragraph (b) of this section. A separate CAIR NO\textsubscript{X} allowance allocation request for each control period for which CAIR NO\textsubscript{X} allowances are sought must be submitted on or before May 1 of such control period and after the date on which the CAIR NO\textsubscript{X} unit commences commercial operation.

(3) In a CAIR NO\textsubscript{X} allowance allocation request under paragraph (c)(2) of this section, the CAIR designated representative may request for a control period CAIR NO\textsubscript{X} allowances in an amount not exceeding the CAIR NO\textsubscript{X} unit’s total tons of NO\textsubscript{X} emissions during the calendar year immediately before such control period.

(4) The permitting authority will review each CAIR NO\textsubscript{X} allowance allocation request under paragraph (c)(2) of this section and will allocate CAIR NO\textsubscript{X} allowances for each control period pursuant to such request as follows:

(i) The permitting authority will accept an allowance allocation request only if the request meets, or is adjusted by the permitting authority as necessary to meet, the requirements of paragraphs (c)(2) and (3) of this section.

(ii) On or after May 1 of the control period, the permitting authority will determine the sum of the CAIR NO\textsubscript{X} allowances requested (as adjusted under paragraph (c)(4)(i) of this section) in all allowance allocation requests accepted under paragraph (c)(4)(i) of this section for the control period.

(iii) If the amount of CAIR NO\textsubscript{X} allowances in the new unit set-aside for the control period is greater than or equal to the sum under paragraph (c)(4)(ii) of this section, then the permitting authority will allocate the amount of CAIR NO\textsubscript{X} allowances requested (as adjusted under paragraph (c)(4)(i) of this section), multiplied by the unit’s allowance allocation under paragraph (b) of this section, divided by 95 percent for a control period during 2009 through 2014, and 97 percent for a control period during 2015 and thereafter, of the amount of tons of NO\textsubscript{X} emissions in the State trading budget under §96.140, and rounded to the nearest whole allowance as appropriate.

(v) The permitting authority will notify each CAIR designated representative that submitted an allowance allocation request of the amount of CAIR NO\textsubscript{X} allowances (if any) allocated for the control period to the CAIR NO\textsubscript{X} unit covered by the request.

(d) If, after completion of the procedures under paragraph (c)(4) of this section for a control period, any unallocated CAIR NO\textsubscript{X} allowances remain in the new unit set-aside for the control period, the permitting authority will allocate to each CAIR NO\textsubscript{X} unit that was allocated CAIR NO\textsubscript{X} allowances under paragraph (b) of this section an amount of CAIR NO\textsubscript{X} allowances equal to the total amount of such remaining unallocated CAIR NO\textsubscript{X} allowances, multiplied by the unit’s allocation under paragraph (b) of this section, divided by 95 percent for a control period during 2009 through 2014, and 97 percent for a control period during 2015 and thereafter, of the amount of tons of NO\textsubscript{X} emissions in the State trading budget under §96.140, and rounded to the nearest whole allowance as appropriate.

[70 FR 25339, May 12, 2005, as amended at 71 FR 25383, Apr. 28, 2006]
the control period in 2009 up to the following amount of CAIR NO\textsubscript{X} allowances to CAIR NO\textsubscript{X} units in the respective State:

<table>
<thead>
<tr>
<th>State</th>
<th>Compliance supplement pool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>10,166</td>
</tr>
<tr>
<td>Delaware</td>
<td>843</td>
</tr>
<tr>
<td>District Of Columbia</td>
<td>0</td>
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<tr>
<td>Florida</td>
<td>8,335</td>
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<td>Georgia</td>
<td>12,397</td>
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<td>Illinois</td>
<td>11,299</td>
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<tr>
<td>Indiana</td>
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<td>Iowa</td>
<td>6,978</td>
</tr>
<tr>
<td>Kentucky</td>
<td>14,935</td>
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<tr>
<td>Louisiana</td>
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<tr>
<td>Pennsylvania</td>
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<td>South Carolina</td>
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<td>Texas</td>
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<td>Virginia</td>
<td>5,134</td>
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<tr>
<td>West Virginia</td>
<td>16,929</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>4,858</td>
</tr>
</tbody>
</table>

(b) For any CAIR NO\textsubscript{X} unit in the State that achieves NO\textsubscript{X} emission reductions in 2007 and 2008 that are not necessary to comply with any State or federal emissions limitation applicable during such years, the CAIR designated representative of the unit may request the allocation of early reduction credits, and allocation of NO\textsubscript{X} allowances from the compliance supplement pool under paragraph (a) of this section for such early reduction credits, in accordance with the following:

(1) The CAIR designated representative of such CAIR NO\textsubscript{X} unit shall submit to the permitting authority by May 1, 2009 a request, in a format specified by the permitting authority, for allocation of an amount of CAIR NO\textsubscript{X} allowances from the compliance supplement pool not exceeding the minimum amount of CAIR NO\textsubscript{X} allowances necessary to remove such undue risk to the reliability of electricity supply.

(2) In the request under paragraph (c)(1) of this section, the CAIR designated representative of such CAIR NO\textsubscript{X} unit shall demonstrate that, in the absence of allocation to the unit of the amount of CAIR NO\textsubscript{X} allowances requested, the unit’s compliance with the CAIR NO\textsubscript{X} emissions limitation for the control period in 2009 would create an undue risk to the reliability of electricity supply during such control period. This demonstration must include a showing that it would not be feasible for the owners and operators of the unit to:

(i) Obtain a sufficient amount of electricity from other electricity generation facilities, during the installation of control technology at the unit for compliance with the CAIR NO\textsubscript{X} emissions limitation, to prevent such undue risk; or

(ii) Obtain under paragraphs (b) and (d) of this section, or otherwise obtain, a sufficient amount of CAIR NO\textsubscript{X} allowances to prevent such undue risk.

(d) The permitting authority will review each request under paragraph (b) or (c) of this section submitted by May 1, 2009 and will allocate CAIR NO\textsubscript{X} allowances for the control period in 2009.
to CAIR NO\textsubscript{X} units in the State and covered by such request as follows:

1. Upon receipt of each such request, the permitting authority will make any necessary adjustments to the request to ensure that the amount of the CAIR NO\textsubscript{X} allowances requested meets the requirements of paragraph (b) or (c) of this section.

2. If the State’s compliance supplement pool under paragraph (a) of this section has an amount of CAIR NO\textsubscript{X} allowances not less than the total amount of CAIR NO\textsubscript{X} allowances in all such requests (as adjusted under paragraph (d)(1) of this section), the permitting authority will allocate to each CAIR NO\textsubscript{X} unit covered by such requests the amount of CAIR NO\textsubscript{X} allowances requested (as adjusted under paragraph (d)(1) of this section).

3. If the State’s compliance supplement pool under paragraph (a) of this section has a smaller amount of CAIR NO\textsubscript{X} allowances than the total amount of CAIR NO\textsubscript{X} allowances in all such requests (as adjusted under paragraph (d)(1) of this section), the permitting authority will allocate CAIR NO\textsubscript{X} allowances to each CAIR NO\textsubscript{X} unit covered by such requests according to the following formula and rounding to the nearest whole allowance as appropriate:

\[
\text{Unit’s allocation} = \frac{\text{Unit’s adjusted allocation} \times (\text{State’s compliance supplement pool} + \text{Total adjusted allocations for all units})}{\text{Total adjusted allocations for all units}}
\]

Where:
- ‘Unit’s allocation’ is the amount of CAIR NO\textsubscript{X} allowances allocated to the unit from the State’s compliance supplement pool.
- ‘Unit’s adjusted allocation’ is the amount of CAIR NO\textsubscript{X} allowances requested for the unit under paragraph (b) or (c) of this section, as adjusted under paragraph (d)(1) of this section.
- “State’s compliance supplement pool” is the amount of CAIR NO\textsubscript{X} allowances in the State’s compliance supplement pool.
- “Total adjusted allocations for all units” is the sum of the amounts of allocations requested for all units under paragraph (b) or (c) of this section, as adjusted under paragraph (d)(1) of this section.

4. By November 30, 2009, the permitting authority will determine, and submit to the Administrator, the allocations under paragraph (d)(2) or (3) of this section.

5. By January 1, 2010, the Administrator will record the allocations under paragraph (d)(4) of this section.

Subpart FF—CAIR NO\textsubscript{X} Allowance Tracking System

§ 96.150 [Reserved]

§ 96.151 Establishment of accounts.

(a) Compliance accounts. Except as provided in §96.184(e), upon receipt of a complete certificate of representation under §96.113, the Administrator will establish a compliance account for the CAIR NO\textsubscript{X} source for which the certificate of representation was submitted unless the source already has a compliance account.

(b) General accounts—(1) Application for general account. (i) Any person may apply to open a general account for the purpose of holding and transferring CAIR NO\textsubscript{X} allowances. An application for a general account may designate one and only one CAIR authorized account representative and one and only one alternate CAIR authorized account representative who may act on behalf of the CAIR authorized account representative. The agreement by which the alternate CAIR authorized account representative is selected shall include a procedure for authorizing the alternate CAIR authorized account representative to act in lieu of the CAIR authorized account representative.

(ii) A complete application for a general account shall be submitted to the Administrator and shall include the following elements in a format prescribed by the Administrator:

(A) Name, mailing address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the CAIR authorized account representative and any alternate CAIR authorized account representative;

(B) Organization name and type of organization, if applicable;

(C) A list of all persons subject to a binding agreement for the CAIR authorized account representative and any alternate CAIR authorized account representative.
any alternate CAIR authorized account representative to represent their ownership interest with respect to the CAIR NO\textsubscript{X} allowances held in the general account;

(D) The following certification statement by the CAIR authorized account representative and any alternate CAIR authorized account representative: “I certify that I was selected as the CAIR authorized account representative or the alternate CAIR authorized account representative, as applicable, by an agreement that is binding on all persons who have an ownership interest with respect to CAIR NO\textsubscript{X} allowances held in the general account. I certify that I have all the necessary authority to carry out my duties and responsibilities under the CAIR NO\textsubscript{X} Annual Trading Program on behalf of such persons and that each such person shall be fully bound by my representations, actions, inactions, or submissions and by any order or decision issued to me by the Administrator or a court regarding the general account.”

(E) The signature of the CAIR authorized account representative and any alternate CAIR authorized account representative and the dates signed.

(iii) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the application for a general account shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

(2) Authorization of CAIR authorized account representative and alternate CAIR authorized account representative.

(i) Upon receipt by the Administrator of a complete application for a general account under paragraph (b)(1) of this section:

(A) The Administrator will establish a general account for the person or persons for whom the application is submitted.

(B) The CAIR authorized account representative and any alternate CAIR authorized account representative for the general account shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each person who has an ownership interest with respect to CAIR NO\textsubscript{X} allowances held in the general account in all matters pertaining to the CAIR NO\textsubscript{X} Annual Trading Program, notwithstanding any agreement between the CAIR authorized account representative or any alternate CAIR authorized account representative and such person. Any such person shall be bound by any order or decision issued to the CAIR authorized account representative or any alternate CAIR authorized account representative by the Administrator or a court regarding the general account.

(C) Any representation, action, inaction, or submission by any alternate CAIR authorized account representative shall be deemed to be a representation, action, inaction, or submission by the CAIR authorized account representative.

(ii) Each submission concerning the general account shall be submitted, signed, and certified by the CAIR authorized account representative or any alternate CAIR authorized account representative for the persons having an ownership interest with respect to CAIR NO\textsubscript{X} allowances held in the general account. Each such submission shall include the following certification statement by the CAIR authorized account representative or any alternate CAIR authorized account representative: “I am authorized to make this submission on behalf of the persons having an ownership interest with respect to the CAIR NO\textsubscript{X} allowances held in the general account. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(iii) The Administrator will accept or act on a submission concerning the
general account only if the submission has been made, signed, and certified in accordance with paragraph (b)(2)(ii) of this section.

(3) Changing CAIR authorized account representative and alternate CAIR authorized account representative; changes in persons with ownership interest. (i) The CAIR authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CAIR authorized account representative before the time and date when the Administrator receives the superseding application for a general account shall be binding on the new CAIR authorized account representative and the persons with an ownership interest with respect to the CAIR NO\textsubscript{X} allowances in the general account.

(ii) The alternate CAIR authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate CAIR authorized account representative before the time and date when the Administrator receives the superseding application for a general account shall be binding on the new alternate CAIR authorized account representative and the persons with an ownership interest with respect to the CAIR NO\textsubscript{X} allowances in the general account.

(iii)(A) In the event a person having an ownership interest with respect to CAIR NO\textsubscript{X} allowances in the general account is not included in the list of such persons in the application for a general account, such person shall be deemed to be subject to and bound by the application for a general account, the representation, actions, inactions, and submissions of the CAIR authorized account representative and any alternate CAIR authorized account representative or the finality of any decision or order by the Administrator under the CAIR NO\textsubscript{X} Annual Trading Program.

(iii)(B) The Administrator will not adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative or the finality of any decision or order by the Administrator under the CAIR NO\textsubscript{X} Annual Trading Program.

(4) Objections concerning CAIR authorized account representative and alternate CAIR authorized account representative. (i) Once a complete application for a general account under paragraph (b)(1) of this section has been submitted and received, the Administrator will rely on the application unless and until a superseding complete application for a general account under paragraph (b)(1) of this section is received by the Administrator.

(ii) Except as provided in paragraph (b)(3)(i) or (ii) of this section, no objection or other communication submitted to the Administrator concerning the authorization, or any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative or any alternate CAIR authorized account representative or the finality of any decision or order by the Administrator under the CAIR NO\textsubscript{X} Annual Trading Program.

(iii)(A) In the event a person having an ownership interest with respect to CAIR NO\textsubscript{X} allowances in the general account is not included in the list of such persons in the application for a general account, such person shall be deemed to be subject to and bound by the application for a general account, the representation, actions, inactions, and submissions of the CAIR authorized account representative and any alternate CAIR authorized account representative or the finality of any decision or order by the Administrator under the CAIR NO\textsubscript{X} Annual Trading Program.

(iii)(B) The Administrator will not adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative or the finality of any decision or order by the Administrator under the CAIR NO\textsubscript{X} Annual Trading Program.
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§ 96.152 Responsibilities of CAIR authorized account representative.

Following the establishment of a CAIR NOx Allowance Tracking System account, all submissions to the Administrator pertaining to the account, including, but not limited to, submissions concerning the deduction or transfer of CAIR NOx allowances in the

(c) Account identification. The Administrator will assign a unique identifying number to each account established under paragraph (a) or (b) of this section.

(5) Delegation by CAIR authorized account representative and alternate CAIR authorized account representative. (i) A CAIR authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under subparts FF and GG of this part.

(ii) An alternate CAIR authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under subparts FF and GG of this part.

(iii) In order to delegate authority to make an electronic submission to the Administrator in accordance with paragraph (b)(5)(i) or (ii) of this section, the CAIR authorized account representative or alternate CAIR authorized account representative, as appropriate, must submit to the Administrator a notice of delegation, in a format prescribed by the Administrator, that includes the following elements:

(A) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of such CAIR authorized account representative or alternate CAIR authorized account representative;

(B) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of each such natural person (referred to as an “agent”);

(C) For each such natural person, a list of the type or types of electronic submissions under paragraph (b)(5)(i) or (ii) of this section for which authority is delegated to him or her;

(D) The following certification statement by such CAIR authorized account representative or alternate CAIR authorized account representative: ‘‘I agree that any electronic submission to the Administrator that is by an agent identified in this notice of delegation and of a type listed for such agent in this notice of delegation and that is made when I am a CAIR authorized account representative or alternate CAIR authorized account representative, as appropriate, and before this notice of delegation is superseded by another notice of delegation under 40 CFR 96.151(b)(5)(iv) shall be deemed to be an electronic submission by me.’’; and

(E) The following certification statement by such CAIR authorized account representative or alternate CAIR authorized account representative: ‘‘Until this notice of delegation is superseded by another notice of delegation under 40 CFR 96.151(b)(5)(iv), I agree to maintain an e-mail account and to notify the Administrator immediately of any change in my e-mail address unless all delegation of authority by me under 40 CFR 96.151(b)(5) is terminated.’’

(iv) A notice of delegation submitted under paragraph (b)(5)(iii) of this section shall be effective, with regard to the CAIR authorized account representative or alternate CAIR authorized account representative identified in such notice, upon receipt of such notice by the Administrator and until receipt by the Administrator of a superseding notice of delegation submitted by such CAIR authorized account representative or alternate CAIR authorized account representative, as appropriate. The superseding notice of delegation may replace any previously identified agent, add a new agent, or eliminate entirely any delegation of authority.

(v) Any electronic submission covered by the certification in paragraph (b)(5)(iii)(D) of this section and made in accordance with a notice of delegation effective under paragraph (b)(5)(iv) of this section shall be deemed to be an electronic submission by the CAIR designated representative or alternate CAIR designated representative submitting such notice of delegation.

§ 96.153 Recordation of CAIR NO\textsubscript{X} allowance allocations.

(a) By September 30, 2007, the Administrator will record in the CAIR NO\textsubscript{X} source's compliance account the CAIR NO\textsubscript{X} allowances allocated for the CAIR NO\textsubscript{X} units at the source, as submitted by the permitting authority in accordance with §96.141(a), for the control periods in 2009, 2010, 2011, 2012, 2013, and 2014.

(b) By December 1, 2009, the Administrator will record in the CAIR NO\textsubscript{X} source's compliance account the CAIR NO\textsubscript{X} allowances allocated for the CAIR NO\textsubscript{X} units at the source, as submitted by the permitting authority in accordance with §96.141(b), for the control period in 2015.

(c) By December 1, 2009 and December 1 of each year thereafter, the Administrator will record in the CAIR NO\textsubscript{X} source's compliance account the CAIR NO\textsubscript{X} allowances allocated for the CAIR NO\textsubscript{X} units at the source, as submitted by the permitting authority in accordance with §96.141(b), for the control period in the sixth year after the year of the applicable deadline for recordation under this paragraph.

(d) By December 1, 2009 and December 1 of each year thereafter, the Administrator will record in the CAIR NO\textsubscript{X} source's compliance account the CAIR NO\textsubscript{X} allowances allocated for the CAIR NO\textsubscript{X} units at the source, as submitted by the permitting authority or determined by the Administrator in accordance with §96.141(c), for the control period in the year of the applicable deadline for recordation under this paragraph.

(e) Serial numbers for allocated CAIR NO\textsubscript{X} allowances. When recording the allocation of CAIR NO\textsubscript{X} allowances for a CAIR NO\textsubscript{X} unit in a compliance account, the Administrator will assign each CAIR NO\textsubscript{X} allowance a unique identification number that will include digits identifying the year of the control period for which the CAIR NO\textsubscript{X} allowance is allocated.

§ 96.154 Compliance with CAIR NO\textsubscript{X} emissions limitation.

(a) Allowance transfer deadline. The CAIR NO\textsubscript{X} allowances are available to be deducted for compliance with a source's CAIR NO\textsubscript{X} emissions limitation for a control period in a given calendar year only if the CAIR NO\textsubscript{X} allowances:

(1) Were allocated for the control period in the year or a prior year; and

(2) Are held in the compliance account as of the allowance transfer deadline for the control period or are transferred into the compliance account by a CAIR NO\textsubscript{X} allowance transfer correctly submitted for recordation in a source's compliance account by the allowance transfer deadline for a control period.

(b) Deductions for compliance. Following the recordation, in accordance with §96.161 of CAIR NO\textsubscript{X} allowance transfers submitted for recordation in a source's compliance account by the allowance transfer deadline for a control period, the Administrator will deduct from the compliance account CAIR NO\textsubscript{X} allowances available under paragraph (a) of this section in order to determine whether the source meets the CAIR NO\textsubscript{X} emissions limitation for the control period, as follows:

(1) Until the amount of CAIR NO\textsubscript{X} allowances deducted equals the number of tons of total nitrogen oxides emissions, determined in accordance with subpart HH of this part, from all CAIR NO\textsubscript{X} units at the source for the control period; or

(2) If there are insufficient CAIR NO\textsubscript{X} allowances to complete the deductions in paragraph (b)(1) of this section, until no more CAIR NO\textsubscript{X} allowances available under paragraph (a) of this section remain in the compliance account.

(c)(1) Identification of CAIR NO\textsubscript{X} allowances by serial number. The CAIR authorized account representative for a source's compliance account may request that specific CAIR NO\textsubscript{X} allowances, identified by serial number, in the compliance account be deducted for emissions or excess emissions for a control period in accordance with paragraph (b) or (d) of the

EDITORIAL NOTE: At 71 FR 25384, Apr. 28, 2006, §96.153 was amended; however, the amendment could not be incorporated due to inaccurate amendatory instruction.

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this section. Such request shall be submitted to the Administrator by the allowance transfer deadline for the control period and include, in a format prescribed by the Administrator, the identification of the CAIR NO\textsubscript{X} source and the appropriate serial numbers.

(2) First-in, first-out. The Administrator will deduct CAIR NO\textsubscript{X} allowances under paragraph (b) or (d) of this section from the source’s compliance account, in the absence of an identification or in the case of a partial identification of CAIR NO\textsubscript{X} allowances by serial number under paragraph (c)(1) of this section, on a first-in, first-out (FIFO) accounting basis in the following order:

(i) Any CAIR NO\textsubscript{X} allowances that were allocated to the units at the source, in the order of recordation; and then

(ii) Any CAIR NO\textsubscript{X} allowances that were allocated to any entity and transferred and recorded in the compliance account pursuant to subpart GG of this part, in the order of recordation.

(d) Deductions for excess emissions. (1) After making the deductions for compliance under paragraph (b) of this section for a control period in a calendar year in which the CAIR NO\textsubscript{X} source has excess emissions, the Administrator will deduct from the source’s compliance account an amount of CAIR NO\textsubscript{X} allowances, allocated for the control period in the immediately following calendar year, equal to 3 times the number of tons of the source’s excess emissions.

(2) Any allowance deduction required under paragraph (d)(1) of this section shall not affect the liability of the owners and operators of the CAIR NO\textsubscript{X} source or the CAIR NO\textsubscript{X} units at the source for any fine, penalty, or assessment, or their obligation to comply with any other remedy, for the same violations, as ordered under the Clean Air Act or applicable State law.

(e) Recordation of deductions. The Administrator will record in the appropriate compliance account all deductions from such an account under paragraphs (b) and (d) of this section and subpart II.

(f) Administrator’s action on submissions. (1) The Administrator may review and conduct independent audits concerning any submission under the CAIR NO\textsubscript{X} Annual Trading Program and make appropriate adjustments of the information in the submissions.

(2) The Administrator may deduct CAIR NO\textsubscript{X} allowances from or transfer CAIR NO\textsubscript{X} allowances to a source’s compliance account based on the information in the submissions, as adjusted under paragraph (f)(1) of this section, and record such deductions and transfers.

[70 FR 25339, May 12, 2005, as amended at 71 FR 25384, Apr. 28, 2006]

§ 96.155 Banking.

(a) CAIR NO\textsubscript{X} allowances may be banked for future use or transfer in a compliance account or a general account in accordance with paragraph (b) of this section.

(b) Any CAIR NO\textsubscript{X} allowance that is held in a compliance account or a general account will remain in such account unless and until the CAIR NO\textsubscript{X} allowance is deducted or transferred under §96.154, §96.156, or subpart GG or II of this part.

[70 FR 25339, May 12, 2005, as amended at 71 FR 25384, Apr. 28, 2006]

§ 96.156 Account error.

The Administrator may, at his or her sole discretion and on his or her own motion, correct any error in any CAIR NO\textsubscript{X} Allowance Tracking System account. Within 10 business days of making such correction, the Administrator will notify the CAIR authorized account representative for the account.

§ 96.157 Closing of general accounts.

(a) The CAIR authorized account representative of a general account may submit to the Administrator a request to close the account, which shall include a correctly submitted allowance transfer under §§96.160 and 96.161 for any CAIR NO\textsubscript{X} allowances in the account to one or more other CAIR NO\textsubscript{X} Allowance Tracking System accounts.

(b) If a general account has no allowance transfers in or out of the account for a 12-month period or longer and does not contain any CAIR NO\textsubscript{X} allowances, the Administrator may notify...
the CAIR authorized account representative for the account that the account will be closed following 20 business days after the notice is sent. The account will be closed after the 20-day period unless, before the end of the 20-day period, the Administrator receives a correctly submitted transfer of CAIR NO\textsubscript{X} allowances into the account under §§96.160 and 96.161 or a statement submitted by the CAIR authorized account representative demonstrating to the satisfaction of the Administrator good cause as to why the account should not be closed.

§ 96.160 Submission of CAIR NO\textsubscript{X} allowance transfers.

A CAIR authorized account representative seeking recordation of a CAIR NO\textsubscript{X} allowance transfer shall submit the transfer to the Administrator. To be considered correctly submitted, the CAIR NO\textsubscript{X} allowance transfer shall include the following elements, in a format specified by the Administrator:

(a) The account numbers for both the transferor and transferee accounts;

(b) The serial number of each CAIR NO\textsubscript{X} allowance that is in the transferor account and is to be transferred; and

(c) The name and signature of the CAIR authorized account representative of the transferor account and the date signed.

§ 96.161 EPA recordation.

(a) Within 5 business days (except as provided in paragraph (b) of this section) of receiving a CAIR NO\textsubscript{X} allowance transfer, the Administrator will record a CAIR NO\textsubscript{X} allowance transfer by moving each CAIR NO\textsubscript{X} allowance from the transferor account to the transferee account as specified by the request, provided that:

(1) The transfer is correctly submitted under §96.160; and

(2) The transferor account includes each CAIR NO\textsubscript{X} allowance identified by serial number in the transfer.

(b) A CAIR NO\textsubscript{X} allowance transfer that is submitted for recordation after the allowance transfer deadline for a control period and that includes any CAIR NO\textsubscript{X} allowances allocated for any control period before such allowance transfer deadline will not be recorded until after the Administrator completes the deductions under §96.154 for the control period immediately before such allowance transfer deadline.

(c) Where a CAIR NO\textsubscript{X} allowance transfer submitted for recordation fails to meet the requirements of paragraph (a) of this section, the Administrator will not record such transfer.

§ 96.162 Notification.

(a) Notification of recordation. Within 5 business days of recordation of a CAIR NO\textsubscript{X} allowance transfer under §96.161, the Administrator will notify the CAIR authorized account representatives of both the transferor and transferee accounts.

(b) Notification of non-recordation. Within 10 business days of receipt of a CAIR NO\textsubscript{X} allowance transfer that fails to meet the requirements of §96.161(a), the Administrator will notify the CAIR authorized account representatives of both accounts subject to the transfer of:

(1) A decision not to record the transfer, and

(2) The reasons for such non-recordation.

(c) Nothing in this section shall preclude the submission of a CAIR NO\textsubscript{X} allowance transfer for recordation following notification of non-recordation.

Subpart HH—Monitoring and Reporting

Source: 70 FR 25339, May 12, 2005, unless otherwise noted.

§ 96.170 General requirements.

The owners and operators, and to the extent applicable, the CAIR designated representative, of a CAIR NO\textsubscript{X} unit, shall comply with the monitoring, recordkeeping, and reporting requirements as provided in this subpart and in subpart H of part 75 of this chapter.
For purposes of complying with such requirements, the definitions in §96.102 and in §72.2 of this chapter shall apply, and the terms “affected unit,” “designated representative,” and “continuous emission monitoring system” (or “CEMS”) in part 75 of this chapter shall be deemed to refer to the terms “CAIR NO\(_x\)X unit,” “CAIR designated representative,” and “continuous emission monitoring system” (or “CEMS”) respectively, as defined in §96.102. The owner or operator of a unit that is not a CAIR NO\(_x\)X unit but that is monitored under §75.72(b)(2)(ii) of this chapter shall comply with the same monitoring, recordkeeping, and reporting requirements as a CAIR NO\(_x\)X unit.

(a) Requirements for installation, certification, and data accounting. The owner or operator of each CAIR NO\(_x\) unit shall:

(1) Install all monitoring systems required under this subpart for monitoring NO\(_x\)X mass emissions and individual unit heat input (including all systems required to monitor NO\(_x\)X emission rate, NO\(_x\)X concentration, stack gas moisture content, stack gas flow rate, CO\(_2\) or O\(_2\) concentration, and fuel flow rate, as applicable, in accordance with §§75.71 and 75.72 of this chapter);

(2) Successfully complete all certification tests required under §96.171 and meet all other requirements of this subpart and part 75 of this chapter applicable to the monitoring systems under paragraph (a)(1) of this section; and

(3) Record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section.

(b) Compliance deadlines. Except as provided in paragraph (c) of this section, the owner or operator shall meet the monitoring system certification and other requirements of paragraphs (a)(1) and (2) of this section on or before the following dates. The owner or operator shall record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section on and after the following dates.

(1) For the owner or operator of a CAIR NO\(_x\)X unit that commences commercial operation before July 1, 2007, by January 1, 2008.

(2) For the owner or operator of a CAIR NO\(_x\)X unit that commences commercial operation on or after July 1, 2007, by the later of the following dates:

   (i) January 1, 2008; or

   (ii) 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which the unit commences commercial operation.

(3) For the owner or operator of a CAIR NO\(_x\)X unit for which construction of a new stack or flue or installation of add-on NO\(_x\)X emission controls is completed after the applicable deadline under paragraph (b)(1), (2), (4), or (5) of this section, by 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which emissions first exit to the atmosphere through the new stack or flue or add-on NO\(_x\)X emissions controls.

(4) Notwithstanding the dates in paragraphs (b)(1) and (2) of this section, for the owner or operator of a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart II of this part, by the date specified in §96.184(b).

(5) Notwithstanding the dates in paragraphs (b)(1) and (2) of this section, for the owner or operator of a CAIR NO\(_x\)X opt-in unit under subpart II of this part, by the date on which the CAIR NO\(_x\)X opt-in unit enters the CAIR NO\(_x\)X Annual Trading Program as provided in §96.184(g).

(c) Reporting data. The owner or operator of a CAIR NO\(_x\)X unit that does not meet the applicable compliance date set forth in paragraph (b) of this section for any monitoring system under paragraph (a)(1) of this section shall, for each such monitoring system, determine, record, and report maximum potential (or, as appropriate, minimum potential) values for NO\(_x\)X concentration, NO\(_x\)X emission rate, stack gas flow rate, stack gas moisture content, fuel flow rate, and any other parameters required to determine NO\(_x\)X mass emissions and heat input in accordance with §75.31(b)(2) or (c)(3) of this chapter, section 2.4 of appendix D to part 75 of this chapter, or section 2.5 of appendix E to part 75 of this chapter, as applicable.
(d) **Prohibitions.** (1) No owner or operator of a CAIR NO\(_X\) unit shall use any alternative monitoring system, alternative reference method, or any other alternative to any requirement of this subpart without having obtained prior written approval in accordance with §96.175.

(2) No owner or operator of a CAIR NO\(_X\) unit shall operate the unit so as to discharge, or allow to be discharged, NO\(_X\) emissions to the atmosphere without accounting for all such emissions in accordance with the applicable provisions of this subpart and part 75 of this chapter.

(3) No owner or operator of a CAIR NO\(_X\) unit shall disrupt the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording NO\(_X\) mass emissions discharged into the atmosphere or heat input, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the applicable provisions of this subpart and part 75 of this chapter.

(4) No owner or operator of a CAIR NO\(_X\) unit shall retire or permanently discontinue use of the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording NO\(_X\) mass emissions discharged into the atmosphere or heat input, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the applicable provisions of this subpart and part 75 of this chapter.

(e) **Long-term cold storage.** The owner or operator of a CAIR NO\(_X\) unit is subject to the applicable provisions of part 75 of this chapter concerning units in long-term cold storage.

[70 FR 25339, May 12, 2005, as amended at 71 FR 25384, Apr. 28, 2006]

§ 96.171 Initial certification and recertification procedures.

(a) The owner or operator of a CAIR NO\(_X\) unit shall be exempt from the initial certification requirements of this section for a monitoring system under §96.170(a)(1) if the following conditions are met:

1. The monitoring system has been previously certified in accordance with part 75 of this chapter; and
2. The applicable quality-assurance and quality-control requirements of §75.21 of this chapter and appendix B, appendix D, and appendix E to part 75 of this chapter are fully met for the certified monitoring system described in paragraph (a)(1) of this section.

(b) The recertification provisions of this section shall apply to a monitoring system under §96.170(a)(1) exempt from initial certification requirements under paragraph (a) of this section.

(c) If the Administrator has previously approved a petition under §75.17(a) or (b) of this chapter for apportioning the NO\(_X\) emission rate measured in a common stack or a petition under §75.66 of this chapter for an alternative to a requirement in §75.12 or §75.17 of this chapter, the CAIR designated representative shall resubmit the petition to the Administrator under §96.175(a) to determine whether the approval applies under the CAIR NO\(_X\) Annual Trading Program.

(d) Except as provided in paragraph (a) of this section, the owner or operator of a CAIR NO\(_X\) unit shall comply with the following initial certification and recertification procedures for a continuous monitoring system (i.e., a continuous emission monitoring system and an excepted monitoring system under appendices D and E to part 75 of this chapter) under §96.170(a)(1).

1. The owner or operator of a unit that qualifies to use the low mass emissions excepted monitoring methodology under §75.19 of this chapter or that qualifies to use an alternative monitoring system under subpart E of part...
(1) Requirements for initial certification. The owner or operator shall ensure that each continuous monitoring system under §96.170(a)(1)(including the automated data acquisition and handling system) successfully completes all of the initial certification testing required under §75.20 of this chapter by the applicable deadline in §96.170(b). In addition, whenever the owner or operator installs a monitoring system to meet the requirements of this subpart in a location where no such monitoring system was previously installed, initial certification in accordance with §75.20 of this chapter is required.

(2) Requirements for recertification. Whenever the owner or operator makes a replacement, modification, or change in any certified continuous emission monitoring system under §96.170(a)(1) that may significantly affect the ability of the system to accurately measure or record NO\textsubscript{X} mass emissions or heat input rate or to meet the quality-assurance and quality-control requirements of §§75.21(a) of this chapter or appendix B to part 75 of this chapter, the owner or operator shall recertify the monitoring system in accordance with §75.20 of this chapter. A provisionally certified monitoring system may be used under the CAIR NO\textsubscript{X} Annual Trading Program for a period not to exceed 120 days after receipt by the permitting authority of the complete certification application for the monitoring system under paragraph (d)(3)(ii) of this section. Data measured and recorded by the provisionally certified monitoring system, in accordance with the requirements of part 75 of this chapter, will be considered valid quality-assured data (retroactive to the date and time of provisional certification), provided that the permitting authority does not invalidate the provisional certification by issuing a notice of disapproval within 120 days of the date of receipt of the complete certification application by the permitting authority.

(3) Approval process for initial certification and recertification. Paragraphs (d)(3)(i) through (iv) of this section apply to both initial certification and recertification of a continuous monitoring system under §96.170(a)(1). For recertifications, replace the words “certification” and “initial certification” with the word “recertification”, replace the word “certified” with the word “recertified,” and follow the procedures in §§75.20(b)(5) and (g)(7) of this chapter in lieu of the procedures in paragraph (d)(3)(v) of this section.

(i) Notification of certification. The CAIR designated representative shall submit to the permitting authority, the appropriate EPA Regional Office, and the Administrator written notice of the dates of certification testing, in accordance with §96.173.

(ii) Certification application. The CAIR designated representative shall submit to the permitting authority a certification application for each monitoring system. A complete certification application shall include the information specified in §75.63 of this chapter.

(iii) Provisional certification date. The provisional certification date for a monitoring system shall be determined in accordance with §75.20(a)(3) of this chapter. A provisionally certified monitoring system may be used under the CAIR NO\textsubscript{X} Annual Trading Program for a period not to exceed 120 days after receipt by the permitting authority of the complete certification application for the monitoring system under paragraph (d)(3)(ii) of this section. Data measured and recorded by the provisionally certified monitoring system, in accordance with the requirements of part 75 of this chapter, will be considered valid quality-assured data (retroactive to the date and time of provisional certification), provided that the permitting authority does not invalidate the provisional certification by issuing a notice of disapproval within 120 days of the date of receipt of the complete certification application by the permitting authority.

(iv) Certification application approval process. The permitting authority will issue a written notice of approval or disapproval of the certification application to the owner or operator within
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120 days of receipt of the complete certification application under paragraph (d)(3)(ii) of this section. In the event the permitting authority does not issue such a notice within such 120-day period, each monitoring system that meets the applicable performance requirements of part 75 of this chapter and is included in the certification application will be deemed certified for use under the CAIR NO\textsubscript{X} Annual Trading Program.

(A) Approval notice. If the certification application is complete and shows that each monitoring system meets the applicable performance requirements of part 75 of this chapter, then the permitting authority will issue a written notice of approval of the certification application within 120 days of receipt.

(B) Incomplete application notice. If the certification application is not complete, then the permitting authority will issue a written notice of incompleteness that sets a reasonable date by which the CAIR designated representative must submit the additional information required to complete the certification application. If the CAIR designated representative does not comply with the notice of incompleteness by the specified date, then the permitting authority may issue a notice of disapproval under paragraph (d)(3)(iv)(C) of this section. The 120-day review period shall not begin before receipt of a complete certification application.

(C) Disapproval notice. If the certification application shows that any monitoring system does not meet the performance requirements of part 75 of this chapter or if the certification application is incomplete and the requirement for disapproval under paragraph (d)(3)(iv)(B) of this section is met, then the permitting authority will issue a written notice of disapproval of the certification application. Upon issuance of such notice of disapproval, the provisional certification is invalidated by the permitting authority and the data measured and recorded by each uncertified monitoring system shall not be considered valid quality-assured data beginning with the date and hour of provisional certification (as defined under §75.20(a)(3) of this chapter). The owner or operator shall follow the procedures for loss of certification in paragraph (d)(3)(v) of this section for each monitoring system that is disapproved for initial certification.

(D) Audit decertification. The permitting authority or, for a CAIR NO\textsubscript{X} opt-in unit or a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart II of this part, the Administrator may issue a notice of disapproval of the certification status of a monitor in accordance with §96.172(b).

(v) Procedures for loss of certification. If the permitting authority or the Administrator issues a notice of disapproval of a certification application under paragraph (d)(3)(iv)(C) of this section or a notice of disapproval of certification status under paragraph (d)(3)(iv)(D) of this section, then:

(A) The owner or operator shall substitute the following values, for each disapproved monitoring system, for each hour of unit operation during the period of invalid data specified under §75.20(a)(4)(iii), §75.20(g)(7), or §75.21(e) of this chapter and continuing until the applicable date and hour specified under §75.20(a)(3)(i) or (g)(7) of this chapter:

(i) For a disapproved NO\textsubscript{X} emission rate (i.e., NO\textsubscript{X}-diluent) system, the maximum potential NO\textsubscript{X} emission rate, as defined in §72.2 of this chapter.

(ii) For a disapproved NO\textsubscript{X} pollutant concentration monitor and disapproved flow monitor, respectively, the maximum potential concentration of NO\textsubscript{X} and the maximum potential flow rate, as defined in sections 2.1.2.1 and 2.1.4.1 of appendix A to part 75 of this chapter.

(iii) For a disapproved moisture monitoring system and disapproved diluent gas monitoring system, respectively, the minimum potential moisture percentage and either the maximum potential CO\textsubscript{2} concentration or the minimum potential O\textsubscript{2} concentration (as applicable), as defined in sections 2.1.5, 2.1.3.1, and 2.1.3.2 of appendix A to part 75 of this chapter.

(iv) For a disapproved fuel flowmeter system, the maximum potential fuel flow rate, as defined in section 2.4.2.1 of appendix D to part 75 of this chapter.
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(5) For a disapproved excepted NO\textsubscript{X} monitoring system under appendix E to part 75 of this chapter, the fuel-specific maximum potential NO\textsubscript{X} emission rate, as defined in §72.2 of this chapter.

(B) The CAIR designated representative shall submit a notification of certification retest dates and a new certification application in accordance with paragraphs (d)(3)(i) and (ii) of this section.

(C) The owner or operator shall repeat all certification tests or other requirements that were failed by the monitoring system, as indicated in the permitting authority's or the Administrator's notice of disapproval, no later than 30 unit operating days after the date of issuance of the notice of disapproval.

(e) Initial certification and recertification procedures for units using the low mass emission excepted methodology under §75.19 of this chapter. The owner or operator of a unit qualified to use the low mass emissions (LME) excepted methodology under §75.19 of this chapter shall meet the applicable certification and recertification requirements in §§75.19(a)(2) and 75.20(h) of this chapter. If the owner or operator of such a unit elects to certify a fuel flowmeter system for heat input determination, the owner or operator shall also meet the certification and recertification requirements in §75.20(g) of this chapter.

(f) Certification/recertification procedures for alternative monitoring systems. The CAIR designated representative of each unit for which the owner or operator intends to use an alternative monitoring system approved by the Administrator and, if applicable, the permitting authority under subpart E of part 75 of this chapter shall comply with the applicable notification and application procedures of §75.20(f) of this chapter.

[70 FR 25339, May 12, 2005, as amended at 71 FR 25385, Apr. 28, 2006]

§ 96.172 Out of control periods.

(a) Whenever any monitoring system fails to meet the quality-assurance and quality-control requirements or data validation requirements of part 75 of this chapter, data shall be substituted using the applicable missing data procedures in subpart D or subpart H of, or appendix D or appendix E to, part 75 of this chapter.

(b) Audit decertification. Whenever both an audit of a monitoring system and a review of the initial certification or recertification application reveal that any monitoring system should not have been certified or recertified because it did not meet a particular performance specification or other requirement under §96.171 or the applicable provisions of part 75 of this chapter, both at the time of the initial certification or recertification application submission and at the time of the audit, the permitting authority or, for a CAIR NO\textsubscript{X} opt-in unit or a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart II of this part, the Administrator will issue a notice of disapproval of the certification status of such monitoring system. For the purposes of this paragraph, an audit shall be either a field audit or an audit of any information submitted to the permitting authority or the Administrator. By issuing the notice of disapproval, the permitting authority or the Administrator revokes prospectively the certification status of the monitoring system. The data measured and recorded by the monitoring system shall not be considered valid quality-assured data from the date of issuance of the notification of the revoked certification status until the date and time that the owner or operator completes subsequently approved initial certification or recertification tests for the monitoring system. The owner or operator shall follow the applicable initial certification or recertification procedures in §96.171 for each disapproved monitoring system.

§ 96.173 Notifications.

The CAIR designated representative for a CAIR NO\textsubscript{X} unit shall submit written notice to the permitting authority and the Administrator in accordance with §75.61 of this chapter.

[70 FR 25339, May 12, 2005, as amended at 71 FR 25385, Apr. 28, 2006]

§ 96.174 Recordkeeping and reporting.

(a) General provisions. The CAIR designated representative shall comply
with all recordkeeping and reporting requirements in this section, the applicable recordkeeping and reporting requirements under §75.73 of this chapter, and the requirements of §96.110(e)(1).

(b) Monitoring Plans. The owner or operator of a CAIR NOx unit shall comply with requirements of §75.73(c) and (e) of this chapter and, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart II of this part, §§96.183 and 96.184(a).

(c) Certification Applications. The CAIR designated representative shall submit an application to the permitting authority within 45 days after completing all initial certification or recertification tests required under §96.171, including the information required under §75.63 of this chapter.

(d) Quarterly reports. The CAIR designated representative shall submit quarterly reports, as follows:

(1) The CAIR designated representative shall report the NOx mass emissions data and heat input data for the CAIR NOx unit, in an electronic quarterly report in a format prescribed by the Administrator, for each calendar quarter beginning with:

   (i) For a unit that commences commercial operation before July 1, 2007, the calendar quarter covering January 1, 2008 through March 31, 2008;

   (ii) For a unit that commences commercial operation on or after July 1, 2007, the calendar quarter corresponding to the earlier of the date of provisional certification or the applicable deadline for initial certification under §96.170(b), unless that quarter is the third or fourth quarter of 2007, in which case reporting shall commence in the quarter covering January 1, 2008 through March 31, 2008;

   (iii) Notwithstanding paragraphs (d)(1)(i) and (ii) of this section, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart II of this part, the calendar quarter corresponding to the date specified in §96.184(b); and

   (iv) Notwithstanding paragraphs (d)(1)(i) and (ii) of this section, for a CAIR NOx opt-in unit under subpart II of this part, the calendar quarter corresponding to the date on which the CAIR NOx opt-in unit enters the CAIR NOx Annual Trading Program as provided in §96.184(g).

(2) The CAIR designated representative shall submit each quarterly report to the Administrator within 30 days following the end of the calendar quarter covered by the report. Quarterly reports shall be submitted in the manner specified in §75.73(f) of this chapter.

(3) For CAIR NOx units that are also subject to an Acid Rain emissions limitation or the CAIR NOx Ozone Season Trading Program, CAIR SO2 Trading Program, or Hg Budget Trading Program, quarterly reports shall include the applicable data and information required by subparts F through I of part 75 of this chapter as applicable, in addition to the NOx mass emission data, heat input data, and other information required by this subpart.

(e) Compliance certification. The CAIR designated representative shall submit to the Administrator a compliance certification (in a format prescribed by the Administrator) in support of each quarterly report based on reasonable inquiry of those persons with primary responsibility for ensuring that all of the unit’s emissions are correctly and fully monitored. The certification shall state that:

(1) The monitoring data submitted were recorded in accordance with the applicable requirements of this subpart and part 75 of this chapter, including the quality assurance procedures and specifications; and

(2) For a unit with add-on NOx emission controls and for all hours where NOx data are substituted in accordance with §75.34(a)(1) of this chapter, the add-on emission controls were operating within the range of parameters listed in the quality assurance/quality control program under appendix B to part 75 of this chapter and the substitute data values do not systematically underestimate NOx emissions.

[70 FR 25339, May 12, 2005, as amended at 71 FR 25385, Apr. 28, 2006]
§ 96.175 Petitions.

(a) Except as provided in paragraph (b)(2) of this section, the CAIR designated representative of a CAIR NO\textsubscript{X} unit that is subject to an Acid Rain emissions limitation may submit a petition under §75.66 of this chapter to the Administrator requesting approval to apply an alternative to any requirement of this subpart. Application of an alternative to any requirement of this subpart is in accordance with this subpart only to the extent that the petition is approved in writing by the Administrator, in consultation with the permitting authority.

(b)(1) The CAIR designated representative of a CAIR NO\textsubscript{X} unit that is not subject to an Acid Rain emissions limitation may submit a petition under §75.66 of this chapter to the permitting authority and the Administrator requesting approval to apply an alternative to any requirement of this subpart. Application of an alternative to any requirement of this subpart is in accordance with this subpart only to the extent that the petition is approved in writing by the permitting authority and the Administrator.

(2) The CAIR designated representative of a CAIR NO\textsubscript{X} unit that is subject to an Acid Rain emissions limitation may submit a petition under §75.66 of this chapter to the permitting authority and the Administrator requesting approval to apply an alternative to any requirement of this subpart concerning any additional continuous emission monitoring system required under §75.72 of this chapter. Application of an alternative to any such requirement is in accordance with this subpart only to the extent that the petition is approved in writing by both the permitting authority and the Administrator.

§ 96.180 Applicability.

A CAIR NO\textsubscript{X} opt-in unit must be a unit that:

(a) Is located in the State;

(b) Is not a CAIR NO\textsubscript{X} unit under §96.104 and is not covered by a retired unit exemption under §96.105 that is in effect;

(c) Is not covered by a retired unit exemption under §72.8 of this chapter that is in effect;

(d) Has or is required or qualified to have a title V operating permit or other federally enforceable permit; and

(e) Vents all of its emissions to a stack and can meet the monitoring, recordkeeping, and reporting requirements of subpart HH of this part.

§ 96.181 General.

(a) Except as otherwise provided in §§96.101 through 96.104, §§96.106 through 96.108, and subparts BB and CC and subparts FF through HH of this part, a CAIR NO\textsubscript{X} opt-in unit shall be treated as a CAIR NO\textsubscript{X} unit for purposes of applying such sections and subparts of this part.

(b) Solely for purposes of applying, as provided in this subpart, the requirements of subpart HH of this part to a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under this subpart, such unit shall be treated as a CAIR NO\textsubscript{X} unit before issuance of a CAIR opt-in permit for such unit.

§ 96.182 CAIR designated representative.

Any CAIR NO\textsubscript{X} opt-in unit, and any unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under this subpart, located at the same source as one or more CAIR NO\textsubscript{X} units shall have the same CAIR designated representative and alternate CAIR designated representative as such CAIR NO\textsubscript{X} units.

§ 96.183 Applying for CAIR opt-in permit.

(a) Applying for initial CAIR opt-in permit. The CAIR designated representative of a unit meeting the requirements for a CAIR NO\textsubscript{X} opt-in unit in §96.180 may apply for an initial CAIR opt-in permit at any time, except as provided under §96.186(f) and (g), and, in order to apply, must submit the following:

(1) A complete CAIR permit application under §96.122;
§ 96.184 Opt-in process.

The permitting authority will issue or deny a CAIR opt-in permit for a unit for which an initial application for a CAIR opt-in permit under § 96.183 is submitted in accordance with the following:

(a) Interim review of monitoring plan. The permitting authority and the Administrator will determine, on an interim basis, the sufficiency of the monitoring plan accompanying the initial application for a CAIR opt-in permit under § 96.183. A monitoring plan is sufficient, for purposes of interim review, if the plan appears to contain information demonstrating that the NO\textsubscript{X} emissions rate and heat input of the unit and all other applicable parameters are monitored and reported in accordance with subpart HH of this part. A determination of sufficiency shall not be construed as acceptance or approval of the monitoring plan.

(b) Monitoring and reporting. (1)(i) If the permitting authority and the Administrator determine that the monitoring plan is sufficient under paragraph (a) of this section, the owner or operator shall monitor and report the NO\textsubscript{X} emissions rate and the heat input of the unit and all other applicable parameters, in accordance with subpart HH of this part, starting on the date of certification of the appropriate monitoring systems under subpart HH of this part and continuing until a CAIR opt-in permit is denied under § 96.184(f) or, if a CAIR opt-in permit is issued, the date and time when the unit is withdrawn from the CAIR NO\textsubscript{X} Annual Trading Program in accordance with § 96.186.

(ii) The monitoring and reporting under paragraph (b)(1)(i) of this section shall include the entire control period immediately before the date on which the unit enters the CAIR NO\textsubscript{X} Annual Trading Program under § 96.184(g), during which period monitoring system

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(2) A certification, in a format specified by the permitting authority, that the unit:

(i) Is not a CAIR NO\textsubscript{X} unit under § 96.104 and is not covered by a retired unit exemption under § 96.105 that is in effect;

(ii) Is not covered by a retired unit exemption under § 72.8 of this chapter that is in effect;

(iii) Vents all of its emissions to a stack, and

(iv) Has documented heat input for more than 876 hours during the 6 months immediately preceding submission of the CAIR permit application under § 96.122;

(3) A monitoring plan in accordance with subpart HH of this part;

(4) A complete certificate of representation under § 96.113 consistent with § 96.182, if no CAIR designated representative has been previously designated for the source that includes the unit; and

(5) A statement, in a format specified by the permitting authority, whether the CAIR designated representative for the CAIR NO\textsubscript{X} opt-in unit requests that the unit be allocated CAIR NO\textsubscript{X} allowances under § 96.188(b) or § 96.188(c) (subject to the conditions in §§ 96.188(h) and 96.186(g)). If allocation under § 96.188(c) is requested, this statement shall include a statement that the owners and operators of the unit intend to repower the unit before January 1, 2015 and that they will provide, upon request, documentation demonstrating such intent.

(70 FR 25339, May 12, 2005, as amended at 71 FR 25385, Apr. 28, 2006)
availability must not be less than 90 percent under subpart HH of this part and the unit must be in full compliance with any applicable State or Federal emissions or emissions-related requirements.

(2) To the extent the NOx emissions rate and the heat input of the unit are monitored and reported in accordance with subpart HH of this part for one or more control periods, in addition to the control period under paragraph (b)(1)(ii) of this section, during which control periods monitoring system availability is not less than 90 percent under subpart HH of this part and the unit is in full compliance with any applicable State or Federal emissions or emissions-related requirements and which control periods begin not more than 3 years before the unit enters the CAIR NOx Annual Trading Program under §96.184(g), such information shall be used as provided in paragraphs (c) and (d) of this section.

(c) Baseline heat input. The unit’s baseline heat input shall equal:

(1) If the unit’s NOx emissions rate and heat input are monitored and reported for only one control period, in accordance with paragraph (b)(1) of this section, the unit’s total heat input (in mmBtu) for the control period; or

(2) If the unit’s NOx emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, the average of the amounts of the unit’s total heat input (in mmBtu) for the control period; or

(d) Baseline NOx emission rate. The unit’s baseline NOx emission rate shall equal:

(1) If the unit’s NOx emissions rate and heat input are monitored and reported for only one control period, in accordance with paragraph (b)(1) of this section, the unit’s NOx emissions rate (in lb/mmBtu) for the control period;

(2) If the unit’s NOx emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, and the unit does not have add-on NOx emission controls during any such control periods, the average of the amounts of the unit’s NOx emissions rate (in lb/mmBtu) for the control periods under paragraphs (b)(1)(ii) and (2) of this section; or

(3) If the unit’s NOx emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, and the unit has add-on NOx emission controls during any such control periods, the average of the amounts of the unit’s NOx emissions rate (in lb/mmBtu) for such control periods during which the unit has add-on NOx emission controls.

(e) Issuance of CAIR opt-in permit. After calculating the baseline heat input and the baseline NOx emissions rate for the unit under paragraphs (c) and (d) of this section and if the permitting authority determines that the CAIR designated representative shows that the unit meets the requirements for a CAIR NOx opt-in unit in §96.180 and meets the elements certified in §96.183(a)(2), the permitting authority will issue a CAIR opt-in permit. The permitting authority will provide a copy of the CAIR opt-in permit to the Administrator, who will then establish a compliance account for the source that includes the CAIR NOx opt-in unit unless the source already has a compliance account.

(f) Issuance of denial of CAIR opt-in permit. Notwithstanding paragraphs (a) through (e) of this section, if at any time before issuance of a CAIR opt-in permit for the unit, the permitting authority determines that the CAIR designated representative fails to show that the unit meets the requirements for a CAIR NOx opt-in unit in §96.180 or meets the elements certified in §96.183(a)(2), the permitting authority will issue a denial of a CAIR opt-in permit for the unit.

(g) Date of entry into CAIR NOx Annual Trading Program. A unit for which an initial CAIR opt-in permit is issued by the permitting authority shall become a CAIR NOx opt-in unit, and a CAIR NOx unit, as of the later of January 1, 2009 or January 1 of the first control period during which such CAIR opt-in permit is issued.

(h) Repowered CAIR NOx opt-in unit.

(1) If CAIR designated representative
requests, and the permitting authority issues a CAIR opt-in permit providing for, allocation to a CAIR NO\textsubscript{X} opt-in unit of CAIR NO\textsubscript{X} allowances under §96.188(c) and such unit is repowered after its date of entry into the CAIR NO\textsubscript{X} Annual Trading Program under paragraph (g) of this section, the repowered unit shall be treated as a CAIR NO\textsubscript{X} opt-in unit replacing the original CAIR NO\textsubscript{X} opt-in unit, as of the date of start-up of the repowered unit’s combustion chamber.

(2) Notwithstanding paragraphs (c) and (d) of this section, as of the date of start-up under paragraph (h)(1) of this section, the repowered unit shall be deemed to have the same date of commencement of operation, date of commencement of commercial operation, baseline heat input, and baseline NO\textsubscript{X} emission rate as the original CAIR NO\textsubscript{X} opt-in unit, and the original CAIR NO\textsubscript{X} opt-in unit shall no longer be treated as a CAIR NO\textsubscript{X} opt-in unit or a CAIR NO\textsubscript{X} unit.

§ 96.186 Withdrawal from CAIR NO\textsubscript{X} Annual Trading Program.

Except as provided under paragraph (g) of this section, a CAIR NO\textsubscript{X} opt-in unit may withdraw from the CAIR NO\textsubscript{X} Annual Trading Program, but only if the permitting authority issues a notification to the CAIR designated representative of the CAIR NO\textsubscript{X} opt-in unit of the acceptance of the withdrawal of the CAIR NO\textsubscript{X} opt-in unit in accordance with paragraph (d) of this section.

(a) Requesting withdrawal. In order to withdraw a CAIR CAIR NO\textsubscript{X} opt-in unit from the CAIR NO\textsubscript{X} Annual Trading Program, the CAIR designated representative of the CAIR NO\textsubscript{X} opt-in unit shall submit to the permitting authority a request to withdraw effective as of midnight of December 31 of a specified calendar year, which date must be at least 4 years after December 31 of the year of entry into the CAIR NO\textsubscript{X} Annual Trading Program under §96.184(g). The request must be submitted no later than 90 days before the requested effective date of withdrawal.

(b) Conditions for withdrawal. Before a CAIR NO\textsubscript{X} opt-in unit covered by a request under paragraph (a) of this section may withdraw from the CAIR NO\textsubscript{X} Annual Trading Program and the CAIR opt-in permit may be terminated under paragraph (e) of this section, the following conditions must be met:

(1) For the control period ending on the date on which the withdrawal is to be effective, the source that includes the CAIR NO\textsubscript{X} opt-in unit must meet the requirement to hold CAIR NO\textsubscript{X} allowances under §96.106(c) and cannot have any excess emissions.
(2) After the requirement for withdrawal under paragraph (b)(1) of this section is met, the Administrator will deduct from the compliance account of the source that includes the CAIR NOX opt-in unit CAIR NOX allowances equal in amount to and allocated for the same or a prior control period as any CAIR NOX allowances allocated to the CAIR NOX opt-in unit under §96.188 for any control period for which the withdrawal is to be effective. If there are no remaining CAIR NOX units at the source, the Administrator will close the compliance account, and the owners and operators of the CAIR NOX opt-in unit may submit a CAIR NOX allowance transfer for any remaining CAIR NOX allowances to another CAIR NOX Allowance Tracking System in accordance with subpart GG of this part.

(c) Notification. (1) After the requirements for withdrawal under paragraphs (a) and (b) of this section are met (including deduction of the full amount of CAIR NOX allowances required), the permitting authority will issue a notification to the CAIR designated representative of the CAIR NOX opt-in unit of the acceptance of the withdrawal of the CAIR NOX opt-in unit as of midnight on December 31 of the calendar year for which the withdrawal was requested.

(2) If the requirements for withdrawal under paragraphs (a) and (b) of this section are not met, the permitting authority will issue a notification to the CAIR designated representative of the CAIR NOX opt-in unit that the CAIR NOX opt-in unit’s request to withdraw is denied. Such CAIR NOX opt-in unit shall continue to be a CAIR NOX opt-in unit.

(d) Permit amendment. After the permitting authority issues a notification under paragraph (c)(1) of this section that the requirements for withdrawal have been met, the permitting authority will revise the CAIR permit covering the CAIR NOX opt-in unit to terminate the CAIR opt-in permit for such unit as of the effective date specified under paragraph (c)(1) of this section. The unit shall continue to be a CAIR NOX opt-in unit until the effective date of the termination and shall comply with all requirements under the CAIR NOX Annual Trading Program concerning any control periods for which the unit is a CAIR NOX opt-in unit, even if such requirements arise or must be complied with after the withdrawal takes effect.

(e) Reapplication upon failure to meet conditions of withdrawal. If the permitting authority denies the CAIR NOX opt-in unit’s request to withdraw, the CAIR designated representative may submit another request to withdraw in accordance with paragraphs (a) and (b) of this section.

(f) Ability to reapply to the CAIR NOX Annual Trading Program. Once a CAIR NOX opt-in unit withdraws from the CAIR NOX Annual Trading Program and its CAIR opt-in permit is terminated under this section, the CAIR designated representative may not submit another application for a CAIR opt-in permit under §96.183 for such CAIR NOX opt-in unit before the date that is 4 years after the date on which the withdrawal became effective. Such new application for a CAIR opt-in permit will be treated as an initial application for a CAIR opt-in permit under §96.184.

(g) Inability to withdraw. Notwithstanding paragraphs (a) through (f) of this section, a CAIR NOX opt-in unit shall not be eligible to withdraw from the CAIR NOX Annual Trading Program and its CAIR opt-in permit is terminated under this section, the CAIR designated representative may not submit another application for a CAIR opt-in permit under §96.183 for such CAIR NOX opt-in unit if the CAIR designated representative may not submit another request to withdraw in accordance with paragraphs (a) and (b) of this section.

§96.187 Change in regulatory status.

(a) Notification. If a CAIR NOX opt-in unit becomes a CAIR NOX unit under §96.104, then the CAIR designated representative shall notify in writing the permitting authority of such change in the CAIR NOX opt-in unit’s regulatory status, within 30 days of such change.

(b) Permitting authority’s and Administrator’s actions. (1) If a CAIR NOX opt-in unit becomes a CAIR NOX unit under §96.104, the permitting authority will revise the CAIR NOX opt-in unit’s CAIR opt-in permit to meet the requirements...
§ 96.188 CAIR NOX allowance allocations to CAIR NOX opt-in units.

(a) Timing requirements. (1) When the CAIR opt-in permit is issued under §96.184(e), the permitting authority will allocate CAIR NOX allowances to the CAIR NOX opt-in unit, and submit to the Administrator the allocation for the control period in which a CAIR NOX opt-in unit enters the CAIR NOX Annual Trading Program under §96.184(g), in accordance with paragraph (b) or (c) of this section.

(2) By no later than October 31 of the control period after the control period in which a CAIR NOX opt-in unit enters the CAIR NOX Annual Trading Program under §96.184(g) and October 31 of each year thereafter, the permitting authority will allocate CAIR NOX allowances to the CAIR NOX opt-in unit, and submit to the Administrator the allocation for the control period that includes such submission deadline and in which the unit is a CAIR NOX opt-in unit, in accordance with paragraph (b) or (c) of this section.

(b) Calculation of allocation. For each control period for which a CAIR NOX opt-in unit is to be allocated CAIR NOX allowances, the permitting authority will allocate in accordance with the following procedures:

(1) The heat input (in mmBtu) used for calculating the CAIR NOX allowance allocation will be the lesser of:

(i) The CAIR NOX opt-in unit’s baseline heat input determined under §96.184(c); or

(ii) The CAIR NOX opt-in unit’s heat input, as determined in accordance with subpart HH of this part, for the

of a CAIR permit under §96.123, and remove the CAIR opt-in permit provisions, as of the date on which the CAIR NOX opt-in unit becomes a CAIR NOX unit under §96.104.

(2)(i) The Administrator will deduct from the compliance account of the source that includes the CAIR NOX opt-in unit that becomes a CAIR NOX unit under §96.104, CAIR NOX allowances equal in amount to and allocated for the same or a prior control period as:

(A) The amount of CAIR NOX allowances otherwise allocated to the CAIR NOX opt-in unit (as a CAIR NOX unit) under §96.142 for the control period multiplied by;

(B) The ratio of the number of days, in the control period, starting with the date on which the CAIR NOX opt-in unit becomes a CAIR NOX unit under §96.104, divided by the total number of days in the control period; and

(C) Rounded to the nearest whole allowance as appropriate.


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immediately prior control period, except when the allocation is being calculated for the control period in which the CAIR NO\textsubscript{x} opt-in unit enters the CAIR NO\textsubscript{x} Annual Trading Program under §96.184(g).

(2) The NO\textsubscript{x} emission rate (in lb/mmBtu) used for calculating CAIR NO\textsubscript{x} allowance allocations will be the lesser of:

(i) The CAIR NO\textsubscript{x} opt-in unit’s baseline NO\textsubscript{x} emissions rate (in lb/mmBtu) determined under §96.184(d) and multiplied by 70 percent; or

(ii) The most stringent State or Federal NO\textsubscript{x} emissions limitation applicable to the CAIR NO\textsubscript{x} opt-in unit at any time during the control period for which CAIR NO\textsubscript{x} allowances are to be allocated.

(3) The permitting authority will allocate CAIR NO\textsubscript{x} allowances to the CAIR NO\textsubscript{x} opt-in unit in an amount equaling the heat input under paragraph (b)(1) of this section, multiplied by the NO\textsubscript{x} emission rate under paragraph (b)(2) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole allowance as appropriate.

(c) Notwithstanding paragraph (b) of this section and if the CAIR designated representative requests, and the permitting authority issues a CAIR opt-in permit (based on a demonstration of the intent to repower stated under §96.182(a)(5)) providing for, allocation to a CAIR NO\textsubscript{x} opt-in unit of CAIR NO\textsubscript{x} allowances under this paragraph (subject to the conditions in §§96.184(h) and 96.186(g)), the permitting authority will allocate to the CAIR NO\textsubscript{x} opt-in unit as follows:

(1) For each control period in 2009 through 2014 for which the CAIR NO\textsubscript{x} opt-in unit is to be allocated CAIR NO\textsubscript{x} allowances,

(i) The heat input (in mmBtu) used for calculating CAIR NO\textsubscript{x} allowance allocations will be determined as described in paragraph (b)(1) of this section.

(ii) The NO\textsubscript{x} emission rate (in lb/mmBtu) used for calculating CAIR NO\textsubscript{x} allowance allocations will be the lesser of:

(A) The CAIR NO\textsubscript{x} opt-in unit’s baseline NO\textsubscript{x} emissions rate (in lb/mmBtu) determined under §96.184(d); or

(B) The most stringent State or Federal NO\textsubscript{x} emissions limitation applicable to the CAIR NO\textsubscript{x} opt-in unit at any time during the control period in which the CAIR NO\textsubscript{x} opt-in unit enters the CAIR NO\textsubscript{x} Annual Trading Program under §96.184(g).

(iii) The permitting authority will allocate CAIR NO\textsubscript{x} allowances to the CAIR NO\textsubscript{x} opt-in unit in an amount equaling the heat input under paragraph (c)(1)(i) of this section, multiplied by the NO\textsubscript{x} emission rate under paragraph (c)(1)(ii) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole allowance as appropriate.

(2) For each control period in 2015 and thereafter for which the CAIR NO\textsubscript{x} opt-in unit is to be allocated CAIR NO\textsubscript{x} allowances,

(i) The heat input (in mmBtu) used for calculating the CAIR NO\textsubscript{x} allowance allocations will be determined as described in paragraph (b)(1) of this section.

(ii) The NO\textsubscript{x} emission rate (in lb/mmBtu) used for calculating the CAIR NO\textsubscript{x} allowance allocation will be the lesser of:

(A) 0.15 lb/mmBtu;

(B) The CAIR NO\textsubscript{x} opt-in unit’s baseline NO\textsubscript{x} emissions rate (in lb/mmBtu) determined under §96.184(d); or

(C) The most stringent State or Federal NO\textsubscript{x} emissions limitation applicable to the CAIR NO\textsubscript{x} opt-in unit at any time during the control period for which CAIR NO\textsubscript{x} allowances are to be allocated.

(iii) The permitting authority will allocate CAIR NO\textsubscript{x} allowances to the CAIR NO\textsubscript{x} opt-in unit in an amount equaling the heat input under paragraph (c)(2)(i) of this section, multiplied by the NO\textsubscript{x} emission rate under paragraph (c)(2)(ii) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole allowance as appropriate.

(d) Recordation. (1) The Administrator will record, in the compliance account of the source that includes the CAIR NO\textsubscript{x} opt-in unit, the CAIR NO\textsubscript{x} allowances allocated by the permitting authority to the CAIR NO\textsubscript{x} opt-in unit under paragraph (a)(1) of this section.

(2) By December 1 of the control period in which a CAIR NO\textsubscript{x} opt-in unit
enters the CAIR NOX Annual Trading Program under §96.184(g) and December 1 of each year thereafter, the Administrator will record, in the compliance account of the source that includes the CAIR NOX opt-in unit, the CAIR NOX allowances allocated by the permitting authority to the CAIR NOX opt-in unit under paragraph (a)(2) of this section.

[70 FR 25339, May 12, 2005, as amended at 71 FR 25385, Apr. 28, 2006]

Subparts JJ–ZZ [Reserved]

Subpart AAA—CAIR SO2 Trading Program General Provisions

Source: 70 FR 25362, May 12, 2005, unless otherwise noted.

§ 96.201 Purpose.

This subpart and subparts BBB through III establish the model rule comprising general provisions and the designated representative, permitting, allowance, monitoring, and opt-in provisions for the State Clean Air Interstate Rule (CAIR) SO2 Trading Program, under section 110 of the Clean Air Act and §51.124 of this chapter, as a means of mitigating interstate transport of fine particulates and sulfur dioxide. The owner or operator of a unit or a source shall comply with the requirements of this subpart and subparts BBB through III as a matter of federal law only if the State with jurisdiction over the unit and the source incorporates by reference such subparts or otherwise adopts the requirements of such subparts in accordance with §51.124(o)(1) or (2) of this chapter, the State submits to the Administrator one or more revisions of the State implementation plan that include such adoption, and the Administrator approves such revisions.

Allocate or allocation means, with regard to CAIR SO2 allowances issued under the Acid Rain Program, the determination by the Administrator of the amount of such CAIR SO2 allowances to be initially credited to a CAIR SO2 unit or other entity and, with regard to CAIR SO2 allowances issued under provisions of a State implementation plan that are approved under §51.124(o)(1) or (2) or (r) of this chapter or §97.288 of this chapter, the determination by a permitting authority of the amount of such CAIR SO2 allowances to be initially credited to a CAIR SO2 unit or other entity.

Allowance transfer deadline means, for a control period, midnight of March 1 (if it is a business day), or midnight of the first business day thereafter (if March 1 is not a business day), immediately following the control period and is the deadline by which a CAIR SO2 allowance transfer must be submitted for recordation in a CAIR SO2 source’s compliance account in order to be used to meet the source’s CAIR SO2 emissions limitation for such control period in accordance with §96.254.

Alternate CAIR designated representative means, for a CAIR SO2 source and each CAIR SO2 unit at the source, the natural person who is authorized by the owners and operators of the source

§ 96.202 Definitions.

The terms used in this subpart and subparts BBB through III shall have the meanings set forth in this section as follows:

Account number means the identification number given by the Administrator to each CAIR SO2 Allowance Tracking System account.

Acid Rain emissions limitation means a limitation on emissions of sulfur dioxide or nitrogen oxides under the Acid Rain Program.

Acid Rain Program means a multi-state sulfur dioxide and nitrogen oxides air pollution control and emission reduction program established by the Administrator under Title IV of the CAA and parts 72 through 78 of this chapter.

Administrator means the Administrator of the United States Environmental Protection Agency or the Administrator’s duly authorized representative.

Allocate or allocation means, with regard to CAIR SO2 allowances issued under the Acid Rain Program, the determination by the Administrator of the amount of such CAIR SO2 allowances to be initially credited to a CAIR SO2 unit or other entity and, with regard to CAIR SO2 allowances issued under provisions of a State implementation plan that are approved under §51.124(o)(1) or (2) or (r) of this chapter or §97.288 of this chapter, the determination by a permitting authority of the amount of such CAIR SO2 allowances to be initially credited to a CAIR SO2 unit or other entity.

Allowance transfer deadline means, for a control period, midnight of March 1 (if it is a business day), or midnight of the first business day thereafter (if March 1 is not a business day), immediately following the control period and is the deadline by which a CAIR SO2 allowance transfer must be submitted for recordation in a CAIR SO2 source’s compliance account in order to be used to meet the source’s CAIR SO2 emissions limitation for such control period in accordance with §96.254.

Alternate CAIR designated representative means, for a CAIR SO2 source and each CAIR SO2 unit at the source, the natural person who is authorized by the owners and operators of the source
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and all such units at the source, in accordance with subparts BBB and III of this part, to act on behalf of the CAIR designated representative in matters pertaining to the CAIR SO₂ Trading Program. If the CAIR SO₂ source is also a CAIR NOₓ source, then this natural person shall be the same person as the alternate CAIR designated representative under the CAIR NOₓ Annual Trading Program. If the CAIR SO₂ source is also a CAIR NOₓ Ozone Season source, then this natural person shall be the same person as the alternate CAIR designated representative under the CAIR NOₓ Ozone Season Trading Program. If the CAIR SO₂ source is also subject to the Acid Rain Program, then this natural person shall be the same person as the alternate CAIR designated representative under the Acid Rain Program. If the CAIR SO₂ source is also subject to the Hg Budget Trading Program, then this natural person shall be the same person as the alternate Hg designated representative under the Hg Budget Trading Program.

Automated data acquisition and handling system or DAHS means that component of the continuous emission monitoring system, or other emissions monitoring system approved for use under subpart HHH of this part, designed to interpret and convert individual output signals from pollutant concentration monitors, flow monitors, diluent gas monitors, and other component parts of the monitoring system to produce a continuous record of the measured parameters in the measurement units required by subpart HHH of this part.

Biomass means—

(1) Any organic material grown for the purpose of being converted to energy;

(2) Any organic byproduct of agriculture that can be converted into energy; or

(3) Any material that can be converted into energy and is nonmerchantable for other purposes, that is segregated from other nonmerchantable material, and that is;

(i) A forest-related organic resource, including mill residues, precommercial thinnings, slash, brush, or byproduct from conversion of trees to merchantable material; or

(ii) A wood material, including pallets, crates, dunnage, manufacturing and construction materials (other than pressure-treated, chemically-treated, or painted wood products), and landscape or right-of-way tree trimmings.

Boiler means an enclosed fossil- or other-fuel-fired combustion device used to produce heat and to transfer heat to recirculating water, steam, or other medium.

Bottoming-cycle cogeneration unit means a cogeneration unit in which the energy input to the unit is first used to produce useful thermal energy and at least some of the reject heat from the useful thermal energy application or process is then used for electricity production.

CAIR authorized account representative means, with regard to a general account, a responsible natural person who is authorized, in accordance with subparts BBB, FFF, and III of this part, to transfer and otherwise dispose of CAIR SO₂ allowances held in the general account and, with regard to a compliance account, the CAIR designated representative of the source.

CAIR designated representative means, for a CAIR SO₂ source and each CAIR SO₂ unit at the source, the natural person who is authorized by the owners and operators of the source and all such units at the source, in accordance with subparts BBB and III of this part, to represent and legally bind each owner and operator in matters pertaining to the CAIR SO₂ Trading Program. If the CAIR SO₂ source is also a CAIR NOₓ source, then this natural person shall be the same person as the CAIR designated representative under the CAIR NOₓ Annual Trading Program. If the CAIR SO₂ source is also subject to the Acid Rain Program, then this natural person shall be the same person as the designated representative under the Acid Rain Program. If the CAIR SO₂ source is also subject to the Hg Budget Trading Program, then this natural person...
shall be the same person as the Hg designated representative under the Hg Budget Trading Program.

CAIR NOX Annual Trading Program means a multi-state nitrogen oxides air pollution control and emission reduction program approved and administered by the Administrator in accordance with subparts AA through II of this part and §51.123(o)(1) or (2) of this chapter or established by the Administrator in accordance with subparts AA through II of part 97 of this chapter and §§51.123(p) and 52.35 of this chapter, as a means of mitigating interstate transport of fine particulates and nitrogen oxides.

CAIR NOX Ozone Season source means a source that includes one or more CAIR NOX Ozone Season units.

CAIR NOX Ozone Season Trading Program means a multi-state nitrogen oxides air pollution control and emission reduction program approved and administered by the Administrator in accordance with subparts AAAAA through IIII of this part and §51.123(aa)(1) or (2) (and (bb)(1)), (bb)(2), or (dd) of this chapter or established by the Administrator in accordance with subparts AA through II of part 97 of this chapter and §§51.123(p) and 52.35 of this chapter, as a means of mitigating interstate transport of ozone and nitrogen oxides.

CAIR NOX source means a source that is subject to the CAIR NOX Ozone Season Trading Program.

CAIR permit means the legally binding and federally enforceable written document, or portion of such document, issued by the permitting authority under subpart CCC of this part, including any permit revisions, specifying the CAIR SO2 Trading Program requirements applicable to a CAIR SO2 source, to each CAIR SO2 unit at the source, and to the owners and operators and the CAIR designated representative of the source and each such unit.

CAIR SO2 allowance means a limited authorization issued by the Administrator under the Acid Rain Program, or by a permitting authority under provisions of a State implementation plan that are approved under §51.124(o)(1) or (2) or (r) of this chapter or §97.288 of this chapter, by designating the last sentence of the definition as paragraph (4), and by revising in paragraph (4) the words “(Program or under the provisions of a State implementation plan that is approved under §51.124(o)(1) or (2) of this chapter” to read “(Program, provisions of a State implementation plan that are approved under §51.124(o)(1) or (2) or (r) of this chapter, or §97.288 of this chapter, to emit sulfur dioxide during the control period of the specified calendar year for which the authorization is allocated or of any calendar year thereafter under the CAIR SO2 Trading Program as follows:

1) For one CAIR SO2 allowance allocated for a control period in a year before 2010, one ton of sulfur dioxide, except as provided in §96.254(b);

2) For one CAIR SO2 allowance allocated for a control period in 2010 through 2014, 0.50 ton of sulfur dioxide, except as provided in §96.254(b); and

3) For one CAIR SO2 allowance allocated for a control period in 2015 or later, 0.35 ton of sulfur dioxide, except as provided in §96.254(b).

An authorization to emit sulfur dioxide that is not issued under the Acid Rain Program or under the provisions of a State implementation plan that is approved under §51.124(o)(1) or (2) of this chapter shall not be a CAIR SO2 allowance.

CAIR SO2 allowance deduction or deduct CAIR SO2 allowances means the permanent withdrawal of CAIR SO2 allowances by the Administrator from a compliance account, e.g., in order to account for a specified number of tons of total sulfur dioxide emissions from all CAIR SO2 units at a CAIR SO2 source for a control period, determined in accordance with subpart HHH of this part, or to account for excess emissions.

CAIR SO2 Allowance Tracking System means the system by which the Administrator records allocations, deductions, and transfers of CAIR SO2 allowances under the CAIR SO2 Trading Program. This is the same system as the Allowance Tracking System under §72.2 of this chapter by which the Administrator records allocations, deduction, and transfers of Acid Rain SO2 allowances under the Acid Rain Program.

CAIR SO2 Allowance Tracking System account means an account in the CAIR
SO\textsubscript{2} Allowance Tracking System established by the Administrator for purposes of recording the allocation, holding, transferring, or deducting of CAIR SO\textsubscript{2} allowances. Such allowances will be allocated, held, deducted, or transferred only as whole allowances.

CAIR SO\textsubscript{2} allowances held or hold CAIR SO\textsubscript{2} allowances means the CAIR SO\textsubscript{2} allowances recorded by the Administrator, or submitted to the Administrator for recordation, in accordance with subparts FFF, GGG, and III of this part or part 73 of this chapter, in a CAIR SO\textsubscript{2} Allowance Tracking System account.

CAIR SO\textsubscript{2} emissions limitation means, for a CAIR SO\textsubscript{2} source, the tonnage equivalent, in SO\textsubscript{2} emissions in a control period, of the CAIR SO\textsubscript{2} allowances available for deduction for the source under §96.254(a) and (b) for the control period.

CAIR SO\textsubscript{2} source means a source that includes one or more CAIR SO\textsubscript{2} units.

CAIR SO\textsubscript{2} Trading Program means a multi-state sulfur dioxide air pollution control and emission reduction program approved and administered by the Administrator in accordance with subparts AAA through III of this part and §51.124(o)(1) or (2) of this chapter or established by the Administrator in accordance with subparts AAA through III of part 97 of this chapter and §§51.124(r) and 52.36 of this chapter, as a means of mitigating interstate transport of fine particulates and sulfur dioxide.

CAIR SO\textsubscript{2} unit means a unit that is subject to the CAIR SO\textsubscript{2} Trading Program under §96.204 and, except for purposes of §96.205, a CAIR SO\textsubscript{2} opt-in unit under subpart III of this part.

Clean Air Act or CAA means the Clean Air Act, 42 U.S.C. 7401, et seq.

Coal means any solid fuel classified as anthracite, bituminous, subbituminous, or lignite.

Coal-derived fuel means any fuel (whether in a solid, liquid, or gaseous state) produced by the mechanical, thermal, or chemical processing of coal.

Coal-fired meanscombusting any amount of coal or coal-derived fuel, alone, or in combination with any amount of any other fuel.

Cogeneration unit means a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine:

(1) Having equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy; and

(2) Producing during the 12-month period starting on the date the unit first produces electricity and during any calendar year after the calendar year in which the unit first produces electricity—

(i) For a topping-cycle cogeneration unit,

(A) Useful thermal energy not less than 5 percent of total energy output; and

(B) Useful power that, when added to one-half of useful thermal energy produced, is not less than 42.5 percent of total energy input, if useful thermal energy produced is 15 percent or more of total energy output, or not less than 45 percent of total energy input, if useful thermal energy produced is less than 15 percent of total energy output.

(ii) For a bottoming-cycle cogeneration unit, useful power not less than 45 percent of total energy input;

(3) Provided that the total energy input under paragraphs (2)(i)(B) and (2)(ii) of this definition shall equal the unit’s total energy input from all fuel except biomass if the unit is a boiler.

Combustion turbine means:

(1) An enclosed device comprising a compressor, a combustor, and a turbine and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine; and

(2) If the enclosed device under paragraph (1) of this definition is combined cycle, any associated duct burner, heat recovery steam generator, and steam turbine.

Commence commercial operation means, with regard to a unit:

(1) To have begun to produce steam, gas, or other heated medium used to generate electricity for sale or use, including test generation, except as provided in §96.205 and §96.284(h).

(i) For a unit that is a CAIR SO\textsubscript{2} unit under §96.204 on the later of November 16, 1990 or the date the unit commences commercial operation as defined in
paragraph (1) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the date of commencement of commercial operation of the unit, which shall continue to be treated as the same unit.

(ii) For a unit that is a CAIR SO₂ unit under §96.204 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), such date shall remain the replaced unit’s date of commencement of commercial operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of commercial operation as defined in paragraph (1) or (2) of this definition as appropriate.

(2) Notwithstanding paragraph (1) of this definition and except as provided in §96.205, for a unit that is not a CAIR SO₂ unit under §96.204 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition, the unit’s date for commencement of commercial operation shall be the date on which the unit becomes a CAIR SO₂ unit under §96.204.

(i) For a unit with a date for commencement of commercial operation as defined in paragraph (2) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the date of commencement of commercial operation of the unit, which shall continue to be treated as the same unit.

(ii) For a unit with a date for commencement of commercial operation as defined in paragraph (2) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), such date shall remain the replaced unit’s date of commencement of commercial operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of commercial operation as defined in paragraph (1) or (2) of this definition as appropriate.

Commence operation means:

(1) To have begun any mechanical, chemical, or electronic process, including, with regard to a unit, start-up of a unit’s combustion chamber, except as provided in §96.284(h).

(2) For a unit that undergoes a physical change (other than replacement of the unit by a unit at the same source) after the date the unit commences operation as defined in paragraph (1) of this definition, such date shall remain the date of commencement of operation of the unit, which shall continue to be treated as the same unit.

(3) For a unit that is replaced by a unit at the same source (e.g., repowered) after the date the unit commences operation as defined in paragraph (1) of this definition, such date shall remain the replaced unit’s date of commencement of operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of operation as defined in paragraph (1), (2), or (3) of this definition as appropriate, except as provided in (96.284(h).

Compliance account means a CAIR SO₂ Allowance Tracking System account, established by the Administrator for a CAIR SO₂ source subject to an Acid Rain emissions limitations under §73.31(a) or (b) of this chapter or for any other CAIR SO₂ source under subpart FFF or III of this part, in which any CAIR SO₂ allowances for the CAIR SO₂ units at the source are initially recorded and in which are held any CAIR SO₂ allowances available for use for a control period in order to meet the source’s CAIR SO₂ emissions limitation in accordance with §96.254.

Continuous emission monitoring system or CEMS means the equipment required under subpart HHH of this part to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of sulfur dioxide emissions, stack gas volumetric flow rate, stack gas moisture content, and oxygen or carbon dioxide concentration (as applicable), in a manner consistent with part 75 of this chapter. The following systems are the principal types of continuous emission monitoring systems required under subpart HHH of this part:
(1) A flow monitoring system, consisting of a stack flow rate monitor and an automated data acquisition and handling system and providing a permanent, continuous record of stack gas volumetric flow rate, in standard cubic feet per hour (scfh);

(2) A sulfur dioxide monitoring system, consisting of a SO\textsubscript{2} pollutant concentration monitor and an automated data acquisition handling system and providing a permanent, continuous record of SO\textsubscript{2} emissions, in parts per million (ppm);

(3) A moisture monitoring system, as defined in §75.11(b)(2) of this chapter and providing a permanent, continuous record of the stack gas moisture content, in percent H\textsubscript{2}O;

(4) A carbon dioxide monitoring system, consisting of a CO\textsubscript{2} pollutant concentration monitor (or an oxygen monitor plus suitable mathematical equations from which the CO\textsubscript{2} concentration is derived) and an automated data acquisition and handling system and providing a permanent, continuous record of CO\textsubscript{2} emissions, in percent CO\textsubscript{2}; and

(5) An oxygen monitoring system, consisting of an O\textsubscript{2} concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of O\textsubscript{2} in percent O\textsubscript{2}.

Control period means the period beginning January 1 of a calendar year, except as provided in §96.206(c)(2), and ending on December 31 of the same year, inclusive.

Emissions means air pollutants exhausted from a unit or source into the atmosphere, as measured, recorded, and reported to the Administrator by the CAIR designated representative and as determined by the Administrator in accordance with subpart HHH of this part.

Excess emissions means any ton, or portion of a ton, of sulfur dioxide emitted by the CAIR SO\textsubscript{2} units at a CAIR SO\textsubscript{2} source during a control period that exceeds the CAIR SO\textsubscript{2} emissions limitation for the source, provided that any portion of a ton of excess emissions shall be treated as one ton of excess emissions.

Fossil fuel means natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material.

Fossil-fuel-fired means, with regard to a unit, combusting any amount of fossil fuel in any calendar year.

General account means a CAIR SO\textsubscript{2} Allowance Tracking System account, established under subpart FFF of this part, that is not a compliance account.

Generator means a device that produces electricity.

Heat input means, with regard to a specified period of time, the product (in mmBtu/time) of the gross calorific value of the fuel (in Btu/lb) divided by 1,000,000 Btu/mmBtu and multiplied by the fuel feed rate into a combustion device (in lb of fuel/time), as measured, recorded, and reported to the Administrator by the CAIR designated representative and determined by the Administrator in accordance with subpart HHH of this part and excluding the heat derived from preheated combustion air, recirculated flue gases, or exhaust from other sources.

Heat input rate means the amount of heat input (in mmBtu) divided by unit operating time (in hr) or, with regard to a specific fuel, the amount of heat input attributed to the fuel (in mmBtu) divided by the unit operating time (in hr) during which the unit combusts the fuel.

Hg Budget Trading Program means a multi-state Hg air pollution control and emission reduction program approved and administered by the Administrator in accordance with subpart HHHH of part 60 of this chapter and §60.24(h)(6), or established by the Administrator under section 111 of the Clean Air Act, as a means of reducing national Hg emissions.

Life-of-the-unit, firm power contractual arrangement means a unit participation power sales agreement under which a utility or industrial customer reserves, or is entitled to receive, a specified amount or percentage of nameplate capacity and associated energy generated by any specified unit and pays its proportional amount of such unit’s total costs, pursuant to a contract:

(1) For the life of the unit;

(2) For a cumulative term of no less than 30 years, including contracts that permit an election for early termination; or
(3) For a period no less than 25 years or 70 percent of the economic useful life of the unit determined as of the time the unit is built, with option rights to purchase or release some portion of the nameplate capacity and associated energy generated by the unit at the end of the period.

Maximum design heat input means the maximum amount of fuel per hour (in Btu/hr) that a unit is capable of combusting on a steady state basis as of the initial installation of the unit as specified by the manufacturer of the unit.

Monitoring system means any monitoring system that meets the requirements of subpart HHH of this part, including a continuous emissions monitoring system, an alternative monitoring system, or an excepted monitoring system under part 75 of this chapter.

Most stringent State or Federal SO\textsubscript{2} emissions limitation means, with regard to a unit, the lowest SO\textsubscript{2} emissions limitation (in terms of lb/mmBtu) that is applicable to the unit under State or Federal law, regardless of the averaging period to which the emissions limitation applies.

Nameplate capacity means, starting from the initial installation of a generator, the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady state basis and during continuous operation (when not restricted by seasonal or other deratings) as of such installation as specified by the manufacturer of the generator or, starting from the completion of any subsequent physical change in the generator resulting in an increase in the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady state basis and during continuous operation (when not restricted by seasonal or other deratings), such increased maximum amount as of such completion as specified by the person conducting the physical change.

Operator means any person who operates, controls, or supervises a CAIR SO\textsubscript{2} unit or a CAIR SO\textsubscript{2} source and shall include, but not be limited to, any holding company, utility system, or plant manager of such a unit or source.

Owner means any of the following persons:

1. With regard to a CAIR SO\textsubscript{2} source or a CAIR SO\textsubscript{2} unit at a source, respectively:
   - Any holder of any portion of the legal or equitable title in a CAIR SO\textsubscript{2} unit at the source or the CAIR SO\textsubscript{2} unit;
   - Any holder of a leasehold interest in a CAIR SO\textsubscript{2} unit at the source or the CAIR SO\textsubscript{2} unit;
   - Any purchaser of power from a CAIR SO\textsubscript{2} unit at the source or the CAIR SO\textsubscript{2} unit under a life-of-the-unit, firm power contractual arrangement; provided that, unless expressly provided for in a leasehold agreement, owner shall not include a passive lessor, or a person who has an equitable interest through such lessor, whose rental payments are not based (either directly or indirectly) on the revenues or income from such CAIR SO\textsubscript{2} unit; or

2. With regard to any general account, any person who has an ownership interest with respect to the CAIR SO\textsubscript{2} allowances held in the general account and who is subject to the binding agreement for the CAIR authorized account representative to represent the person’s ownership interest with respect to CAIR SO\textsubscript{2} allowances.

Permitting authority means the State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to issue or revise permits to meet the requirements of the CAIR SO\textsubscript{2} Trading Program or, if no such agency has been so authorized, the Administrator.

Potential electrical output capacity means 33 percent of a unit’s maximum design heat input, divided by 3,413 Btu/kWh, divided by 1,000 kWh/MWh, and multiplied by 8,760 hr/yr.

Receive or receipt of means, when referring to the permitting authority or the Administrator, to come into possession of a document, information, or correspondence (whether sent in hard copy or by authorized electronic transmission), as indicated in an official log, or by a notation made on the document, information, or correspondence.
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by the permitting authority or the Administrator in the regular course of business.

Recordation, record, or recorded means, with regard to CAIR SO₂ allowances, the movement of CAIR SO₂ allowances by the Administrator into or between CAIR SO₂ Allowance Tracking System accounts, for purposes of allocation, transfer, or deduction.

Reference method means any direct test method of sampling and analyzing for an air pollutant as specified in §75.22 of this chapter.

Replacement, replace, or replaced means, with regard to a unit, the demolishing of a unit, or the permanent shutdown and permanent disabling of a unit, and the construction of another unit (the replacement unit) to be used instead of the demolished or shutdown unit (the replaced unit).

Repowered means, with regard to a unit, replacement of a coal-fired boiler with one of the following coal-fired technologies at the same source as the coal-fired boiler:

(1) Atmospheric or pressurized fluidized bed combustion;

(2) Integrated gasification combined cycle;

(3) Magnetohydrodynamics;

(4) Direct and indirect coal-fired turbines;

(5) Integrated gasification fuel cells;

or

(6) As determined by the Administrator in consultation with the Secretary of Energy, a derivative of one or more of the technologies under paragraphs (1) through (5) of this definition and any other coal-fired technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of January 1, 2005.

Serial number means, for a CAIR SO₂ allowance, the unique identification number assigned to each CAIR SO₂ allowance by the Administrator.

Sequential use of energy means:

(1) For a topping-cycle cogeneration unit, the use of reject heat from useful thermal energy application or process in electricity production.

(2) For a bottoming-cycle cogeneration unit, the use of reject heat from useful thermal energy application or process in electricity production.

Solid waste incineration unit means a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine that is a “solid waste incineration unit” as defined in section 129(g)(1) of the Clean Air Act.

Source means all buildings, structures, or installations located in one or more contiguous or adjacent properties under common control of the same person or persons. For purposes of section 502(c) of the Clean Air Act, a “source,” including a “source” with multiple units, shall be considered a single “facility.”

State means one of the States or the District of Columbia that adopts the CAIR SO₂ Trading Program pursuant to §51.124(o)(1) or (2) of this chapter.

Submit or serve means to send or transmit a document, information, or correspondence to the person specified in accordance with the applicable regulation:

(1) In person;

(2) By United States Postal Service; or

(3) By other means of dispatch or transmission and delivery. Compliance with any “submission” or “service” deadline shall be determined by the date of dispatch, transmission, or mailing and not the date of receipt.

Title V operating permit means a permit issued under title V of the Clean Air Act and part 70 or part 71 of this chapter.

Title V operating permit regulations means the regulations that the Administrator has approved or issued as meeting the requirements of title V of the Clean Air Act and part 70 or 71 of this chapter.

Ton means 2,000 pounds. For the purpose of determining compliance with the CAIR SO₂ emissions limitation, total tons of sulfur dioxide emissions for a control period shall be calculated as the sum of all recorded hourly emissions (or the mass equivalent of the recorded hourly emission rates) in accordance with subpart HHH of this part, but with any remaining fraction of a ton equal to or greater than 0.50 tons deemed to equal one ton and any
remaining fraction of a ton less than 0.50 tons deemed to equal zero tons.

_Topping-cycle cogeneration unit_ means a cogeneration unit in which the energy input to the unit is first used to produce useful power, including electricity, and at least some of the reject heat from the electricity production is then used to provide useful thermal energy.

_Total energy input_ means, with regard to a cogeneration unit, total energy of all forms supplied to the cogeneration unit, excluding energy produced by the cogeneration unit itself. Each form of energy supplied shall be measured by the lower heating value of that form of energy calculated as follows:

\[
LHV = HHV - 10.55(W + 9H)
\]

Where:

- \(LHV\) = lower heating value of fuel in Btu/lb,
- \(HHV\) = higher heating value of fuel in Btu/lb,
- \(W\) = Weight % of moisture in fuel, and
- \(H\) = Weight % of hydrogen in fuel.

_Total energy output_ means, with regard to a cogeneration unit, the sum of useful power and useful thermal energy produced by the cogeneration unit.

_Unit_ means a stationary, fossil-fuel-fired boiler or combustion turbine or other stationary, fossil-fuel-fired combustion device.

_Unit operating day_ means a calendar day in which a unit combusts any fuel.

_Unit operating hour or hour of unit operation_ means an hour in which a unit combusts any fuel.

_Useful power_ means, with regard to a cogeneration unit, electricity or mechanical energy made available for use, excluding any such energy used in the power production process (which process includes, but is not limited to, any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls).

_Useful thermal energy_ means, with regard to a cogeneration unit, thermal energy that is:

1. Made available to an industrial or commercial process (not a power production process), excluding any heat contained in condensate return or makeup water;
2. Used in a space heating application (e.g., space heating or domestic hot water heating); or
3. Used in a space cooling application (i.e., thermal energy used by an absorption chiller).

_Utility power distribution system_ means the portion of an electricity grid owned or operated by a utility and dedicated to delivering electricity to customers.

§ 96.203 Measurements, abbreviations, and acronyms.

Measurements, abbreviations, and acronyms used in this subpart and subparts BBB through III are defined as follows:

- **Btu**—British thermal unit
- **CO₂**—carbon dioxide
- **H₂O**—water
- **Hg**—mercury
- **hr**—hour
- **kW**—kilowatt electrical
- **kWh**—kilowatt hour
- **lb**—pound
- **mmBtu**—million Btu
- **MWe**—megawatt electrical
- **MWh**—megawatt hour
- **NOx**—nitrogen oxides
- **O₂**—oxygen
- **ppm**—parts per million
- **scfh**—standard cubic feet per hour
- **SO₂**—sulfur dioxide
- **yr**—year

§ 96.204 Applicability.

(a) Except as provided in paragraph (b) of this section:

1. The following units in a State shall be CAIR SO₂ units, and any source that includes one or more such units shall be a CAIR SO₂ source, subject to the requirements of this subpart...
and subparts BBB through HHH of this part: any stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine serving at any time, since the later of November 15, 1990 or the start-up of the unit’s combustion chamber, a generator with nameplate capacity of more than 25 MWe producing electricity for sale.

(2) If a stationary boiler or stationary combustion turbine that, under paragraph (a)(1) of this section, is not a CAIR \(SO_2\) unit begins to combust fossil fuel or to serve a generator with nameplate capacity of more than 25 MWe producing electricity for sale, the unit shall become a CAIR \(SO_2\) unit as provided in paragraph (a)(1) of this section on the first date on which it both combusts fossil fuel and serves such generator.

(b) The units in a State that meet the requirements set forth in paragraph (b)(1)(i), (b)(2)(i), or (b)(2)(ii) of this section shall not be CAIR \(SO_2\) units:

(1)(i) Any unit that is a CAIR \(SO_2\) unit under paragraph (a)(1) or (2) of this section:

(A) Qualifying as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and continuing to qualify as a cogeneration unit; and

(B) Not serving at any time, since the later of November 15, 1990 or the start-up of the unit’s combustion chamber, a generator with nameplate capacity of more than 25 MWe supplying in any calendar year more than one-third of the unit’s potential electric output capacity or 219,000 MWh, whichever is greater, to any utility power distribution system for sale.

(ii) Any unit that is a CAIR \(SO_2\) unit commencing operation before January 1, 1985:

(A) Qualifying as a solid waste incineration unit; and

(B) With an average annual fuel consumption of non-fossil fuel for 1985–1987 exceeding 80 percent (on a Btu basis) and an average annual fuel consumption of non-fossil fuel for any 3 consecutive calendar years after 1990 exceeding 80 percent (on a Btu basis).

(ii) Any unit that is a CAIR \(SO_2\) unit under paragraph (a)(1) or (2) of this section commencing operation on or after January 1, 1985:

(A) Qualifying as a solid waste incineration unit; and

(B) With an average annual fuel consumption of non-fossil fuel for the first 3 calendar years of operation exceeding 80 percent (on a Btu basis) and an average annual fuel consumption of non-fossil fuel for any 3 consecutive calendar years after 1990 exceeding 80 percent (on a Btu basis).

(iii) If a unit qualifies as a solid waste incineration unit and meets the requirements of paragraph (b)(2)(i) or (ii) of this section for at least 3 consecutive calendar years, but subsequently no longer meets all such requirements, the unit shall become a CAIR \(SO_2\) unit starting on the earlier of January 1 after the first calendar year during which the unit ceased to qualify as a solid waste incineration unit or January 1 after the first 3 consecutive calendar years after 1990 for which the unit has an average annual fuel consumption of fossil fuel of 20 percent or more.

([71 FR 25387, Apr. 28, 2006])

§ 96.205 Retired unit exemption.

(a)(1) Any CAIR \(SO_2\) unit that is permanently retired and is not a CAIR \(SO_2\) opt-in unit under subpart III of this part shall be exempt from the CAIR \(SO_2\) Trading Program, except for the provisions of this section, §96.202, §96.203, §96.204, §96.206(c)(4) through (7), §96.207, §96.208, and subparts BBB, FFF, and GGG of this part.
(2) The exemption under paragraph (a)(1) of this section shall become effective the day on which the CAIR SO₂ unit is permanently retired. Within 30 days of the unit’s permanent retirement, the CAIR designated representative shall submit a statement to the permitting authority otherwise responsible for administering any CAIR permit for the unit and shall submit a copy of the statement to the Administrator. The statement shall state, in a format prescribed by the permitting authority, that the unit was permanently retired on a specific date and will comply with the requirements of paragraph (b) of this section.

(3) After receipt of the statement under paragraph (a)(2) of this section, the permitting authority will amend any permit under subpart CCC of this part covering the source at which the unit is located to add the provisions and requirements of the exemption under paragraphs (a)(1) and (b) of this section.

(b) Special provisions. (1) A unit exempt under paragraph (a) of this section shall not emit any sulfur dioxide, starting on the date that the exemption takes effect.

(2) For a period of 5 years from the date that the records are created, the owners and operators of a unit exempt under paragraph (a) of this section shall retain, at the source that includes the unit, records demonstrating that the unit is permanently retired. The 5-year period for keeping records may be extended for cause, at any time before the end of the period, in writing by the permitting authority or the Administrator. The owners and operators bear the burden of proof that the unit is permanently retired.

(3) The owners and operators and, to the extent applicable, the CAIR designated representative of a unit exempt under paragraph (a) of this section shall comply with the requirements of the CAIR SO₂ Trading Program concerning all periods for which the exemption is in effect, even if such requirements arise, or must be complied with, after the exemption takes effect.

(4) A unit exempt under paragraph (a) of this section and located at a source that is required, or but for this exemption would be required, to have a Title V operating permit shall not resume operation unless the CAIR designated representative of the source submits a complete CAIR permit application under §96.222 for the unit not less than 18 months (or such lesser time provided by the permitting authority) before the later of January 1, 2010 or the date on which the unit resumes operation.

(5) On the earlier of the following dates, a unit exempt under paragraph (a) of this section shall lose its exemption:

(i) The date on which the CAIR designated representative submits a CAIR permit application for the unit under paragraph (b)(4) of this section;

(ii) The date on which the CAIR designated representative is required under paragraph (b)(4) of this section to submit a CAIR permit application for the unit; or

(iii) The date on which the unit resumes operation, if the CAIR designated representative is not required to submit a CAIR permit application for the unit.

(6) For the purpose of applying monitoring, reporting, and recordkeeping requirements under subpart HHH of this part, a unit that loses its exemption under paragraph (a) of this section shall be treated as a unit that commences commercial operation on the first date on which the unit resumes operation.

[70 FR 25362, May 12, 2005, as amended at 71 FR 25388, Apr. 28, 2006]

§ 96.206 Standard requirements.

(a) Permit requirements. (1) The CAIR designated representative of each CAIR SO₂ source required to have a Title V operating permit and each CAIR SO₂ unit required to have a Title V operating permit at the source shall:

(i) Submit to the permitting authority a complete CAIR permit application under §96.222 in accordance with the deadlines specified in §96.221; and

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review a CAIR permit application and issue or deny a CAIR permit.

(2) The owners and operators of each CAIR SO₂ source required to have a
title V operating permit and each CAIR SO₂ unit required to have a title V operating permit at the source shall have a CAIR permit issued by the permitting authority under subpart CCC of this part for the source and operate the source and the unit in compliance with such CAIR permit.

(3) Except as provided in subpart III of this part, the owners and operators of a CAIR SO₂ source that is not otherwise required to have a title V operating permit and each CAIR SO₂ unit that is not otherwise required to have a title V operating permit are not required to submit a CAIR permit application, and to have a CAIR permit, under subpart CCC of this part for such CAIR SO₂ source and such CAIR SO₂ unit.

(b) Monitoring, reporting, and recordkeeping requirements. (1) The owners and operators, and the CAIR designated representative, of each CAIR SO₂ source and each CAIR SO₂ unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of subpart HHH of this part.

(2) The emissions measurements recorded and reported in accordance with subpart HHH of this part shall be used to determine compliance by each CAIR SO₂ source with the CAIR SO₂ emissions limitation under paragraph (c) of this section.

(c) Sulfur dioxide emission requirements. (1) As of the allowance transfer deadline for a control period, the owners and operators of each CAIR SO₂ source and each CAIR SO₂ unit at the source shall hold, in the source’s compliance account, a tonnage equivalent in CAIR SO₂ allowances available for compliance deductions for the control period, as determined in accordance with §96.254(a) and (b), not less than the tons of total sulfur dioxide emissions for the control period from all CAIR SO₂ units at the source, as determined in accordance with subpart HHH of this part.

(2) A CAIR SO₂ unit shall be subject to the requirements under paragraph (c)(1) of this section for the control period starting on the later of January 1, 2010 or the deadline for meeting the unit’s monitor certification requirements under §96.270(b)(1), (2), or (5) and for each control period thereafter.

(3) A CAIR SO₂ allowance shall not be deducted, for compliance with the requirements under paragraph (c)(1) of this section, for a control period in a calendar year before the year for which the CAIR SO₂ allowance was allocated.

(4) CAIR SO₂ allowances shall be held in, deducted from, or transferred into or among CAIR SO₂ Allowance Tracking System accounts in accordance with subparts FFF, GGG, and III of this part.

(5) A CAIR SO₂ allowance is a limited authorization to emit sulfur dioxide in accordance with the CAIR SO₂ Trading Program. No provision of the CAIR SO₂ Trading Program, the CAIR permit application, the CAIR permit, or an exemption under §96.205 and no provision of law shall be construed to limit the authority of the State or the United States to terminate or limit such authorization.

(6) A CAIR SO₂ allowance does not constitute a property right.

(7) Upon recordation by the Administrator under subpart FFF, GGG, or III of this part, every allocation, transfer, or deduction of a CAIR SO₂ allowance to or from a CAIR SO₂ source’s compliance account is incorporated automatically in any CAIR permit of the source.

(d) Excess emissions requirements— If a CAIR SO₂ source emits sulfur dioxide during any control period in excess of the CAIR SO₂ emissions limitation, then:

(1) The owners and operators of the source and each CAIR SO₂ unit at the source shall surrender the CAIR SO₂ allowances required for deduction under §96.254(d)(1) and pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act or applicable State law; and

(2) Each ton of such excess emissions and each day of such control period shall constitute a separate violation of this subpart, the Clean Air Act, and applicable State law.

(e) Recordkeeping and reporting requirements. (1) Unless otherwise provided, the owners and operators of the CAIR SO₂ source and each CAIR SO₂ unit at the source shall keep on site at
the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the permitting authority or the Administrator.

(i) The certificate of representation under §96.213 for the CAIR designated representative for the source and each CAIR SO\textsubscript{2} unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation under §96.213 changing the CAIR designated representative.

(ii) All emissions monitoring information, in accordance with subpart HHH of this part, provided that to the extent that subpart HHH of this part provides for a 3-year period for recordkeeping, the 3-year period shall apply.

(iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the CAIR SO\textsubscript{2} Trading Program.

(iv) Copies of all documents used to complete a CAIR permit application and any other submission under the CAIR SO\textsubscript{2} Trading Program or to demonstrate compliance with the requirements of the CAIR SO\textsubscript{2} Trading Program.

(2) The CAIR designated representative of a CAIR SO\textsubscript{2} source and each CAIR SO\textsubscript{2} unit at the source shall submit the reports required under the CAIR SO\textsubscript{2} Trading Program, including those under subpart HHH of this part.

(f) Liability. (1) Each CAIR SO\textsubscript{2} source and each CAIR SO\textsubscript{2} unit shall meet the requirements of the CAIR SO\textsubscript{2} Trading Program.

(2) The CAIR designated representative of a CAIR SO\textsubscript{2} source and each CAIR SO\textsubscript{2} unit at the source shall submit the reports required under the CAIR SO\textsubscript{2} Trading Program, including those under subpart HHH of this part.

(i) Liability. (1) Each CAIR SO\textsubscript{2} source and the CAIR designated representative of a CAIR SO\textsubscript{2} source shall also apply to the owners and operators of such source and of the CAIR SO\textsubscript{2} units at the source.

(3) Any provision of the CAIR SO\textsubscript{2} Trading Program that applies to a CAIR SO\textsubscript{2} source or the CAIR designated representative of a CAIR SO\textsubscript{2} source shall apply to the owners and operators of such unit.

(g) Effect on other authorities. No provision of the CAIR SO\textsubscript{2} Trading Program, a CAIR permit application, a CAIR permit, or an exemption under §96.205 shall be construed as exempting or excluding the owners and operators, and the CAIR designated representative, of a CAIR SO\textsubscript{2} source or CAIR SO\textsubscript{2} unit from compliance with any other provision of the applicable, approved State implementation plan, a federally enforceable permit, or the Clean Air Act.

§ 96.207 Computation of time.

(a) Unless otherwise stated, any time period scheduled, under the CAIR SO\textsubscript{2} Trading Program, to begin on the occurrence of an act or event shall begin on the day the act or event occurs.

(b) Unless otherwise stated, any time period scheduled, under the CAIR SO\textsubscript{2} Trading Program, to begin before the occurrence of an act or event shall be computed so that the period ends the day before the act or event occurs.

(c) Unless otherwise stated, if the final day of any time period, under the CAIR SO\textsubscript{2} Trading Program, falls on a weekend or a State or Federal holiday, the time period shall be extended to the next business day.

§ 96.208 Appeal procedures.

The appeal procedures for decisions of the Administrator under the CAIR SO\textsubscript{2} Trading Program are set forth in part 78 of this chapter.

Subpart BBB—CAIR Designated Representative for CAIR SO\textsubscript{2} Sources

§ 96.210 Authorization and responsibilities of CAIR designated representative.

(a) Except as provided under §96.211, each CAIR SO\textsubscript{2} source, including all CAIR SO\textsubscript{2} units at the source, shall have one and only one CAIR designated representative.
§ 96.211 Alternate CAIR designated representative.

(a) A certificate of representation under § 96.213 may designate one and only one alternate CAIR designated representative, who may act on behalf of the CAIR designated representative. The agreement by which the alternate CAIR designated representative is selected shall include a procedure for authorizing the alternate CAIR designated representative to act in lieu of the CAIR designated representative.

(b) Upon receipt by the Administrator of a complete certificate of representation under § 96.213, any representation, action, inaction, or submission by the alternate CAIR designated representative shall be deemed to be a representation, action, inaction, or submission by the CAIR designated representative.

(c) Except in this section and §§ 96.202, 96.210(a) and (d), 96.212, 96.213, 96.215, 96.231, and 96.292, whenever the term “CAIR designated representative” is used in subparts AAA through III of this part, the term shall be construed to include the CAIR designated representative or any alternate CAIR designated representative.

[70 FR 25362, May 12, 2005, as amended at 71 FR 25388, Apr. 28, 2006]
§ 96.212 Changing CAIR designated representative and alternate CAIR designated representative; changes in owners and operators.

(a) Changing CAIR designated representative. The CAIR designated representative may be changed at any time upon receipt by the Administrator of a superseding complete certificate of representation under §96.213. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CAIR designated representative before the time and date when the Administrator receives the superseding certificate of representation shall be binding on the new CAIR designated representative and the owners and operators of the CAIR SO₂ source and the CAIR SO₂ units at the source.

(b) Changing alternate CAIR designated representative. The alternate CAIR designated representative may be changed at any time upon receipt by the Administrator of a superseding complete certificate of representation under §96.213. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate CAIR designated representative before the time and date when the Administrator receives the superseding certificate of representation shall be binding on the new alternate CAIR designated representative and the owners and operators of the CAIR SO₂ source and the CAIR SO₂ units at the source.

(c) Changes in owners and operators.

(1) In the event an owner or operator of a CAIR SO₂ source or a CAIR SO₂ unit is not included in the list of owners and operators in the certificate of representation under §96.213, such owner or operator shall be deemed to be subject to and bound by the certificate of representation, the representations, actions, inactions, and submissions of the CAIR designated representative and any alternate CAIR designated representative of the source or unit, and the decisions and orders of the permitting authority, the Administrator, or a court, as if the owner or operator were included in such list.

(2) Within 30 days following any change in the owners and operators of a CAIR SO₂ source or a CAIR SO₂ unit, including the addition of a new owner or operator, the CAIR designated representative or any alternate CAIR designated representative shall submit a revision to the certificate of representation under §96.213 amending the list of owners and operators to include the change.

[70 FR 25362, May 12, 2005, as amended at 71 FR 25388, Apr. 28, 2006]

§ 96.213 Certificate of representation.

(a) A complete certificate of representation for a CAIR designated representative or an alternate CAIR designated representative shall include the following elements in a format prescribed by the Administrator:

(1) Identification of the CAIR SO₂ source, and each CAIR SO₂ unit at the source, for which the certificate of representation is submitted, including identification and nameplate capacity of each generator served by each such unit.

(2) The name, address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the CAIR designated representative and any alternate CAIR designated representative.

(3) A list of the owners and operators of the CAIR SO₂ source and of each CAIR SO₂ unit at the source.

(4) The following certification statements by the CAIR designated representative and any alternate CAIR designated representative—

(i) “I certify that I was selected as the CAIR designated representative or alternate CAIR designated representative, as applicable, by an agreement binding on the owners and operators of the source and each CAIR SO₂ unit at the source.”

(ii) “I certify that I have all the necessary authority to carry out my duties and responsibilities under the CAIR SO₂ Trading Program on behalf of the owners and operators of the source and each CAIR SO₂ unit at the source.”

(iii) “I certify that the owners and operators of the source and of each CAIR SO₂ unit at the source shall be bound by my representations, actions, inactions, or submissions.”
§ 96.215 Delegation by CAIR designated representative and alternate CAIR designated representative.

(a) A CAIR designated representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under this part.

(b) An alternate CAIR designated representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under this part.

(c) In order to delegate authority to make an electronic submission to the Administrator in accordance with paragraph (a) or (b) of this section, the CAIR designated representative or alternate CAIR designated representative, as appropriate, must submit to the Administrator a notice of delegation, in a format prescribed by the Administrator, that includes the following elements:

(1) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of such CAIR designated representative or alternate CAIR designated representative;
§ 96.220 General CAIR SO₂ Trading Program permit requirements.

(a) For each CAIR SO₂ source required to have a title V operating permit or required, under subpart III of this part, to have a title V operating permit or other federally enforceable permit, such permit shall include a CAIR permit administered by the permitting authority for the title V operating permit or the federally enforceable permit as applicable. The CAIR portion of the title V permit or other federally enforceable permit as applicable shall be administered in accordance with the permitting authority’s title V operating permits regulations promulgated under part 70 or 71 of this chapter or the permitting authority’s regulations for other federally enforceable permits as applicable, except as provided otherwise by §96.205, this subpart, and subpart III of this part.

(b) Each CAIR permit shall contain, with regard to the CAIR SO₂ source and the CAIR SO₂ units at the source covered by the CAIR permit, all applicable CAIR SO₂ Trading Program, CAIR NOₓ Annual Trading Program, and CAIR NOₓ Ozone Season Trading Program requirements and shall be a complete and separable portion of the title V operating permit or other federally enforceable permit under paragraph (a) of this section.

§ 96.221 Submission of CAIR permit applications.

(a) Duty to apply. The CAIR designated representative of any CAIR SO₂ source required to have a title V operating permit shall submit to the permitting authority a complete CAIR permit application under §96.222 for the source covering each CAIR SO₂ unit at

(2) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of each such natural person “referred to as an “agent”;

(3) For each such natural person, a list of the type or types of electronic submissions under paragraph (a) or (b) of this section for which authority is delegated to him or her; and

(4) The following certification statements by such CAIR designated representative or alternate CAIR designated representative:

(i) “I agree that any electronic submission to the Administrator that is by an agent identified in this notice of delegation and of a type listed for such agent in this notice of delegation and that is made when I am a CAIR designated representative or alternate CAIR designated representative, as appropriate, and before this notice of delegation is superseded by another notice of delegation under 40 CFR 96.215(d) shall be deemed to be an electronic submission by me.”

(ii) “Until this notice of delegation is superseded by another notice of delegation under 40 CFR 96.215(d), I agree to maintain an e-mail account and to notify the Administrator immediately of any change in my e-mail address unless all delegation of authority by me under 40 CFR 96.215 is terminated.”

(d) A notice of delegation submitted under paragraph (c) of this section shall be effective, with regard to the CAIR designated representative or alternate CAIR designated representative identified in such notice, upon receipt of such notice by the Administrator and until receipt by the Administrator of a superseding notice of delegation submitted by such CAIR designated representative or alternate CAIR designated representative, as appropriate. The superseding notice of delegation may replace any previously identified agent, add a new agent, or eliminate entirely any delegation of authority.

(e) Any electronic submission covered by the certification in paragraph (c)(4)(i) of this section and made in accordance with a notice of delegation effective under paragraph (d) of this section shall be deemed to be an electronic submission by the CAIR designated representative or alternate CAIR designated representative submitting such notice of delegation.

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§ 96.251 Establishment of accounts.

(a) Compliance accounts. Except as provided in §96.223(b), upon receipt of a complete certificate of representation under §96.213, the Administrator will establish a compliance account for the CAIR SO\textsubscript{2} source for which the certificate of representation was submitted, unless the source already has a compliance account.

(b) General accounts—(1) Application for general account. Any person may apply to open a general account for the purpose of holding and transferring CAIR SO\textsubscript{2} allowances. An application for a general account may designate one and only one CAIR authorized account representative and one and only one alternate CAIR authorized account representative who may act on behalf of the CAIR authorized account representative. The agreement by which the alternate CAIR authorized account representative is selected shall include a procedure for authorizing the alternate CAIR authorized account representative to act in lieu of the CAIR authorized account representative. (ii) A complete application for a general account shall be submitted to the Administrator and shall include the following elements in a format prescribed by the Administrator:

(A) Name, mailing address, e-mail address (if any), telephone number, and

the source at least 18 months (or such lesser time provided by the permitting authority) before the later of January 1, 2010 or the date on which the CAIR SO\textsubscript{2} unit commences commercial operation, except as provided in §96.283(a).

(b) Duty to Reapply. For a CAIR SO\textsubscript{2} source required to have a title V operating permit, the CAIR designated representative shall submit a complete CAIR permit application under §96.222 for the source covering each CAIR SO\textsubscript{2} unit at the source to renew the CAIR permit in accordance with the permitting authority’s title V operating permits regulations or the permitting authority’s regulations for other federally enforceable permits as applicable addressing permit revisions.

Subparts DDD—EEE [Reserved]

Subpart FFF—CAIR SO\textsubscript{2} Allowance Tracking System

SOURCE: 70 FR 25362, May 12, 2005, unless otherwise noted.

§ 96.250 [Reserved]

§ 96.251 Establishment of accounts.

(a) Compliance accounts. Except as provided in §96.223(b), the permitting authority will revise the CAIR permit, as necessary, in accordance with the permitting authority’s title V operating permits regulations or the permitting authority’s regulations for other federally enforceable permits as applicable addressing permit revisions.

[70 FR 25362, May 12, 2005, as amended at 71 FR 25388, Apr. 28, 2006]
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(A) The Administrator will establish a general account for the person or persons for whom the application is submitted.

(B) The CAIR authorized account representative and any alternate CAIR authorized account representative for the general account shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each person who has an ownership interest with respect to CAIR SO₂ allowances held in the general account.

(C) Any representation, action, inaction, or submission by any alternate CAIR authorized account representative shall be deemed to be a representation, action, inaction, or submission by the CAIR authorized account representative.

(ii) Each submission concerning the general account shall be submitted, signed, and certified by the CAIR authorized account representative or any alternate CAIR authorized account representative for the persons having an ownership interest with respect to CAIR SO₂ allowances held in the general account. Each such submission shall include the following certification statement by the CAIR authorized account representative: “I am authorized to make this submission on behalf of the persons having an ownership interest with respect to the CAIR SO₂ allowances held in the general account. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I...”
certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.

(iii) The Administrator will accept or act on a submission concerning the general account only if the submission has been made, signed, and certified in accordance with paragraph (b)(2)(ii) of this section.

(3) Changing CAIR authorized account representative and alternate CAIR authorized account representative; changes in persons with ownership interest. (i) The CAIR authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CAIR authorized account representative before the time and date when the Administrator receives the superseding application for a general account shall be binding on the new CAIR authorized account representative and the persons with an ownership interest with respect to the CAIR SO$_2$ allowances in the general account.

(ii) The alternate CAIR authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate CAIR authorized account representative before the time and date when the Administrator receives the superseding application for a general account shall be binding on the new alternate CAIR authorized account representative and the persons with an ownership interest with respect to the CAIR SO$_2$ allowances in the general account.

(iii)(A) In the event a person having an ownership interest with respect to CAIR SO$_2$ allowances in the general account is not included in the list of such persons in the application for a general account, such person shall be deemed to be subject to and bound by the application for a general account, the representation, actions, inactions, and submissions of the CAIR authorized account representative and any alternate CAIR authorized account representative of the account, and the decisions and orders of the Administrator or a court, as if the person were included in such list.

(B) Within 30 days following any change in the persons having an ownership interest with respect to CAIR SO$_2$ allowances in the general account, including the addition of a new person, the CAIR authorized account representative or any alternate CAIR authorized account representative shall submit a revision to the application for a general account amending the list of persons having an ownership interest with respect to the CAIR SO$_2$ allowances in the general account to include the change.

(4) Objections concerning CAIR authorized account representative and alternate CAIR authorized account representative. (i) Once a complete application for a general account under paragraph (b)(1) of this section has been submitted and received, the Administrator will rely on the application unless and until a superseding complete application for a general account under paragraph (b)(1) of this section is received by the Administrator.

(ii) Except as provided in paragraph (b)(3)(i) or (ii) of this section, no objection or other communication submitted to the Administrator concerning the authorization, or any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative for a general account shall affect any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative or the finality of any decision or order by the Administrator under the CAIR SO$_2$ Trading Program.
(iii) The Administrator will not adju-
dicate any private legal dispute con-
cerning the authorization or any rep-
resentation, action, inaction, or sub-
mission of the CAIR authorized ac-
count representative or any alternate 
CAIR authorized account representa-
tive for a general account, including 
private legal disputes concerning the 
proceeds of CAIR SO2 allowance trans-
fers.

(5) Delegation by CAIR authorized ac-
count representative and alternate CAIR 
authorized account representative. (i) A 
CAIR authorized account representa-
tive may delegate, to one or more nat-
ural persons, his or her authority to 
make an electronic submission to the 
Administrator provided for or required 
under subparts FFF and GGG of this 
part.

(ii) An alternate CAIR authorized ac-
count representative may delegate, to 
one or more natural persons, his or her 
authority to make an electronic sub-
mission to the Administrator provided 
for or required under subparts FFF and 
GGG of this part.

(iii) In order to delegate authority to 
make an electronic submission to the 
Administrator in accordance with 
paragraph (b)(5)(i) or (ii) of this sec-
tion, the CAIR authorized account rep-
resentative or alternate CAIR author-
ized account representative, as appro-
priate, must submit to the Adminis-
trator a notice of delegation, in a for-
mat prescribed by the Administrator, 
that includes the following elements:

(A) The name, address, e-mail ad-
dress, telephone number, and facsimile 
transmission number (if any) of such 
CAIR authorized account representa-
tive or alternate CAIR authorized ac-
count representative;

(B) The name, address, e-mail ad-
dress, telephone number, and, facsimile 
transmission number (if any) of each 
such natural person (referred to as an 
"agent");

(C) For each such natural person, a 
list of the type or types of electronic 
submissions under paragraph (b)(5)(i) 
or (ii) of this section for which author-
ity is delegated to him or her;

(D) The following certification state-
ment by such CAIR authorized account 
representative or alternate CAIR au-
thorized account representative: "I 
agree that any electronic submission 
to the Administrator that is by an 
agent identified in this notice of dele-
gation and of a type listed for such 
agent in this notice of delegation and 
that is made when I am a CAIR author-
ized account representative or alter-
nate CAIR authorized representative, 
as appropriate, and before this notice 
of delegation is superseded by another 
otice of delegation under 40 CFR 
96.251(b)(5)(iv) shall be deemed to be an 
electronic submission by me.";

(E) The following certification state-
ment by such CAIR authorized account 
representative or alternate CAIR au-
thorized account representative: "Until 
this notice of delegation is superseded 
by another notice of delegation under 
40 CFR 96.251(b)(5)(iv), I agree to main-
tain an e-mail account and to notify 
the Administrator immediately of any 
change in my e-mail address unless all 
delegation of authority by me under 40 
CFR 96.251(b)(5) is terminated.;

(iv) A notice of delegation submitted 
under paragraph (b)(5)(iii) of this sec-
tion shall be effective, with regard to 
the CAIR authorized account rep-
resentative or alternate CAIR author-
ized account representative identified 
in such notice, upon receipt of such no-
tice by the Administrator and until re-
ceipt by the Administrator of a super-
seding notice of delegation submitted 
by such CAIR authorized account rep-
resentative or alternate CAIR author-
ized account representative, as appro-
priate. The superseding notice of dele-
gation may replace any previously 
identified agent, add a new agent, or 
eliminate entirely any delegation of 
authority.

(v) Any electronic submission cov-
ered by the certification in paragraph 
(b)(5)(iii)(D) of this section and made in 
accordance with a notice of delegation 
effective under paragraph (b)(5)(iv) of 
this section shall be deemed to be an 
electronic submission by the CAIR des-
ignated representative or alternate 
CAIR designated representave sub-
mitting such notice of delegation.
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§ 96.254 Compliance with CAIR SO₂ emissions limitation.

(a) Allowance transfer deadline. The CAIR SO₂ allowances are available to be deducted for compliance with a source’s CAIR SO₂ emissions limitation for a control period in a given calendar year only if the CAIR SO₂ allowances:

(1) Were allocated for the control period in the year or a prior year; and

(2) Are held in the compliance account as of the allowance transfer deadline for the control period or are transferred into the compliance account by a CAIR SO₂ allowance transfer correctly submitted for recordation under §§96.260 and 96.261 by the allowance transfer deadline for the control period.

(b) Deductions for compliance. Following the recordation, in accordance with §96.261, of CAIR SO₂ allowance transfers submitted for recordation in a source’s compliance account by the allowance transfer deadline for a control period, the Administrator will deduct from the compliance account CAIR SO₂ allowances available under paragraph (a) of this section in order to determine whether the source meets...
the CAIR SO\textsubscript{2} emissions limitation for the control period as follows:

(1) For a CAIR SO\textsubscript{2} source subject to an Acid Rain emissions limitation, the Administrator will, in the following order:

(i) Deduct the amount of CAIR SO\textsubscript{2} allowances, available under paragraph (a) of this section and not issued by a permitting authority under §96.288, that is required under §§73.35(b) and (c) of this part. If there are sufficient CAIR SO\textsubscript{2} allowances to complete this deduction, the deduction will be treated as satisfying the requirements of §§73.35(b) and (c) of this chapter.

(ii) Deduct the amount of CAIR SO\textsubscript{2} allowances, not issued by a permitting authority under §96.288, that is required under §§73.35(d) and 77.5 of this part. If there are sufficient CAIR SO\textsubscript{2} allowances to complete this deduction, the deduction will be treated as satisfying the requirements of §§73.35(d) and 77.5 of this chapter.

(iii) Treating the CAIR SO\textsubscript{2} allowances deducted under paragraph (b)(1)(i) of this section as also being deducted under this paragraph (b)(1)(ii), deduct CAIR SO\textsubscript{2} allowances available under paragraph (a) of this section (including any issued by a permitting authority under §96.288) in order to determine whether the source meets the CAIR SO\textsubscript{2} emissions limitation for the control period, as follows:

(A) Until the tonnage equivalent of the CAIR SO\textsubscript{2} allowances deducted equals, or exceeds in accordance with paragraphs (c)(1) and (2) of this section, the number of tons of total sulfur dioxide emissions, determined in accordance with subpart HHH of this part, from all CAIR SO\textsubscript{2} units at the source for the control period; or

(B) If there are insufficient CAIR SO\textsubscript{2} allowances to complete the deductions in paragraph (b)(1)(ii)(A) of this section, until no more CAIR SO\textsubscript{2} allowances available under paragraph (a) of this section (including any issued by a permitting authority under §96.288) remain in the compliance account.

(ii) If there are insufficient CAIR SO\textsubscript{2} allowances to complete the deductions in paragraph (b)(2)(i) of this section, until no more CAIR SO\textsubscript{2} allowances available under paragraph (a) of this section (including any issued by a permitting authority under §96.288) remain in the compliance account.

(c)(1) Identification of CAIR SO\textsubscript{2} allowances by serial number. The CAIR authorized account representative for a source’s compliance account may request that specific CAIR SO\textsubscript{2} allowances, identified by serial number, in the compliance account be deducted for emissions or excess emissions for a control period in accordance with paragraph (b) or (d) of this section. Such request shall be submitted to the Administrator by the allowance transfer deadline for the control period and include, in a format prescribed by the Administrator, the identification of the CAIR SO\textsubscript{2} source and the appropriate serial numbers.

(2) First-in, first-out. The Administrator will deduct CAIR SO\textsubscript{2} allowances under paragraph (b) or (d) of this section from the source’s compliance account, in the absence of an identification or in the case of a partial identification of CAIR SO\textsubscript{2} allowances by serial number under paragraph (c)(1) of this section, on a first-in, first-out (FIFO) accounting basis in the following order:

(i) Any CAIR SO\textsubscript{2} allowances that were allocated to the units at the source for a control period before 2010, in the order of recordation;

(ii) Any CAIR SO\textsubscript{2} allowances that were allocated to any entity for a control period before 2010 and transferred and recorded in the compliance account pursuant to subpart GGG of this
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part or subpart D of part 73 of this chapter, in the order of recordation;

(iii) Any CAIR SO\textsubscript{2} allowances that were allocated to the units at the source for a control period during 2010 through 2014, in the order of recordation;

(iv) Any CAIR SO\textsubscript{2} allowances that were allocated to any entity for a control period during 2010 through 2014 and transferred and recorded in the compliance account pursuant to subpart GGG of this part or subpart D of part 73 of this chapter, in the order of recordation;

(v) Any CAIR SO\textsubscript{2} allowances that were allocated to the units at the source for a control period in 2015 or later, in the order of recordation; and

(vi) Any CAIR SO\textsubscript{2} allowances that were allocated to any entity for a control period in 2015 or later and transferred and recorded in the compliance account pursuant to subpart GGG of this part or subpart D of part 73 of this chapter, in the order of recordation.

(d) Deductions for excess emissions. (1) After making the deductions for compliance under paragraph (b) of this section for a control period in a calendar year in which the CAIR SO\textsubscript{2} source has excess emissions, the Administrator will deduct from the source’s compliance account the tonnage equivalent in CAIR SO\textsubscript{2} allowances, allocated for the control period in the immediately following calendar year (including any issued by a permitting authority under §96.288), equal to, or exceeding in accordance with paragraphs (c)(1) and (2) of this section, 3 times the following amount: the number of tons of the source’s excess emissions minus, if the source is subject to an Acid Rain emissions limitation, the amount of the CAIR SO\textsubscript{2} allowances required to be deducted under paragraph (b)(1)(ii) of this section.

(2) Any allowance deduction required under paragraph (d)(1) of this section shall not affect the liability of the owners and operators of the CAIR SO\textsubscript{2} source or the CAIR SO\textsubscript{2} units at the source for any fine, penalty, or assessment, or their obligation to comply with any other remedy, for the same violations, as ordered under the Clean Air Act or applicable State law.

(e) Recodification of deductions. The Administrator will record in the appropriate compliance account all deductions from such an account under paragraphs (b) and (d) of this section and subpart III.

(f) Administrator’s action on submissions. (1) The Administrator may review and conduct independent audits concerning any submission under the CAIR SO\textsubscript{2} Trading Program and make appropriate adjustments of the information in the submissions.

(2) The Administrator may deduct CAIR SO\textsubscript{2} allowances from or transfer CAIR SO\textsubscript{2} allowances to a source’s compliance account based on the information in the submissions, as adjusted under paragraph (f)(1) of this section, and record such deductions and transfers.

§ 96.255 Banking.

(a) CAIR SO\textsubscript{2} allowances may be banked for future use or transfer in a compliance account or a general account in accordance with paragraph (b) of this section.

(b) Any CAIR SO\textsubscript{2} allowance that is held in a compliance account or a general account will remain in such account unless and until the CAIR SO\textsubscript{2} allowance is deducted or transferred under §96.254, §96.256, or subpart GGG or III of this part.

§ 96.256 Account error.

The Administrator may, at his or her sole discretion and on his or her own motion, correct any error in any CAIR SO\textsubscript{2} Allowance Tracking System account. Within 10 business days of making such correction, the Administrator will notify the CAIR authorized account representative for the account.

§ 96.257 Closing of general accounts.

(a) The CAIR authorized account representative of a general account may submit to the Administrator a request to close the account, which shall include a correctly submitted allowance transfer under §§96.260 and 96.261 for
any CAIR SO₂ allowances in the account to one or more other CAIR SO₂ Allowance Tracking System accounts.

(b) If a general account has no allowance transfers in or out of the account for a 12-month period or longer and does not contain any CAIR SO₂ allowances, the Administrator may notify the CAIR authorized account representative for the account that the account will be closed following 20 business days after the notice is sent. The account will be closed after the 20-day period unless, before the end of the 20-day period, the Administrator receives a correctly submitted transfer of CAIR SO₂ allowances into the account under §§96.260 and 96.261 or a statement submitted by the CAIR authorized account representative demonstrating to the satisfaction of the Administrator good cause as to why the account should not be closed.

[70 FR 25362, May 12, 2005, as amended at 71 FR 25389, Apr. 28, 2006]

Subpart GGG—CAIR SO₂ Allowance Transfers

SOURCE: 70 FR 25362, May 12, 2005, unless otherwise noted.

§ 96.260 Submission of CAIR SO₂ allowance transfers.

(a) A CAIR authorized account representative seeking recordation of a CAIR SO₂ allowance transfer shall submit the transfer to the Administrator. To be considered correctly submitted, the CAIR SO₂ allowance transfer shall include the following elements, in a format specified by the Administrator:

(1) The account numbers of both the transferor and transferee accounts;

(2) The serial number of each CAIR SO₂ allowance that is in the transferor account and is to be transferred; and

(3) The name and signature of the CAIR authorized account representatives of the transferor and transferee accounts and the dates signed.

(b)(1) The CAIR authorized account representative for the transferee account can meet the requirements in paragraph (a)(3) of this section by submitting, in a format prescribed by the Administrator, a statement signed by the CAIR authorized account representative and identifying each account into which any transfer of allowances, submitted on or after the date on which the Administrator receives such statement, is authorized. Such authorization shall be binding on any CAIR authorized account representative for such account and shall apply to all transfers into the account that are submitted on or after such date of receipt, unless and until the Administrator receives a statement signed by the CAIR authorized account representative retracting the authorization for the account.

(2) The statement under paragraph (b)(1) of this section shall include the following: "By this signature I authorize any transfer of allowances into each account listed herein, except that I do not waive any remedies under State or Federal law to obtain correction of any erroneous transfers into such accounts. This authorization shall be binding on any CAIR authorized account representative for such account unless and until a statement signed by the CAIR authorized account representative retracting this authorization for the account is received by the Administrator."

§ 96.261 EPA recordation.

(a) Within 5 business days (except as necessary to perform a transfer in perpetuity of CAIR SO₂ allowances allocated to a CAIR SO₂ unit or as provided in paragraph (b) of this section) of receiving a CAIR SO₂ allowance transfer, the Administrator will record a CAIR SO₂ allowance transfer by moving each CAIR SO₂ allowance from the transferor account to the transferee account as specified by the request, provided that:

(1) The transfer is correctly submitted under §96.260;

(2) The transferee account includes each CAIR SO₂ allowance identified by serial number in the transfer; and

(3) The transfer is in accordance with the limitation on transfer under §74.42 of this chapter and §74.47(c) of this chapter, as applicable.

(b) A CAIR SO₂ allowance transfer that is submitted for recordation after the allowance transfer deadline for a control period and that includes any CAIR SO₂ allowances allocated for any
§ 96.270 General requirements.

The owners and operators, and to the extent applicable, the CAIR designated representative, of a CAIR SO₂ unit, shall comply with the monitoring, recordkeeping, and reporting requirements as provided in this subpart and in subparts F and G of part 75 of this chapter. For purposes of complying with such requirements, the definitions in §96.202 and in §72.2 of this chapter shall apply, and the terms “affected unit,” “designated representative,” and “continuous emission monitoring system” (or “CEMS”) in part 75 of this chapter shall be deemed to refer to the terms “CAIR SO₂ unit,” “CAIR designated representative,” and “continuous emission monitoring system” (or “CEMS”) respectively, as defined in §96.202. The owner or operator of a unit that is not a CAIR SO₂ unit but that is monitored under §75.16(b)(2) of this chapter shall comply with the same monitoring, recordkeeping, and reporting requirements as a CAIR SO₂ unit.

(a) Requirements for installation, certification, and data accounting. The owner or operator of each CAIR SO₂ unit shall:

(1) Install all monitoring systems required under this subpart for monitoring SO₂ mass emissions and individual unit heat input (including all systems required to monitor SO₂ concentration, stack gas moisture content, stack gas flow rate, CO₂ or O₂ concentration, and fuel flow rate, as applicable, in accordance with §§75.11 and 75.16 of this chapter);

(2) Successfully complete all certification tests required under §96.271 and meet all other requirements of this subpart and part 75 of this chapter applicable to the monitoring systems under paragraph (a)(1) of this section; and

(3) Record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section.

(b) Compliance deadlines. Except as provided in paragraph (e) of this section, the owner or operator shall meet the monitoring system certification and other requirements of paragraphs (a)(1) and (2) of this section on or before the following dates. The owner or operator shall record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section on and after the following dates.

(1) For the owner or operator of a CAIR SO₂ unit that commences commercial operation before July 1, 2008, by January 1, 2009.

(2) For the owner or operator of a CAIR SO₂ unit that commences commercial operation on or after July 1, 2008, by the later of the following dates:

(i) January 1, 2009; or
(ii) 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which the unit commences commercial operation.

(3) For the owner or operator of a CAIR SO\textsubscript{2} unit for which construction of a new stack or flue or installation of add-on SO\textsubscript{2} emission controls is completed after the applicable deadline under paragraph (b)(1), (2), (4), or (5) of this section, by 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which emissions first exit to the atmosphere through the new stack or flue or add-on SO\textsubscript{2} emissions controls.

(4) Notwithstanding the dates in paragraphs (b)(1) and (2) of this section, for the owner or operator of a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, by the date specified in §96.284(b).

(5) Notwithstanding the dates in paragraphs (b)(1) and (2) of this section, for the owner or operator of a CAIR SO\textsubscript{2} opt-in unit under subpart III of this part, by the date on which the CAIR SO\textsubscript{2} opt-in unit enters the CAIR SO\textsubscript{2} Trading Program as provided in §96.284(g).

(c) Reporting data. The owner or operator of a CAIR SO\textsubscript{2} unit that does not meet the applicable compliance date set forth in paragraph (b) of this section for any monitoring system under paragraph (a)(1) of this section shall, for each such monitoring system, determine, record, and report maximum potential (or, as appropriate, minimum potential) values for SO\textsubscript{2} concentration, stack gas flow rate, stack gas moisture content, fuel flow rate, and any other parameters required to determine SO\textsubscript{2} mass emissions and heat input in accordance with §75.31(b)(2) or (c)(3) of this chapter or section 2.4 of appendix D to part 75 of this chapter, as applicable.

(d) Prohibitions. (1) No owner or operator of a CAIR SO\textsubscript{2} unit shall use any alternative monitoring system, alternative reference method, or any other alternative to any requirement of this subpart without having obtained prior written approval in accordance with §96.275.

(2) No owner or operator of a CAIR SO\textsubscript{2} unit shall operate the unit so as to discharge, or allow to be discharged, SO\textsubscript{2} emissions to the atmosphere without accounting for all such emissions in accordance with the applicable provisions of this subpart and part 75 of this chapter.

(iii) No owner or operator of a CAIR SO\textsubscript{2} unit shall disrupt the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording SO\textsubscript{2} mass emissions discharged into the atmosphere or heat input, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the applicable provisions of this subpart and part 75 of this chapter.

(4) No owner or operator of a CAIR SO\textsubscript{2} unit shall retire or permanently discontinue use of the continuous emission monitoring system, any component thereof, or any other approved monitoring system under this subpart, except under any one of the following circumstances:

(i) During the period that the unit is covered by an exemption under §96.205 that is in effect;

(ii) The owner or operator is monitoring emissions from the unit with another certified monitoring system approved, in accordance with the applicable provisions of this subpart and part 75 of this chapter, by the permitting authority for use at that unit that provides emission data for the same pollutant or parameter as the retired or discontinued monitoring system; or

(iii) The CAIR designated representative submits notification of the date of certification testing of a replacement monitoring system for the retired or discontinued monitoring system in accordance with §96.271(d)(3)(i).

(e) Long-term cold storage. The owner or operator of a CAIR SO\textsubscript{2} unit is subject to the applicable provisions of part 75 of this chapter concerning units in long-term cold storage.

[70 FR 25362, May 12, 2005, as amended at 71 FR 25389, Apr. 28, 2006]
§ 96.271 Initial certification and recertification procedures.

(a) The owner or operator of a CAIR SO\textsubscript{2} unit shall be exempt from the initial certification requirements of this section for a monitoring system under §96.270(a)(1) if the following conditions are met:

(1) The monitoring system has been previously certified in accordance with part 75 of this chapter; and

(2) The applicable quality-assurance and quality-control requirements of §75.21 of this chapter and appendix B and appendix D to part 75 of this chapter are fully met for the certified monitoring system described in paragraph (a)(1) of this section.

(b) The recertification provisions of this section shall apply to a monitoring system under §96.270(a)(1) exempt from initial certification requirements under paragraph (a) of this section.

(c) [Reserved]

(d) Except as provided in paragraph (a) of this section, the owner or operator of a CAIR SO\textsubscript{2} unit shall comply with the following initial certification and recertification procedures, for a continuous monitoring system (i.e., a continuous emission monitoring system and an excepted monitoring system under appendix D to part 75 of this chapter) under §96.270(a)(1). The owner or operator of a unit that qualifies to use the low mass emissions excepted monitoring methodology under §75.19 of this chapter or that qualifies to use an alternative monitoring system in §96.270(a)(1) of this chapter or that qualifies to use an alternative monitoring system under part 75 of this chapter in §96.270(a)(1). The owner or operator of a unit that qualifies to use the low mass emissions excepted monitoring methodology under §75.19 of this chapter or that qualifies to use an alternative monitoring system in §96.270(a)(1) of this chapter or that qualifies to use an alternative monitoring system under part 75 of this chapter shall comply with the procedures in paragraphs (e) or (f) of this section respectively.

(1) Requirements for initial certification.

The owner or operator shall ensure that each continuous monitoring system under §96.270(a)(1) (including the automated data acquisition and handling system) successfully completes all of the initial certification testing required under §75.20 of this chapter by the applicable deadline in §96.270(b). In addition, whenever the owner or operator installs a monitoring system to meet the requirements of this subpart in a location where no such monitoring system was previously installed, initial certification in accordance with §75.20 of this chapter is required.

(2) Requirements for recertification.

Whenever the owner or operator makes a replacement, modification, or change in any certified continuous emission monitoring system under §96.270(a)(1) that may significantly affect the ability of the system to accurately measure or record SO\textsubscript{2} mass emissions or heat input rate or to meet the quality-assurance and quality-control requirements of §75.21 of this chapter or appendix B to part 75 of this chapter, the owner or operator shall recertify the monitoring system in accordance with §75.20(b) of this chapter. Furthermore, whenever the owner or operator makes a replacement, modification, or change to the flue gas handling system or the unit’s operation that may significantly change the stack flow or concentration profile, the owner or operator shall recertify each continuous emission monitoring system whose accuracy is potentially affected by the change, in accordance with §75.20(b) of this chapter. Examples of changes to a continuous emission monitoring system that require recertification include: replacement of the analyzer, complete replacement of an existing continuous emission monitoring system, or change in location or orientation of the sampling probe or site. Any fuel flowmeter system under §96.270(a)(1) is subject to the recertification requirements in §75.20(g)(6) of this chapter.

(3) Approval process for initial certification and recertification.

Paragraphs (d)(3)(i) through (iv) of this section apply to both initial certification and recertification of a continuous monitoring system under §96.270(a)(1). For recertifications, replace the words “certification” and “initial certification” with the word “recertification”, replace the word “certified” with the word “recertified,” and follow the procedures in §§75.20(b)(5) and (b)(7) of this chapter in lieu of the procedures in paragraph (d)(3)(v) of this section.

(i) Notification of certification.

The CAIR designated representative shall submit to the permitting authority, the appropriate EPA Regional Office, and the Administrator written notice of the dates of certification testing, in accordance with §96.273.
(ii) Certification application. The CAIR designated representative shall submit to the permitting authority a certification application for each monitoring system. A complete certification application shall include the information specified in §75.63 of this chapter.

(iii) Provisional certification date. The provisional certification date for a monitoring system shall be determined in accordance with §75.20(a)(3) of this chapter. A provisionally certified monitoring system may be used under the CAIR SO\textsubscript{2} Trading Program for a period not to exceed 120 days after receipt by the permitting authority of the complete certification application for the monitoring system under paragraph (d)(3)(ii) of this section. Data measured and recorded by the provisionally certified monitoring system, in accordance with the requirements of part 75 of this chapter, will be considered valid quality-assured data (retroactive to the date and time of provisional certification), provided that the permitting authority does not invalidate the provisional certification by issuing a notice of disapproval within 120 days of receipt of the complete certification application for the monitoring system under paragraph (d)(3)(ii) of this section.

(iv) Certification application approval process. The permitting authority will issue a written notice of approval or disapproval of the certification application to the owner or operator within 120 days of receipt of the complete certification application under paragraph (d)(3)(ii) of this section. In the event the permitting authority does not issue such a notice within such 120-day period, each monitoring system that meets the applicable performance requirements of part 75 of this chapter and is included in the certification application will be deemed certified for use under the CAIR SO\textsubscript{2} Trading Program.

(A) Approval notice. If the certification application is complete and shows that each monitoring system meets the applicable performance requirements of part 75 of this chapter, then the permitting authority will issue a written notice of approval of the certification application within 120 days of receipt.

(B) Incomplete application notice. If the certification application is not complete, then the permitting authority will issue a written notice of incompleteness that sets a reasonable date by which the CAIR designated representative must submit the additional information required to complete the certification application. If the CAIR designated representative does not comply with the notice of incompleteness by the specified date, then the permitting authority may issue a notice of disapproval under paragraph (d)(3)(iv)(C) of this section. The 120-day review period shall not begin before receipt of a complete certification application.

(C) Disapproval notice. If the certification application shows that any monitoring system does not meet the performance requirements of part 75 of this chapter or if the certification application is incomplete and the requirement for disapproval under paragraph (d)(3)(iv)(B) of this section is met, then the permitting authority will issue a written notice of disapproval of the certification application. Upon issuance of such notice of disapproval, the provisional certification is invalidated by the permitting authority and the data measured and recorded by each uncertified monitoring system shall not be considered valid quality-assured data beginning with the date and hour of provisional certification (as defined under §75.20(a)(3) of this chapter). The owner or operator shall follow the procedures for loss of certification in paragraph (d)(3)(v) of this section for each monitoring system that is disapproved for initial certification.

(D) Audit decertification. The permitting authority or, for a CAIR SO\textsubscript{2} opt-in unit or a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, the Administrator may issue a notice of disapproval of the certification status of a monitor in accordance with §96.272(b).

(v) Procedures for loss of certification. If the permitting authority or the Administrator issues a notice of disapproval of a certification application under paragraph (d)(3)(iv)(C) of this section.
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section or a notice of disapproval of certification status under paragraph (d)(3)(iv)(D) of this section, then:

(A) The owner or operator shall substitute the following values, for each disapproved monitoring system, for each hour of unit operation during the period of invalid data specified under §75.20(a)(4)(iii), §75.20(g)(7), or §75.21(e) of this chapter and continuing until the applicable date and hour specified under §75.20(a)(5)(i) or (g)(7) of this chapter:

(1) For a disapproved SO\textsubscript{2} pollutant concentration monitor and disapproved flow monitor, respectively, the maximum potential concentration of SO\textsubscript{2} and the maximum potential flow rate, as defined in sections 2.1.1.1 and 2.1.4.1 of appendix A to part 75 of this chapter.

(2) For a disapproved moisture monitoring system and disapproved diluent gas monitoring system, respectively, the minimum potential moisture percentage and either the maximum potential CO\textsubscript{2} concentration or the minimum potential O\textsubscript{2} concentration (as applicable), as defined in sections 2.1.5, 2.1.3.1, and 2.1.3.2 of appendix A to part 75 of this chapter.

(3) For a disapproved fuel flowmeter system, the maximum potential fuel flow rate, as defined in section 2.4.2.1 of appendix D to part 75 of this chapter.

(B) The CAIR designated representative shall submit a notification of certification retest dates and a new certification application in accordance with paragraphs (d)(3)(i) and (ii) of this section.

(C) The owner or operator shall repeat all certification tests or other requirements that were failed by the monitoring system, as indicated in the permitting authority’s or the Administrator’s notice of disapproval, no later than 30 unit operating days after the date of issuance of the notice of disapproval.

(e) Initial certification and recertification procedures for units using the low mass emission excepted methodology under §75.19 of this chapter. The owner or operator of a unit qualified to use the low mass emissions (LME) excepted methodology under §75.19 of this chapter shall meet the applicable certification and recertification requirements in §§75.19(a)(2) and 75.20(h) of this chapter. If the owner or operator of such a unit elects to certify a fuel flowmeter system for heat input determination, the owner or operator shall also meet the certification and recertification requirements in §75.20(g) of this chapter.

(f) Certification/recertification procedures for alternative monitoring systems. The CAIR designated representative of each unit for which the owner or operator intends to use an alternative monitoring system approved by the Administrator and, if applicable, the permitting authority under subpart E of part 75 of this chapter shall comply with the applicable notification and application procedures of §75.20(f) of this chapter.

§ 96.272 Out of control periods.

(a) Whenever any monitoring system fails to meet the quality-assurance and quality-control requirements or data validation requirements of part 75 of this chapter, data shall be substituted using the applicable missing data procedures in subpart D of or appendix D to part 75 of this chapter.

(b) Audit decertification. Whenever both an audit of a monitoring system and a review of the initial certification or recertification application reveal that any monitoring system should not have been certified or recertified because it did not meet a particular performance specification or other requirement under §96.271 or the applicable provisions of part 75 of this chapter, both at the time of the initial certification or recertification application submission and at the time of the audit, the permitting authority or, for a CAIR SO\textsubscript{2} opt-in unit or a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, the Administrator will issue a notice of disapproval of the certification status of such monitoring system. For the purposes of this paragraph, an audit shall be either a field audit or an audit of any information submitted to the permitting authority or the Administrator. By issuing the notice of disapproval, the permitting authority or
§ 96.273 Notifications.

The CAIR designated representative for a CAIR SO\(_2\) unit shall submit written notice to the permitting authority and the Administrator in accordance with §75.61 of this chapter.

[70 FR 25362, May 12, 2005, as amended at 71 FR 25390, Apr. 28, 2006]

§ 96.274 Recordkeeping and reporting.

(a) General provisions. The CAIR designated representative shall comply with all recordkeeping and reporting requirements in this section, the applicable recordkeeping and reporting requirements in subparts F and G of part 75 of this chapter, and the requirements of §96.210(e)(1).

(b) Monitoring plans. The owner or operator of a CAIR SO\(_2\) unit shall comply with requirements of §75.62 of this chapter and, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, the calendar quarter corresponding to the date specified in §96.284(b); and

(c) Certification applications. The CAIR designated representative shall submit an application to the permitting authority within 45 days after completing all initial certification or recertification tests required under §96.271, including the information required under §75.63 of this chapter.

(d) Quarterly reports. The CAIR designated representative shall submit quarterly reports, as follows:

(1) The CAIR designated representative shall report the SO\(_2\) mass emissions data and heat input data for the CAIR SO\(_2\) unit, in an electronic quarterly report in a format prescribed by the Administrator, for each calendar quarter beginning with:

(i) For a unit that commences commercial operation before July 1, 2008, the calendar quarter covering January 1, 2009 through March 31, 2009;

(ii) For a unit that commences commercial operation on or after July 1, 2008, the calendar quarter corresponding to the earlier of the date of provisional certification or the applicable deadline for initial certification under §96.270(b), unless that quarter is the third or fourth quarter of 2008, in which case reporting shall commence in the quarter covering January 1, 2009 through March 31, 2009;

(iii) Notwithstanding paragraphs (d)(1)(i) and (ii) of this section, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, the calendar quarter corresponding to the date specified in §96.284(b); and

(iv) Notwithstanding paragraphs (d)(1)(i) and (ii) of this section, for a CAIR SO\(_2\) opt-in unit under subpart III of this part, the calendar quarter corresponding to the date on which the CAIR SO\(_2\) opt-in unit enters the CAIR SO\(_2\) Trading Program as provided in §96.284(g).

(2) The CAIR designated representative shall submit each quarterly report to the Administrator within 30 days following the end of the calendar quarter covered by the report. Quarterly reports shall be submitted in the manner specified in §75.64 of this chapter.

(3) For CAIR SO\(_2\) units that are also subject to an Acid Rain emissions limitation or the CAIR NO\(_X\) Annual Trading Program CAIR NO\(_X\) Ozone Season Trading Program, or Hg Budget Trading Program, quarterly reports shall include the applicable data and information required by subparts F through I of part 75 of this chapter as applicable, in addition to the SO\(_2\) mass emission data, heat input data, and other information required by this subpart.

(e) Compliance certification. The CAIR designated representative shall submit to the Administrator a compliance certification (in a format prescribed by the Administrator) in support of each
quarterly report based on reasonable inquiry of those persons with primary responsibility for ensuring that all of the unit’s emissions are correctly and fully monitored. The certification shall state that:

(1) The monitoring data submitted were recorded in accordance with the applicable requirements of this subpart and part 75 of this chapter, including the quality assurance procedures and specifications; and

(2) For a unit with add-on \( \text{SO}_2 \) emission controls and for all hours where \( \text{SO}_2 \) data are substituted in accordance with §75.34(a)(1) of this chapter, the add-on emission controls were operating within the range of parameters listed in the quality assurance/quality control program under appendix B to part 75 of this chapter and the substitute data values do not systematically underestimate \( \text{SO}_2 \) emissions.

[70 FR 25362, May 12, 2005, as amended at 71 FR 25390, Apr. 28, 2006]

§ 96.275 Petitions.

(a) The CAIR designated representative of a CAIR \( \text{SO}_2 \) unit that is subject to an Acid Rain emissions limitation may submit a petition under §75.66 of this chapter to the Administrator requesting approval to apply an alternative to any requirement of this subpart. Application of an alternative to any requirement of this subpart is in accordance with this subpart only to the extent that the petition is approved in writing by the Administrator, in consultation with the permitting authority.

(b) The CAIR designated representative of a CAIR \( \text{SO}_2 \) unit that is not subject to an Acid Rain emissions limitation may submit a petition under §75.66 of this chapter to the permitting authority and the Administrator requesting approval to apply an alternative to any requirement of this subpart. Application of an alternative to any requirement of this subpart is in accordance with this subpart only to the extent that the petition is approved in writing by both the permitting authority and the Administrator.

§ 96.275 Petitions.

§ 96.280 Applicability.

A CAIR \( \text{SO}_2 \) opt-in unit must be a unit that:

(a) Is located in the State;

(b) Is not a CAIR \( \text{SO}_2 \) unit under §96.204 and is not covered by a retired unit exemption under §96.205 that is in effect;

(c) Is not covered by a retired unit exemption under §72.8 of this chapter that is in effect and is not an opt-in source under part 74 of this chapter;

(d) Has or is required or qualified to have a title V operating permit or other federally enforceable permit; and

(e) Vents all of its emissions to a stack and can meet the monitoring, recordkeeping, and reporting requirements of subpart HHH of this part.

§ 96.281 General.

(a) Except as otherwise provided in §§96.201 through 96.204, §§96.206 through 96.208, and subparts BBB and CCC and subparts FFF through HHH of this part, a CAIR \( \text{SO}_2 \) opt-in unit shall be treated as a CAIR \( \text{SO}_2 \) unit for purposes of applying such sections and subparts of this part.

(b) Solely for purposes of applying, as provided in this subpart, the requirements of subpart HHH of this part to a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under this subpart, such unit shall be treated as a CAIR \( \text{SO}_2 \) unit before issuance of a CAIR opt-in permit for such unit.

§ 96.282 CAIR designated representative.

Any CAIR \( \text{SO}_2 \) opt-in unit, and any unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under this subpart, located at the same source as one or more CAIR \( \text{SO}_2 \) units shall have the same CAIR designated representative and alternate CAIR designated representative as such CAIR \( \text{SO}_2 \) units.
§ 96.283 Applying for CAIR opt-in permit.

(a) Applying for initial CAIR opt-in permit. The CAIR designated representative of a unit meeting the requirements for a CAIR SO\(_2\) opt-in unit in §96.280 may apply for an initial CAIR opt-in permit at any time, except as provided under §§96.286(f) and (g), and, in order to apply, must submit the following:

1. A complete CAIR permit application under §96.222;
2. A certification, in a format specified by the permitting authority, that the unit:
   (i) Is not a CAIR SO\(_2\) unit under §96.204 and is not covered by a retired unit exemption under §96.205 that is in effect;
   (ii) Is not covered by a retired unit exemption under §72.8 of this chapter that is in effect;
   (iii) Is not and, so long as the unit is a CAIR SO\(_2\) opt-in unit, will not become, an opt-in source under part 74 of this chapter;
   (iv) Vents all of its emissions to a stack; and
   (v) Has documented heat input for more than 876 hours during the 6 months immediately preceding submission of the CAIR permit application under §96.222;
3. A monitoring plan in accordance with subpart HHH of this part;
4. A complete certificate of representation under §96.213 consistent with §96.282, if no CAIR designated representative has been previously designated for the source that includes the unit; and
5. A statement, in a format specified by the permitting authority, whether the CAIR designated representative requests that the unit be allocated CAIR SO\(_2\) allowances under §96.288(b) or §96.288(c) (subject to the conditions in §§96.284(h) and 96.286(g)). If allocation under §96.288(c) is requested, this statement shall include a statement that the owners and operators of the unit intend to repower the unit before January 1, 2015 and that they will provide, upon request, documentation demonstrating such intent.

(b) Duty to reapply. (1) The CAIR designated representative of a CAIR SO\(_2\) opt-in unit shall submit a complete CAIR permit application under §96.222 to renew the CAIR opt-in unit permit in accordance with the permitting authority’s regulations for title V operating permits, or the permitting authority’s regulations for other federally enforceable permits if applicable, addressing permit renewal.

(2) Unless the permitting authority issues a notification of acceptance of withdrawal of the CAIR SO\(_2\) opt-in unit from the CAIR SO\(_2\) Trading Program in accordance with §§96.286 or the unit becomes a CAIR SO\(_2\) unit under §96.204, the CAIR SO\(_2\) opt-in unit shall remain subject to the requirements for a CAIR SO\(_2\) opt-in unit, even if the CAIR designated representative for the CAIR SO\(_2\) opt-in unit fails to submit a CAIR permit application that is required for renewal of the CAIR opt-in permit under paragraph (b)(1) of this section.

(70 FR 25362, May 12, 2005, as amended at 71 FR 25390, Apr. 28, 2006)

§ 96.284 Opt-in process.

The permitting authority will issue or deny a CAIR opt-in permit for a unit for which an initial application for a CAIR opt-in permit under §96.283 is submitted in accordance with the following:

(a) Interim review of monitoring plan. The permitting authority and the Administrator will determine, on an interim basis, the sufficiency of the monitoring plan accompanying the initial application for a CAIR opt-in permit under §96.283. A monitoring plan is sufficient, for purposes of interim review, if the plan appears to contain information demonstrating that the SO\(_2\) emissions rate and heat input of the unit and all other applicable parameters are monitored and reported in accordance with subpart HHH of this part. A determination of sufficiency shall not be construed as acceptance or approval of the monitoring plan.

(b) Monitoring and reporting. (1)(i) If the permitting authority and the Administrator determine that the monitoring plan is sufficient under paragraph (a) of this section, the owner or operator shall monitor and report the SO\(_2\) emissions rate and the heat input of the unit and all other applicable parameters, in accordance with subpart HHH of this part, starting on the date

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of certification of the appropriate monitoring systems under subpart HHH of this part and continuing until a CAIR opt-in permit is denied under §96.284(f) or, if a CAIR opt-in permit is issued, the date and time when the unit is withdrawn from the CAIR SO\(_2\) Trading Program in accordance with §96.286.

(i) The monitoring and reporting under paragraph (b)(1)(i) of this section shall include the entire control period immediately before the date on which the unit enters the CAIR SO\(_2\) Trading Program under §96.284(g), during which period monitoring system availability must not be less than 90 percent under subpart HHH of this part and the unit must be in full compliance with any applicable State or Federal emissions or emissions-related requirements.

(2) To the extent the SO\(_2\) emissions rate and the heat input of the unit are monitored and reported in accordance with subpart HHH of this part for one or more control periods, in addition to the control period under paragraph (b)(1)(ii) of this section, during which control periods monitoring system availability is not less than 90 percent under subpart HHH of this part and the unit is in full compliance with any applicable State or Federal emissions or emissions-related requirements and which control periods begin not more than 3 years before the unit enters the CAIR SO\(_2\) Trading Program under §96.284(g), such information shall be used as provided in paragraphs (c) and (d) of this section.

(c) Baseline heat input. The unit’s baseline heat input shall equal:

(1) If the unit’s SO\(_2\) emissions rate and heat input are monitored and reported for only one control period, in accordance with paragraph (b)(1) of this section, the unit’s total heat input (in mmBtu) for the control period; or

(2) If the unit’s SO\(_2\) emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, the average of the amounts of the unit’s total heat input (in mmBtu) for the control periods under paragraphs (b)(1)(i) and (2) of this section.

(d) Baseline SO\(_2\) emission rate. The unit’s baseline SO\(_2\) emission rate shall equal:

(1) If the unit’s SO\(_2\) emissions rate and heat input are monitored and reported for only one control period, in accordance with paragraph (b)(1) of this section, the unit’s SO\(_2\) emissions rate (in lb/mmBtu) for the control period;

(2) If the unit’s SO\(_2\) emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, and the unit does not have add-on SO\(_2\) emission controls during any such control periods, the average of the amounts of the unit’s SO\(_2\) emissions rate (in lb/mmBtu) for the control periods under paragraphs (b)(1)(i) and (2) of this section; or

(3) If the unit’s SO\(_2\) emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, and the unit has add-on SO\(_2\) emission controls during any such control periods, the average of the amounts of the unit’s SO\(_2\) emissions rate (in lb/mmBtu) for such control periods during which the unit has add-on SO\(_2\) emission controls.

(e) Issuance of CAIR opt-in permit. After calculating the baseline heat input and the baseline SO\(_2\) emissions rate for the unit under paragraphs (c) and (d) of this section and if the permitting authority determines that the CAIR designated representative shows that the unit meets the requirements for a CAIR SO\(_2\) opt-in unit in §96.280 and meets the elements certified in §96.283(a)(2), the permitting authority will issue a CAIR opt-in permit. The permitting authority will provide a copy of the CAIR opt-in permit to the Administrator, who will then establish a compliance account for the source that includes the CAIR SO\(_2\) opt-in unit unless the source already has a compliance account.

(f) Issuance of denial of CAIR opt-in permit. Notwithstanding paragraphs (a) through (e) of this section, if at any time before issuance of a CAIR opt-in permit for the unit, the permitting authority determines that the CAIR designated representative fails to show
that the unit meets the requirements for a CAIR SO\textsubscript{2} opt-in unit in §96.280 or meets the elements certified in §96.283(a)(2), the permitting authority will issue a denial of a CAIR opt-in permit for the unit.

(g) Date of entry into CAIR SO\textsubscript{2} Trading Program. A unit for which an initial CAIR opt-in permit is issued by the permitting authority shall become a CAIR SO\textsubscript{2} opt-in unit, and a CAIR SO\textsubscript{2} unit, as of the later of January 1, 2010 or January 1 of the first control period during which such CAIR opt-in permit is issued.

(h) Repowered CAIR SO\textsubscript{2} opt-in unit. (1) If CAIR designated representative requests, and the permitting authority issues a CAIR opt-in permit providing for, allocation to a CAIR SO\textsubscript{2} opt-in unit of CAIR SO\textsubscript{2} allowances under §96.288(c) and such unit is repowered after its date of entry into the CAIR SO\textsubscript{2} Trading Program under paragraph (g) of this section, the repowered unit shall be treated as a CAIR SO\textsubscript{2} opt-in unit replacing the original CAIR SO\textsubscript{2} opt-in unit, as of the date of start-up of the repowered unit’s combustion chamber.

(2) Notwithstanding paragraphs (c) and (d) of this section, as of the date of start-up under paragraph (h)(1) of this section, the repowered unit shall be deemed to have the same date of commencement of operation, date of commencement of commercial operation, baseline heat input, and baseline SO\textsubscript{2} emission rate as the original CAIR SO\textsubscript{2} opt-in unit, and the original CAIR SO\textsubscript{2} opt-in unit shall no longer be treated as a CAIR SO\textsubscript{2} opt-in unit or a CAIR SO\textsubscript{2} unit.

§ 96.285 CAIR opt-in permit contents.

(a) Each CAIR opt-in permit will contain:

(1) All elements required for a complete CAIR permit application under §96.222;

(2) The certification in §96.283(a)(2);

(3) The unit’s baseline heat input under §96.284(c);

(4) The unit’s baseline SO\textsubscript{2} emission rate under §96.284(d);

(5) A statement whether the unit is to be allocated CAIR SO\textsubscript{2} allowances §96.288(b) or §96.288(c) (subject to the conditions in §§96.284(h) and 96.286(g));

(6) A statement that the unit may withdraw from the CAIR SO\textsubscript{2} Trading Program only in accordance with §96.286; and

(7) A statement that the unit is subject to, and the owners and operators of the unit must comply with, the requirements of §96.287.

(b) Each CAIR opt-in permit is deemed to incorporate automatically the definitions of terms under §96.202 and, upon recordation by the Administrator under subpart FFF or GGG of this part or this subpart, every allocation, transfer, or deduction of CAIR SO\textsubscript{2} allowances to or from the compliance account of the source that includes a CAIR SO\textsubscript{2} opt-in unit covered by the CAIR opt-in permit.

(c) The CAIR opt-in permit shall be included, in a format specified by the permitting authority, in the CAIR permit for the source where the CAIR SO\textsubscript{2} opt-in unit is located and in a title V operating permit or other federally enforceable permit for the source.

[70 FR 25362, May 12, 2005, as amended at 71 FR 25390, Apr. 28, 2006]

§ 96.286 Withdrawal from CAIR SO\textsubscript{2} Trading Program.

Except as provided under paragraph (g) of this section, a CAIR SO\textsubscript{2} opt-in unit may withdraw from the CAIR SO\textsubscript{2} Trading Program, but only if the permitting authority issues a notification to the CAIR designated representative of the CAIR SO\textsubscript{2} opt-in unit in accordance with paragraph (d) of this section.

(a) Requesting withdrawal. In order to withdraw a CAIR SO\textsubscript{2} opt-in unit from the CAIR SO\textsubscript{2} Trading Program, the CAIR designated representative of the CAIR SO\textsubscript{2} opt-in unit shall submit to the permitting authority a request to withdraw effective as of midnight of December 31 of a specified calendar year, which date must be at least 4 years after December 31 of the year of entry into the CAIR SO\textsubscript{2} Trading Program under §96.284(g). The request must be submitted no later than 90
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(b) Conditions for withdrawal. Before a CAIR SO\textsubscript{2} opt-in unit covered by a request under paragraph (a) of this section may withdraw from the CAIR SO\textsubscript{2} Trading Program and the CAIR opt-in permit may be terminated under paragraph (e) of this section, the following conditions must be met:

(1) For the control period ending on the date on which the withdrawal is to be effective, the source that includes the CAIR SO\textsubscript{2} opt-in unit must meet the requirement to hold CAIR SO\textsubscript{2} allowances under §96.206(c) and cannot have any excess emissions.

(2) After the requirement for withdrawal under paragraph (b)(1) of this section is met, the Administrator will deduct from the compliance account of the source that includes the CAIR SO\textsubscript{2} opt-in unit CAIR SO\textsubscript{2} allowances equal in amount to and allocated for the same or a prior control period as any CAIR SO\textsubscript{2} allowances allocated to the CAIR SO\textsubscript{2} opt-in unit under §96.288 for any control period for which the withdrawal is to be effective. If there are no remaining CAIR SO\textsubscript{2} units at the source, the Administrator will close the compliance account, and the owners and operators of the CAIR SO\textsubscript{2} opt-in unit may submit a CAIR SO\textsubscript{2} allowance transfer for any remaining CAIR SO\textsubscript{2} allowances to another CAIR SO\textsubscript{2} Allowance Tracking System in accordance with subpart GGG of this part.

(c) Notification. (1) After the requirements for withdrawal under paragraphs (a) and (b) of this section are met (including deduction of the full amount of CAIR SO\textsubscript{2} allowances required), the permitting authority will issue a notification to the CAIR designated representative of the CAIR SO\textsubscript{2} opt-in unit of the acceptance of the withdrawal of the CAIR SO\textsubscript{2} opt-in unit as of midnight on December 31 of the calendar year for which the withdrawal was requested.

(2) If the requirements for withdrawal under paragraphs (a) and (b) of this section are not met, the permitting authority will issue a notification to the CAIR designated representative of the CAIR SO\textsubscript{2} opt-in unit that the CAIR SO\textsubscript{2} opt-in unit’s request to withdraw is denied. Such CAIR SO\textsubscript{2} opt-in unit shall continue to be a CAIR SO\textsubscript{2} opt-in unit.

(d) Permit amendment. After the permitting authority issues a notification under paragraph (c)(1) of this section that the requirements for withdrawal have been met, the permitting authority will revise the CAIR permit covering the CAIR SO\textsubscript{2} opt-in unit to terminate the CAIR opt-in permit for such unit as of the effective date specified under paragraph (c)(1) of this section. The unit shall continue to be a CAIR SO\textsubscript{2} opt-in unit until the effective date of the termination and shall comply with all requirements under the CAIR SO\textsubscript{2} Trading Program concerning any control periods for which the unit is a CAIR SO\textsubscript{2} opt-in unit, even if such requirements arise or must be complied with after the withdrawal takes effect.

(e) Reapplication upon failure to meet conditions of withdrawal. If the permitting authority denies the CAIR SO\textsubscript{2} opt-in unit’s request to withdraw, the CAIR designated representative may submit another request to withdraw in accordance with paragraphs (a) and (b) of this section.

(f) Ability to reapply to the CAIR SO\textsubscript{2} Trading Program. Once a CAIR SO\textsubscript{2} opt-in unit withdraws from the CAIR SO\textsubscript{2} Trading Program and its CAIR opt-in permit is terminated under this section, the CAIR designated representative may not submit another application for a CAIR opt-in permit under §96.283 for such CAIR SO\textsubscript{2} opt-in unit before the date that is 4 years after the date on which the withdrawal became effective. Such new application for a CAIR opt-in permit will be treated as an initial application for a CAIR opt-in permit under §96.284.

(g) Inability to withdraw. Notwithstanding paragraphs (a) through (f) of this section, a CAIR SO\textsubscript{2} opt-in unit shall not be eligible to withdraw from the CAIR SO\textsubscript{2} Trading Program if the CAIR designated representative of the CAIR SO\textsubscript{2} opt-in unit requests, and the permitting authority issues a CAIR opt-in permit providing for, allocation to the CAIR SO\textsubscript{2} opt-in unit of CAIR SO\textsubscript{2} allowances under §96.288(c).

[70 FR 25362, May 12, 2005, as amended at 71 FR 23390, Apr. 28, 2006]
§ 96.287 Change in regulatory status.

(a) Notification. If a CAIR SO\textsubscript{2} opt-in unit becomes a CAIR SO\textsubscript{2} unit under §96.204, then the CAIR designated representative shall notify in writing the permitting authority and the Administrator of such change in the CAIR SO\textsubscript{2} opt-in unit’s regulatory status, within 30 days of such change.

(b) Permitting authority’s and Administrator’s actions. (1) If a CAIR SO\textsubscript{2} opt-in unit becomes a CAIR SO\textsubscript{2} unit under §96.204, the permitting authority will revise the CAIR SO\textsubscript{2} opt-in unit’s CAIR opt-in permit to meet the requirements of a CAIR permit under §96.223, and remove the CAIR opt-in permit provisions, as of the date on which the CAIR SO\textsubscript{2} opt-in unit becomes a CAIR SO\textsubscript{2} unit under §96.204.

(2) (i) The Administrator will deduct from the compliance account of the source that includes a CAIR SO\textsubscript{2} opt-in unit that becomes a CAIR SO\textsubscript{2} unit under §96.204, CAIR SO\textsubscript{2} allowances equal in amount to and allocated for the same or a prior control period as:

(A) Any CAIR SO\textsubscript{2} allowances allocated to the CAIR SO\textsubscript{2} opt-in unit under §96.288 for any control period after the date on which the CAIR SO\textsubscript{2} opt-in unit becomes a CAIR SO\textsubscript{2} unit under §96.204; and

(B) If the date on which the CAIR SO\textsubscript{2} opt-in unit becomes a CAIR SO\textsubscript{2} unit under §96.204 is not December 31, the CAIR SO\textsubscript{2} allowances allocated to the CAIR SO\textsubscript{2} opt-in unit under §96.288 for the control period that includes the date on which the CAIR SO\textsubscript{2} opt-in unit becomes a CAIR SO\textsubscript{2} unit under §96.204, multiplied by the ratio of the number of days, in the control period, starting with the date on which the CAIR SO\textsubscript{2} opt-in unit becomes a CAIR SO\textsubscript{2} unit under §96.204 divided by the total number of days in the control period and rounded to the nearest whole allowance as appropriate.

(ii) The CAIR designated representative shall ensure that the compliance account of the source that includes the CAIR SO\textsubscript{2} opt-in unit that becomes a CAIR SO\textsubscript{2} unit under §96.204 contains the CAIR SO\textsubscript{2} allowances necessary for completion of the deduction under paragraph (b)(2)(i) of this section.


§ 96.288 CAIR SO\textsubscript{2} allowance allocations to CAIR SO\textsubscript{2} opt-in units.

(a) Timing requirements. (1) When the CAIR opt-in permit is issued under §96.284(e), the permitting authority will allocate CAIR SO\textsubscript{2} allowances to the CAIR SO\textsubscript{2} opt-in unit, and submit to the Administrator the allocation for the control period in which a CAIR SO\textsubscript{2} opt-in unit enters the CAIR SO\textsubscript{2} Trading Program under §96.284(g). In accordance with paragraph (b) or (c) of this section.

(2) By no later than October 31 of the control period after the control period in which a CAIR SO\textsubscript{2} opt-in unit enters the CAIR SO\textsubscript{2} Trading Program under §96.284(g) and October 31 of each year thereafter, the permitting authority will allocate CAIR SO\textsubscript{2} allowances to the CAIR SO\textsubscript{2} opt-in unit, and submit to the Administrator the allocation for the control period that includes such submission deadline and in which the unit is a CAIR SO\textsubscript{2} opt-in unit, in accordance with paragraph (b) or (c) of this section.

(b) Calculation of allocation. For each control period for which a CAIR SO\textsubscript{2} opt-in unit is to be allocated CAIR SO\textsubscript{2} allowances, the permitting authority will allocate in accordance with the following procedures:

(1) The heat input (in mmBtu) used for calculating the CAIR SO\textsubscript{2} allowance allocation will be the lesser of:

(i) The CAIR SO\textsubscript{2} opt-in unit’s baseline heat input determined under §96.284(c); or

(ii) The CAIR SO\textsubscript{2} opt-in unit’s heat input, as determined in accordance with subpart HHH of this part, for the immediately prior control period, except when the allocation is being calculated for the control period in which the CAIR SO\textsubscript{2} opt-in unit enters the CAIR SO\textsubscript{2} Trading Program under §96.284(g).

(2) The SO\textsubscript{2} emission rate (in lb/mmBtu) used for calculating CAIR SO\textsubscript{2} allowance allocations will be the lesser of:
(i) The CAIR SO\textsubscript{2} opt-in unit’s baseline SO\textsubscript{2} emissions rate (in lb/mmBtu) determined under §96.284(d) and multiplied by 70 percent; or

(ii) The most stringent State or Federal SO\textsubscript{2} emissions limitation applicable to the CAIR SO\textsubscript{2} opt-in unit at any time during the control period in which CAIR SO\textsubscript{2} allowances are to be allocated.

(3) The permitting authority will allocate CAIR SO\textsubscript{2} allowances to the CAIR SO\textsubscript{2} opt-in unit with a tonnage equivalent equal to, or less than by the smallest possible amount, the heat input under paragraph (b)(1) of this section, multiplied by the SO\textsubscript{2} emission rate under paragraph (b)(2) of this section, and divided by 2,000 lb/ton.

(c) Notwithstanding paragraph (b) of this section and if the CAIR designated representative requests, and the permitting authority issues a CAIR opt-in permit (based on a demonstration of the intent to repower stated under §96.283(a)(5)) providing for, allocation to a CAIR SO\textsubscript{2} opt-in unit of CAIR SO\textsubscript{2} allowances under this paragraph (subject to the conditions in §§96.284(h) and 96.286(g)), the permitting authority will allocate to the CAIR SO\textsubscript{2} opt-in unit as follows:

(i) For each control period in 2010 through 2014 for which the CAIR SO\textsubscript{2} opt-in unit is to be allocated CAIR SO\textsubscript{2} allowances,

(ii) The heat input (in mmBtu) used for calculating CAIR SO\textsubscript{2} allowance allocations will be determined as described in paragraph (b)(1) of this section.

(iii) The SO\textsubscript{2} emission rate (in lb/mmBtu) used for calculating the CAIR SO\textsubscript{2} allowances will be the lesser of:

(A) The SO\textsubscript{2} emission rate (in lb/mmBtu) determined under §96.284(d) multiplied by 10 percent; or

(B) The most stringent State or Federal SO\textsubscript{2} emissions limitation applicable to the CAIR SO\textsubscript{2} opt-in unit at any time during the control period in which CAIR SO\textsubscript{2} allowances are to be allocated.

(iii) The permitting authority will allocate CAIR SO\textsubscript{2} allowances to the CAIR SO\textsubscript{2} opt-in unit with a tonnage equivalent equal to, or less than by the smallest possible amount, the heat input under paragraph (c)(1)(i) of this section, multiplied by the SO\textsubscript{2} emission rate under paragraph (c)(1)(ii) of this section, and divided by 2,000 lb/ton.

(2) For each control period in 2015 and thereafter for which the CAIR SO\textsubscript{2} opt-in unit is to be allocated CAIR SO\textsubscript{2} allowances,

(i) The heat input (in mmBtu) used for calculating the CAIR SO\textsubscript{2} allowance allocations will be determined as described in paragraph (b)(1) of this section.

(ii) The SO\textsubscript{2} emission rate (in lb/mmBtu) used for calculating the CAIR SO\textsubscript{2} allowance allocation will be the lesser of:

(A) The CAIR SO\textsubscript{2} opt-in unit’s baseline SO\textsubscript{2} emissions rate (in lb/mmBtu) determined under §96.284(d) multiplied by 10 percent; or

(B) The most stringent State or Federal SO\textsubscript{2} emissions limitation applicable to the CAIR SO\textsubscript{2} opt-in unit at any time during the control period in which CAIR SO\textsubscript{2} allowances are to be allocated.

(iii) The permitting authority will allocate CAIR SO\textsubscript{2} allowances to the CAIR SO\textsubscript{2} opt-in unit under paragraph (a)(1) of this section.

(2) By December 1 of the control period in which a CAIR SO\textsubscript{2} opt-in unit enters the CAIR SO\textsubscript{2} Trading Program under §96.284(g), and December 1 of each year thereafter, the Administrator will record, in the compliance account of the source that includes the CAIR SO\textsubscript{2} opt-in unit, the CAIR SO\textsubscript{2} allowances allocated by the permitting authority to the CAIR SO\textsubscript{2} opt-in unit under paragraph (a)(1) of this section.

[70 FR 25362, May 12, 2005, as amended at 71 FR 25390, Apr. 28, 2006]
Subpart AAAA—CAIR NO\textsubscript{X} Ozone Season Trading Program General Provisions

\textbf{Source:} 70 FR 25382, May 12, 2005, unless otherwise noted.

\textbf{§ 96.301 Purpose.}

This subpart and subparts BBBB through IIII establish the model rule comprising general provisions and the designated representative, permitting, allowance, monitoring, and opt-in provisions for the State Clean Air Interstate Rule (CAIR) NO\textsubscript{X} Ozone Season Trading Program, under section 110 of the Clean Air Act and §51.123 of this chapter, as a means of mitigating interstate transport of ozone and nitrogen oxides. The owner or operator of a unit or a source shall comply with the requirements of this subpart and subparts BBBB through IIII as a matter of federal law only if the State with jurisdiction over the unit and the source incorporates by reference such subparts or otherwise adopts the requirements of such subparts in accordance with §51.123(aa)(1) or (2), of this chapter, the State submits to the Administrator one or more revisions of the State implementation plan that include such adoption, and the Administrator approves such revisions. If the State adopts the requirements of such subparts in accordance with §51.123(aa)(1) or (2), (bb), or (dd) of this chapter, then the State authorizes the Administrator to assist the State in implementing the CAIR NO\textsubscript{X} Ozone Season Trading Program by carrying out the functions set forth for the Administrator in such subparts.

\textbf{§ 96.302 Definitions.}

The terms used in this subpart and subparts BBBB through IIII shall have the meanings set forth in this section as follows:

\textit{Account number} means the identification number given by the Administrator to each CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System account.

\textit{Acid Rain emissions limitation} means a limitation on emissions of sulfur dioxide or nitrogen oxides under the Acid Rain Program.
the Acid Rain Program, then this natural person shall be the same person as the alternate designated representative under the Acid Rain Program. If the CAIR NO₃ Ozone Season source is also subject to the Hg Budget Trading Program, then this natural person shall be the same person as the alternate Hg designated representative under the Hg Budget Trading Program.

Automated data acquisition and handling system or DAHS means that component of the continuous emission monitoring system, or other emissions monitoring system approved for use under subpart HHHH of this part, designed to interpret and convert individual output signals from pollutant concentration monitors, flow monitors, diluent gas monitors, and other component parts of the monitoring system to produce a continuous record of the measured parameters in the measurement units required by subpart HHHH of this part.

Biomass means—
(1) Any organic material grown for the purpose of being converted to energy;
(2) Any organic byproduct of agriculture that can be converted into energy; or
(3) Any material that can be converted into energy and is nonmerchantable for other purposes, that is segregated from other nonmerchantable material, and that is;
   (i) A forest-related organic resource, including mill residues, precommercial thinnings, slash, brush, or byproduct from conversion of trees to merchantable material; or
   (ii) A wood material, including pallets, crates, dunnage, manufacturing and construction materials (other than pressure-treated, chemically-treated, or painted wood products), and landscape or right-of-way tree trimmings.

Boiler means an enclosed fossil- or other-fuel-fired combustion device used to produce heat and to transfer heat to recirculating water, steam, or other medium.

Bottoming-cycle cogeneration unit means a cogeneration unit in which the energy input to the unit is first used to produce useful thermal energy and at least some of the reject heat from the useful thermal energy application or process is then used for electricity production.

CAIR authorized account representative means, with regard to a general account, a responsible natural person who is authorized, in accordance with subparts BBBB, FFFF, and IIII of this part, to transfer and otherwise dispose of CAIR NO₃ Ozone Season allowances held in the general account and, with regard to a compliance account, the CAIR designated representative of the source.

CAIR designated representative means, for a CAIR NO₃ Ozone Season source and each CAIR NO₃ Ozone Season unit at the source, the natural person who is authorized by the owners and operators of the source and all such units at the source, in accordance with subparts BBBB and IIII of this part, to represent and legally bind each owner and operator in matters pertaining to the CAIR NO₃ Ozone Season Trading Program. If the CAIR NO₃ Ozone Season source is also a CAIR NO₃ source, then this natural person shall be the same person as the CAIR designated representative under the CAIR NO₃ Annual Trading Program. If the CAIR NO₃ Ozone Season source is also subject to the Acid Rain Program, then this natural person shall be the same person as the designated representative under the Acid Rain Program. If the CAIR NO₃ Ozone Season source is also subject to the Hg Budget Trading Program, then this natural person shall be the same person as the Hg designated representative under the Hg Budget Trading Program.

CAIR NO₃ Annual Trading Program means a multi-state nitrogen oxides air pollution control and emission reduction program approved and administered by the Administrator in accordance with subparts AA through II of this part and §51.123(o)(1) or (2) of this chapter or established by the Administrator in accordance with subparts AA through II of part 97 of this chapter and §§51.123(p) and 52.35 of this chapter, as
a means of mitigating interstate transport of fine particulates and nitrogen oxides.

CAIR NO\textsubscript{x} Ozone Season allowance means a limited authorization issued by a permitting authority or the Administrator under provisions of a State implementation plan that are approved under \$51.123(aa)(1) or (2) (and (bb)(1)), (bb)(2), (dd), or (ee) of this chapter, or under subpart EEEE of part 97 or \$97.388 of this chapter, to emit one ton of nitrogen oxides during a control period of the specified calendar year for which the authorization is allocated or of any calendar year thereafter under the CAIR NO\textsubscript{x} Ozone Season Trading Program or a limited authorization issued by a permitting authority for a control period during 2003 through 2008 under the NO\textsubscript{x} Budget Trading Program in accordance with \$51.121(p) of this chapter to emit one ton of nitrogen oxides during a control period, provided that the provision in \$51.121(b)(2)(ii)(E) of this chapter shall not be applied in using this definition and the limited authorization shall not have been used to meet the allowance-holding requirement under the NO\textsubscript{x} Budget Trading Program. An authorization to emit nitrogen oxides that is not issued under provisions of a State implementation plan approved under \$51.123(aa)(1) or (2) (and (bb)(1)), (bb)(2), (dd), or (ee) of this chapter or subpart EEEE of part 97 or \$97.388 of this chapter or under the NO\textsubscript{x} Budget Trading Program as described in the prior sentence shall not be a CAIR NO\textsubscript{x} Ozone Season allowance.

CAIR NO\textsubscript{x} Ozone Season allowance deduction or deduct CAIR NO\textsubscript{x} Ozone Season allowances means the permanent withdrawal of CAIR NO\textsubscript{x} Ozone Season allowances by the Administrator from a compliance account, e.g., in order to account for a specified number of tons of total nitrogen oxides emissions from all CAIR NO\textsubscript{x} Ozone Season units at a CAIR NO\textsubscript{x} Ozone Season source for a control period, determined in accordance with subpart HHHH of this part, or to account for excess emissions.

CAIR NO\textsubscript{x} Ozone Season Allowance Tracking System means the system by which the Administrator records allocations, deductions, and transfers of CAIR NO\textsubscript{x} Ozone Season allowances under the CAIR NO\textsubscript{x} Ozone Season Trading Program. Such allowances will be allocated, held, deducted, or transferred only as whole allowances.

CAIR NO\textsubscript{x} Ozone Season Allowance Tracking System account means an account in the CAIR NO\textsubscript{x} Ozone Season Allowance Tracking System established by the Administrator for purposes of recording the allocation, holding, transferring, or deducting of CAIR NO\textsubscript{x} Ozone Season allowances.

CAIR NO\textsubscript{x} Ozone Season allowances held or hold CAIR NO\textsubscript{x} Ozone Season allowances means the CAIR NO\textsubscript{x} Ozone Season allowances recorded by the Administrator, or submitted to the Administrator for recordation, in accordance with subparts FFFF, GGGG, and IIII of this part, in a CAIR NO\textsubscript{x} Ozone Season Allowance Tracking System account.

CAIR NO\textsubscript{x} Ozone Season allowances means the CAIR NO\textsubscript{x} Ozone Season source, the tonnage equivalent, in NO\textsubscript{x} emissions in a control period, of the CAIR NO\textsubscript{x} Ozone Season allowances available for deduction for the source under \$96.354(a) and (b) for the control period.

CAIR NO\textsubscript{x} Ozone Season Trading Program means a multi-state nitrogen oxides air pollution control and emission reduction program approved and administered by the Administrator in accordance with subparts AAAA through IIII of part 97 and \$51.123(ee) and 52.35 of this chapter, as a means of mitigating interstate transport of ozone and nitrogen oxides.

CAIR NO\textsubscript{x} Ozone Season source means a source that includes one or more CAIR NO\textsubscript{x} Ozone Season units.

CAIR NO\textsubscript{x} Ozone Season unit means a unit that is subject to the CAIR NO\textsubscript{x} Ozone Season Trading Program under \$96.304 and, except for purposes of \$96.305 and subpart EEEE of this part, a CAIR NO\textsubscript{x} Ozone Season opt-in unit under subpart IIII of this part.

CAIR NO\textsubscript{x} source means a source that is subject to the CAIR NO\textsubscript{x} Annual Trading Program.
CAIR permit means the legally binding and federally enforceable written document, or portion of such document, issued by the permitting authority under subpart CCCC of this part, including any permit revisions, specifying the CAIR NO\textsubscript{X} Ozone Season Trading Program requirements applicable to a CAIR NO\textsubscript{X} Ozone Season source, to each CAIR NO\textsubscript{X} Ozone Season unit at the source, and to the owners and operators and the CAIR designated representative of the source and each such unit.

CAIR SO\textsubscript{2} source means a source that is subject to the CAIR SO\textsubscript{2} Trading Program.

CAIR SO\textsubscript{2} Trading Program means a multi-state sulfur dioxide air pollution control and emission reduction program approved and administered by the Administrator in accordance with subparts AAA through II of this part and §51.124(o)(1) or (2) of this chapter or established by the Administrator in accordance with subparts AAA through III of part 97 of this chapter, as a means of mitigating interstate transport of fine particulates and sulfur dioxide.

Clean Air Act or CAA means the Clean Air Act, 42 U.S.C. 7401, et seq.

Coal means any solid fuel classified as anthracite, bituminous, subbituminous, or lignite.

Coal-derived fuel means any fuel (whether in a solid, liquid, or gaseous state) produced by the mechanical, thermal, or chemical processing of coal.

Coal-fired means:
(1) Except for purposes of subpart EEEE of this part, combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of any other fuel, during any year or
(2) For purposes of subpart EEEE of this part, combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of any other fuel, during a specified year.

Cogeneration unit means a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine:
(1) Having equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy; and
(2) Producing during the 12-month period starting on the date the unit first produces electricity and during any calendar year after the calendar year in which the unit first produces electricity—
   (i) For a topping-cycle cogeneration unit,
      (A) Useful thermal energy not less than 5 percent of total energy output; and
      (B) Useful power that, when added to one-half of useful thermal energy produced, is not less than 42.5 percent of total energy input, if useful thermal energy produced is 15 percent or more of total energy output, or not less than 45 percent of total energy input, if useful thermal energy produced is less than 15 percent of total energy output.
   (ii) For a bottoming-cycle cogeneration unit, useful power not less than 45 percent of total energy input;
   (3) Provided that the total energy input under paragraphs (2)(i)(B) and (2)(ii) of this definition shall equal the unit’s total energy input from all fuel except biomass if the unit is a boiler.

Combustion turbine means:
(1) An enclosed device comprising a compressor, a combustor, and a turbine and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine; and
(2) If the enclosed device under paragraph (1) of this definition is combined cycle, any associated duct burner, heat recovery steam generator, and steam turbine.

Commence commercial operation means, with regard to a unit:
(1) To have begun to produce steam, gas, or other heated medium used to generate electricity for sale or use, including test generation, except as provided in §96.305 and §96.384(h).
(1) For a unit that is a CAIR NO\textsubscript{X} Ozone Season unit under §96.304 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the date of commencement of
commercial operation of the unit, which shall continue to be treated as the same unit.

(ii) For a unit that is a CAIR NO\textsubscript{X} Ozone Season unit under §96.304 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), such date shall remain the replaced unit’s date of commencement of commercial operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of commercial operation as defined in paragraph (1) or (2) of this definition as appropriate.

(2) Notwithstanding paragraph (1) of this definition and except as provided in §96.305, for a unit that is not a CAIR NO\textsubscript{X} Ozone Season unit under §96.304 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition, the unit’s date for commencement of commercial operation shall be the date on which the unit becomes a CAIR NO\textsubscript{X} Ozone Season unit under §96.304.

(i) For a unit with a date for commencement of commercial operation as defined in paragraph (2) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the date of commencement of commercial operation of the unit, which shall continue to be treated as the same unit.

(ii) For a unit with a date for commencement of commercial operation as defined in paragraph (2) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), such date shall remain the replaced unit’s date of commencement of commercial operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of commercial operation as defined in paragraph (1) or (2) of this definition as appropriate.

Commence operation means:

(1) To have begun any mechanical, chemical, or electronic process, including, with regard to a unit, start-up of a unit’s combustion chamber, except as provided in §96.384(h).

(2) For a unit that undergoes a physical change (other than replacement of the unit by a unit at the same source) after the date the unit commences operation as defined in paragraph (1) of this definition, such date shall remain the date of commencement of operation of the unit, which shall continue to be treated as the same unit.

(3) For a unit that is replaced by a unit at the same source (e.g., repowered) after the date the unit commences operation as defined in paragraph (1) of this definition, such date shall remain the replaced unit’s date of commencement of operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of operation as defined in paragraph (1), (2), or (3) of this definition as appropriate, except as provided in §96.384(h).

Common stack means a single flue through which emissions from 2 or more units are exhausted.

Compliance account means a CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System account, established by the Administrator for a CAIR NO\textsubscript{X} Ozone Season source under subpart FFFF or IIII of this part, in which any CAIR NO\textsubscript{X} Ozone Season allowance allocations for the CAIR NO\textsubscript{X} Ozone Season units at the source are initially recorded and in which are held any CAIR NO\textsubscript{X} Ozone Season allowances available for use for a control period in order to meet the source’s CAIR NO\textsubscript{X} Ozone Season emissions limitation in accordance with §96.354.

Continuous emission monitoring system or CEMS means the equipment required under subpart HHHH of this part to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of nitrogen oxides emissions, stack gas volumetric flow rate, stack gas moisture content, and oxygen or carbon dioxide concentration (as applicable), in a manner consistent with part 75 of this chapter. The following systems are the principal types of continuous emission monitoring systems required under subpart HHHH of this part:
(1) A flow monitoring system, consisting of a stack flow rate monitor and an automated data acquisition and handling system and providing a permanent, continuous record of stack gas volumetric flow rate, in standard cubic feet per hour (scfh);

(2) A nitrogen oxides concentration monitoring system, consisting of a NO\textsubscript{X} pollutant concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of NO\textsubscript{X} emissions, in parts per million (ppm);

(3) A nitrogen oxides emission rate (or NO\textsubscript{X}-diluent) monitoring system, consisting of a NO\textsubscript{X} pollutant concentration monitor, a diluent gas (CO\textsubscript{2} or O\textsubscript{2}) monitor, and an automated data acquisition and handling system and providing a permanent, continuous record of NO\textsubscript{X} concentration, in parts per million (ppm), diluent gas concentration, in percent CO\textsubscript{2} or O\textsubscript{2}, and NO\textsubscript{X} emission rate, in pounds per million British thermal units (lb/mmBtu);

(4) A moisture monitoring system, as defined in §75.11(b)(2) of this chapter and providing a permanent, continuous record of the stack gas moisture content, in percent H\textsubscript{2}O;

(5) A carbon dioxide monitoring system, consisting of a CO\textsubscript{2} pollutant concentration monitor (or an oxygen monitor plus suitable mathematical equations from which the CO\textsubscript{2} concentration is derived) and an automated data acquisition and handling system and providing a permanent, continuous record of CO\textsubscript{2} emissions, in percent CO\textsubscript{2}; and

(6) An oxygen monitoring system, consisting of an O\textsubscript{2} concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of O\textsubscript{2} in percent O\textsubscript{2}.

Control period or ozone season means the period beginning May 1 of a calendar year, except as provided in §96.306(c)(2), and ending on September 30 of the same year, inclusive.

Emissions means air pollutants exhausted from a unit or source into the atmosphere, as measured, recorded, and reported to the Administrator by the CAIR designated representative and as determined by the Administrator in accordance with subpart HHHH of this part.

Excess emissions means any ton of nitrogen oxides emitted by the CAIR NO\textsubscript{X} Ozone Season units at a CAIR NO\textsubscript{X} Ozone Season source during a control period that exceeds the CAIR NO\textsubscript{X} Ozone Season emissions limitation for the source.

Fossil fuel means natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material.

Fossil-fuel-fired means, with regard to a unit,combusting any amount of fossil fuel in any calendar year.

Fuel oil means any petroleum-based fuel (including diesel fuel or petroleum derivatives such as oil tar) and any recycled or blended petroleum products or petroleum by-products used as a fuel whether in a liquid, solid, or gaseous state.

General account means a CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System account, established under subpart PFFF of this part, that is not a compliance account.

Generator means a device that produces electricity.

Gross electrical output means, with regard to a cogeneration unit, electricity made available for use, including any such electricity used in the power production process (which process includes, but is not limited to, any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls).

Heat input means, with regard to a specified period of time, the product (in mmBtu/time) of the gross calorific value of the fuel (in Btu/lb) divided by 1,000,000 Btu/mmBtu and multiplied by the fuel feed rate into a combustion device (in lb of fuel/time), as measured, recorded, and reported to the Administrator by the CAIR designated representative and determined by the Administrator in accordance with subpart HHHH of this part and excluding the heat derived from preheated combustion air, recirculated flue gases, or exhaust from other sources.

Heat input rate means the amount of heat input (in mmBtu) divided by unit operating time (in hr) or, with regard to a specific fuel, the amount of heat input attributed to the fuel (in mmBtu).
divided by the unit operating time (in hr) during which the unit combusts the fuel.

Life-of-the-unit, firm power contractual arrangement means a unit participation power sales agreement under which a utility or industrial customer reserves, or is entitled to receive, a specified amount or percentage of nameplate capacity and associated energy generated by any specified unit and pays its proportional amount of such unit’s total costs, pursuant to a contract:

(1) For the life of the unit;
(2) For a cumulative term of no less than 30 years, including contracts that permit an election for early termination; or
(3) For a period no less than 25 years or 70 percent of the economic useful life of the unit determined as of the time the unit is built, with option rights to purchase or release some portion of the nameplate capacity and associated energy generated by the unit at the end of the period.

Maximum design heat input means the maximum amount of fuel per hour (in Btu/hr) that a unit is capable of combusting on a steady state basis as of the initial installation of the unit as specified by the manufacturer of the unit.

Monitoring system means any monitoring system that meets the requirements of subpart HHHH of this part, including a continuous emissions monitoring system, an alternative monitoring system, or an excepted monitoring system under part 75 of this chapter.

Most stringent State or Federal NO\textsubscript{X} emissions limitation means, with regard to a unit, the lowest NO\textsubscript{X} emissions limitation (in terms of lb/mmBtu) that is applicable to the unit under State or Federal law, regardless of the averaging period to which the emissions limitation applies.

Nameplate capacity means, starting from the initial installation of a generator, the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady state basis and during continuous operation (when not restricted by seasonal or other deratings), such increased maximum amount as of such completion as specified by the person conducting the physical change.

Oil-fired means, for purposes of subpart EEEE of this part, combusting fuel oil for more than 15.0 percent of the annual heat input in a specified year and not qualifying as coal-fired.

Operator means any person who operates, controls, or supervises a CAIR NO\textsubscript{X} Ozone Season unit or a CAIR NO\textsubscript{X} Ozone Season source and shall include, but not be limited to, any holding company, utility system, or plant manager of such a unit or source.

Owner means any of the following persons:

(1) With regard to a CAIR NO\textsubscript{X} Ozone Season source or a CAIR NO\textsubscript{X} Ozone Season unit at a source, respectively:
   (i) Any holder of any portion of the legal or equitable title in a CAIR NO\textsubscript{X} Ozone Season unit at the source or the CAIR NO\textsubscript{X} Ozone Season unit;
   (ii) Any holder of a leasehold interest in a CAIR NO\textsubscript{X} Ozone Season unit at the source or the CAIR NO\textsubscript{X} Ozone Season unit; or
   (iii) Any purchaser of power from a CAIR NO\textsubscript{X} Ozone Season unit at the source or the CAIR NO\textsubscript{X} Ozone Season unit under a life-of-the-unit, firm power contractual arrangement; provided that, unless expressly provided for in a leasehold agreement, owner shall not include a passive lessor, or a person who has an equitable interest through such lessor, whose rental payments are not based (either directly or indirectly) on the revenues or income from such CAIR NO\textsubscript{X} Ozone Season unit; or
(2) With regard to any general account, any person who has an ownership interest with respect to the CAIR NO\textsubscript{X} Ozone Season allowances held in the general account and who is subject to the binding agreement for the CAIR authorized account representative to
represent the person's ownership interest with respect to CAIR NOₓ Ozone Season allowances.

Permitting authority means the State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to issue or revise permits to meet the requirements of the CAIR NOₓ Ozone Season Trading Program or, if no such agency has been so authorized, the Administrator.

Potential electrical output capacity means 33 percent of a unit's maximum design heat input, divided by 3,413 Btu/kWh, divided by 1,000 kWh/MWh, and multiplied by 8,760 hr/yr.

Receive or receipt of means, when referring to the permitting authority or the Administrator, to come into possession of a document, information, or correspondence (whether sent in hard copy or by authorized electronic transmission), as indicated in an official log, or by a notation made on the document, information, or correspondence, by the permitting authority or the Administrator in the regular course of business.

Recordation, record, or recorded means, with regard to CAIR NOₓ Ozone Season allowances, the movement of CAIR NOₓ Ozone Season allowances by the Administrator into or between CAIR NOₓ Ozone Season Allowance Tracking System accounts, for purposes of allocation, transfer, or deduction.

Reference method means any direct test method of sampling and analyzing for an air pollutant as specified in §75.22 of this chapter.

Replacement, replace, or replaced means, with regard to a unit, the demolishing of a unit, or the permanent shutdown and permanent disabling of a unit, and the construction of another unit (the replacement unit) to be used instead of the demolished or shutdown unit (the replaced unit).

Repowered means, with regard to a unit, replacement of a coal-fired boiler with one of the following coal-fired technologies at the same source as the coal-fired boiler:

1. Atmospheric or pressurized fluidized bed combustion;
2. Integrated gasification combined cycle;
3. Magnetohydrodynamics;
4. Direct and indirect coal-fired turbines;
5. Integrated gasification fuel cells; or
6. As determined by the Administrator in consultation with the Secretary of Energy, a derivative of one or more of the technologies under paragraphs (1) through (5) of this definition and any other coal-fired technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of January 1, 2005.

Serial number means, for a CAIR NOₓ Ozone Season allowance, the unique identification number assigned to each CAIR NOₓ Ozone Season allowance by the Administrator.

Sequential use of energy means:

1. For a topping-cycle cogeneration unit, the use of reject heat from electricity production in a useful thermal energy application or process; or
2. For a bottoming-cycle cogeneration unit, the use of reject heat from useful thermal energy application or process in electricity production.

Solid waste incineration unit means a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine that is a “solid waste incineration unit” as defined in section 129(g)(1) of the Clean Air Act.

Source means all buildings, structures, or installations located in one or more contiguous or adjacent properties under common control of the same person or persons. For purposes of section 502(c) of the Clean Air Act, a “source,” including a “source” with multiple units, shall be considered a single “facility.”

State means one of the States or the District of Columbia that adopts the CAIR NOₓ Ozone Season Trading Program pursuant to §51.123(aa)(1) or (2), (bb), or (dd) of this chapter.

Submit or serve means to send or transmit a document, information, or correspondence to the person specified in accordance with the applicable regulation:

1. In person:
§ 96.303 Measurements, abbreviations, and acronyms.

Measurements, abbreviations, and acronyms used in this subpart and subparts BBBB through IIII are defined as follows:

**Btu**—British thermal unit

**CO**₂—carbon dioxide

**H**₂—water

**Hg**—mercury

**hr**—hour

**kW**—kilowatt electrical

**kWh**—kilowatt hour

**lb**—pound

**mmBtu**—million Btu

**MWe**—megawatt electrical

**MWh**—megawatt hour

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(2) By United States Postal Service; or

(3) By other means of dispatch or transmission and delivery. Compliance with any “submission” or “service” deadline shall be determined by the date of dispatch, transmission, or mailing and not the date of receipt.

**Title V operating permit** means a permit issued under title V of the Clean Air Act and part 70 or part 71 of this chapter.

**Title V operating permit regulations** means the regulations that the Administrator has approved or issued as meeting the requirements of title V of the Clean Air Act and part 70 or 71 of this chapter.

**Ton** means 2,000 pounds. For the purpose of determining compliance with the CAIR NOₓ Ozone Season emissions limitation, total tons of nitrogen oxides emissions for a control period shall be calculated as the sum of all recorded hourly emissions (or the mass equivalent of the recorded hourly emission rates) in accordance with subpart HHHH of this part, but with any remaining fraction of a ton equal to or greater than 0.50 tons deemed to equal one ton and any remaining fraction of a ton less than 0.50 tons deemed to equal zero tons.

**Topping-cycle cogeneration unit** means a cogeneration unit in which the energy input to the unit is first used to produce useful power, including electricity, and at least some of the reject heat from the electricity production is then used to provide useful thermal energy.

**Total energy input** means, with regard to a cogeneration unit, total energy of all forms supplied to the cogeneration unit, excluding energy produced by the cogeneration unit itself. Each form of energy supplied shall be measured by the lower heating value of that form of energy calculated as follows:

\[
LHV = HHV - 10.55(W + 9H)
\]

Where:

- **LHV** = lower heating value of fuel in Btu/lb,
- **HHV** = higher heating value of fuel in Btu/lb,
- **W** = Weight % of moisture in fuel, and
- **H** = Weight % of hydrogen in fuel.

**Total energy output** means, with regard to a cogeneration unit, the sum of useful power and useful thermal energy produced by the cogeneration unit.

**Unit** means a stationary, fossil-fuel-fired boiler or combustion turbine or other stationary, fossil-fuel-fired combustion device.

**Unit operating day** means a calendar day in which a unit combusts any fuel.

**Unit operating hour or hour of unit operation** means an hour in which a unit combusts any fuel.

**Useful power** means, with regard to a cogeneration unit, electricity or mechanical energy made available for use, excluding any such energy used in the power production process (which process includes, but is not limited to, any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls).

**Useful thermal energy** means, with regard to a cogeneration unit, thermal energy that is:

1. Made available to an industrial or commercial process (not a power production process), excluding any heat contained in condensate return or makeup water;
2. Used in a heating application (e.g., space heating or domestic hot water heating); or
3. Used in a space cooling application (i.e., thermal energy used by an absorption chiller).

**Utility power distribution system** means the portion of an electricity grid owned or operated by a utility and dedicated to delivering electricity to customers.

§ 96.304 Applicability.

(a) Except as provided in paragraph (b) of this section:

(1) The following units in a State shall be CAIR NO\textsubscript{X} Ozone Season units, and any source that includes one or more such units shall be a CAIR NO\textsubscript{X} Ozone Season source, subject to the requirements of this subpart and subparts BBBB through HHHH of this part: any stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine serving at any time, since the later of November 15, 1990 or the start-up of the unit’s combustion chamber, a generator with nameplate capacity of more than 25 MWe producing electricity for sale.

(2) If a stationary boiler or stationary combustion turbine that, under paragraph (a)(1) of this section, is not a CAIR NO\textsubscript{X} Ozone Season unit begins to combust fossil fuel or to serve a generator with nameplate capacity of more than 25 MWe producing electricity for sale, the unit shall become a CAIR NO\textsubscript{X} Ozone Season unit as provided in paragraph (a)(1) of this section on the first date on which it both combusts fossil fuel and serves such generator.

(b) The units in a State that meet the requirements set forth in paragraph (b)(1)(i), (b)(2)(i), or (b)(2)(ii) of this section shall not be CAIR NO\textsubscript{X} Ozone Season units:

(i) Any unit that is a CAIR NO\textsubscript{X} Ozone Season unit under paragraph (a)(1) or (2) of this section, is not a CAIR NO\textsubscript{X} Ozone Season unit beginning to combust fossil fuel or to serve a generator with nameplate capacity of more than 25 MWe producing electricity for sale, the unit shall become a CAIR NO\textsubscript{X} Ozone Season unit as provided in paragraph (a)(1) of this section on the first date on which it both combusts fossil fuel and serves such generator.

(ii) Any unit that is a CAIR NO\textsubscript{X} Ozone Season unit under paragraph (a)(1) or (2) of this section commencing operation on or after January 1, 1985:

(A) Qualifying as a solid waste incineration unit; and

(B) With an average annual fuel consumption of non-fossil fuel for the first 3 calendar years of operation exceeding 80 percent (on a Btu basis) and an average annual fuel consumption of non-fossil fuel for any 3 consecutive calendar years after 1990 exceeding 80 percent (on a Btu basis).

(iii) If a unit qualifies as a solid waste incineration unit and meets the requirements of paragraph (b)(2)(i) or (ii) of this section for at least 3 consecutive calendar years, but subsequently no longer meets all such requirements, the unit shall become a CAIR NO\textsubscript{X} Ozone Season unit starting on the earlier of January 1 after the first calendar year during which the unit first no longer qualifies as a cogeneration unit or January 1 after the first calendar year during which the unit no longer meets the requirements of paragraph (b)(1)(i) or (ii) of this section.

(2)(i) Any unit that is a CAIR NO\textsubscript{X} Ozone Season unit under paragraph (a)(1) or (2) of this section commencing operation before January 1, 1985:

(A) Qualifying as a solid waste incineration unit; and

(B) With an average annual fuel consumption of non-fossil fuel for the first 3 calendar years of operation exceeding 80 percent (on a Btu basis) and an average annual fuel consumption of non-fossil fuel for any 3 consecutive calendar years after 1990 exceeding 80 percent (on a Btu basis).

(B) With an average annual fuel consumption of non-fossil fuel for the first 3 calendar years of operation exceeding 80 percent (on a Btu basis) and an average annual fuel consumption of non-fossil fuel for any 3 consecutive calendar years after 1990 exceeding 80 percent (on a Btu basis).
years after 1990 for which the unit has an average annual fuel consumption of fossil fuel of 20 percent or more.


§ 96.305 Retired unit exemption.

(a)(1) Any CAIR NO\textsubscript{X} Ozone Season unit that is permanently retired and is not a CAIR NO\textsubscript{X} Ozone Season opt-in unit under subpart IIII of this part shall be exempt from the CAIR NO\textsubscript{X} Ozone Season Trading Program, except for the provisions of this section, §96.322, §96.303, §96.304, §96.306(c)(4) through (7), §96.307, §96.308, and subparts BBBB and EEEE through GGGG of this part.

(2) The exemption under paragraph (a)(1) of this section shall become effective the day on which the CAIR NO\textsubscript{X} Ozone Season unit is permanently retired. Within 30 days of the unit’s permanent retirement, the CAIR designated representative shall submit a statement to the permitting authority otherwise responsible for administering any CAIR permit for the unit and shall submit a copy of the statement to the Administrator. The statement shall state, in a format prescribed by the permitting authority, that the unit was permanently retired on a specific date and will comply with the requirements of paragraph (b) of this section.

(3) After receipt of the statement under paragraph (a)(2) of this section, the permitting authority will amend any permit under subpart CCC of this part covering the source at which the unit is located to add the provisions and requirements of the exemption under paragraphs (a)(1) and (b) of this section.

(b) Special provisions.

(1) A unit exempt under paragraph (a) of this section shall not emit any nitrogen oxides, starting on the date that the exemption takes effect.

(2) The permitting authority will allocate CAIR NO\textsubscript{X} Ozone Season allowances under subpart EEEE of this part to a unit exempt under paragraph (a) of this section.

(3) For a period of 5 years from the date the records are created, the owners and operators of a unit exempt under paragraph (a) of this section shall retain, at the source that includes the unit, records demonstrating that the unit is permanently retired. The 5-year period for keeping records may be extended for cause, at any time before the end of the period, in writing by the permitting authority or the Administrator. The owners and operators bear the burden of proof that the unit is permanently retired.

(4) The owners and operators and, to the extent applicable, the CAIR designated representative of a unit exempt under paragraph (a) of this section shall comply with the requirements of the CAIR NO\textsubscript{X} Ozone Season Trading Program concerning all periods for which the exemption is not in effect, even if such requirements arise, or must be complied with, after the exemption takes effect.

(5) A unit exempt under paragraph (a) of this section and located at a source that is required, or but for this exemption would be required, to have a Title V operating permit shall not resume operation unless the CAIR designated representative of the source submits a complete CAIR permit application under §96.322 for the unit not less than 18 months (or such lesser time provided by the permitting authority) before the later of January 1, 2009 or the date on which the unit resumes operation.

(6) On the earlier of the following dates, a unit exempt under paragraph (a) of this section shall lose its exemption:

(i) The date on which the CAIR designated representative submits a CAIR permit application for the unit under paragraph (b)(5) of this section;

(ii) The date on which the CAIR designated representative is required under paragraph (b)(5) of this section to submit a CAIR permit application for the unit; or

(iii) The date on which the unit resumes operation, if the CAIR designated representative is not required to submit a CAIR permit application for the unit.

(7) For the purpose of applying monitoring, reporting, and recordkeeping requirements under subpart HHHH of this part, a unit that loses its exemption under paragraph (a) of this section shall be treated as a unit that commences commercial operation on the...
§ 96.306 Standard requirements.

(a) Permit requirements. (1) The CAIR designated representative of each CAIR NO\textsubscript{X} Ozone Season source required to have a title V operating permit and each CAIR NO\textsubscript{X} Ozone Season unit required to have a title V operating permit at the source shall:

(i) Submit to the permitting authority a complete CAIR permit application under §96.322 in accordance with the deadlines specified in §96.321; and

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review a CAIR permit application and issue or deny a CAIR permit.

(2) The owners and operators of each CAIR NO\textsubscript{X} Ozone Season source required to have a title V operating permit and each CAIR NO\textsubscript{X} Ozone Season unit required to have a title V operating permit at the source shall have a CAIR permit issued by the permitting authority under subpart CCCC of this part for the source and operate the source and the unit in compliance with such CAIR permit.

(3) Except as provided in subpart IIII of this part, the owners and operators of a CAIR NO\textsubscript{X} Ozone Season source that is not otherwise required to have a title V operating permit and each CAIR NO\textsubscript{X} Ozone Season unit that is not otherwise required to have a title V operating permit are not required to submit a CAIR permit application, and to have a CAIR permit, under subpart CCCC of this part for such CAIR NO\textsubscript{X} Ozone Season source and such CAIR NO\textsubscript{X} Ozone Season unit.

(b) Monitoring, reporting, and recordkeeping requirements. (1) The owners and operators, and the CAIR designated representative, of each CAIR NO\textsubscript{X} Ozone Season source and each CAIR NO\textsubscript{X} Ozone Season unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of subpart HHHH of this part.

(2) The emissions measurements recorded and reported in accordance with subpart HHHH of this part shall be used to determine compliance by each CAIR NO\textsubscript{X} Ozone Season source with the CAIR NO\textsubscript{X} Ozone Season emissions limitation under paragraph (c) of this section.

(c) Nitrogen oxides ozone season emission requirements. (1) As of the allowance transfer deadline for a control period, the owners and operators of each CAIR NO\textsubscript{X} Ozone Season source and each CAIR NO\textsubscript{X} Ozone Season unit at the source shall hold, in the source’s compliance account, CAIR NO\textsubscript{X} Ozone Season allowances available for compliance deductions for the control period under §96.334(a) in an amount not less than the tons of total nitrogen oxides emissions for the control period from all CAIR NO\textsubscript{X} Ozone Season units at the source, as determined in accordance with subpart HHHH of this part.

(2) A CAIR NO\textsubscript{X} Ozone Season unit shall be subject to the requirements under paragraph (c)(1) of this section for the control period starting on the later of May 1, 2009 or the deadline for meeting the unit’s monitor certification requirements under §96.370(b)(1), (2), (3), or (7) and for each control period thereafter.

(3) A CAIR NO\textsubscript{X} Ozone Season allowance shall not be deducted, for compliance with the requirements under paragraph (c)(1) of this section, for a control period in a calendar year before the year for which the CAIR NO\textsubscript{X} Ozone Season allowance was allocated.

(4) CAIR NO\textsubscript{X} Ozone Season allowances shall be held in, deducted from, or transferred into or among CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System accounts in accordance with subparts FFFF, GGGG, and IIII of this part.

(5) A CAIR NO\textsubscript{X} Ozone Season allowance is a limited authorization to emit one ton of nitrogen oxides in accordance with the CAIR NO\textsubscript{X} Ozone Season Trading Program. No provision of the CAIR NO\textsubscript{X} Ozone Season Trading Program, the CAIR permit, or any exemption under §96.305 and no provision of law shall be construed to limit the authority of the State or the United States to terminate or limit such authorization.

(6) A CAIR NO\textsubscript{X} Ozone Season allowance does not constitute a property right.
§ 96.306

(7) Upon recordation by the Administrator under subpart FFFF, GGGG, or IIII of this part, every allocation, transfer, or deduction of a CAIR NO\textsubscript{X} Ozone Season allowance to or from a CAIR NO\textsubscript{X} Ozone Season source’s compliance account is incorporated automatically in any CAIR permit of the source.

d) Excess emissions requirements. If a CAIR NO\textsubscript{X} Ozone Season source emits nitrogen oxides during any control period in excess of the CAIR NO\textsubscript{X} Ozone Season emissions limitation, then:

1. The owners and operators of the source and each CAIR NO\textsubscript{X} Ozone Season unit at the source shall surrender the CAIR NO\textsubscript{X} Ozone Season allowances required for deduction under §96.354(d)(1) and pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act or applicable State law; and

2. Each ton of such excess emissions and each day of such control period shall constitute a separate violation of this subpart, the Clean Air Act, and applicable State law.

e) Recordkeeping and reporting requirements. (1) Unless otherwise provided, the owners and operators of the CAIR NO\textsubscript{X} Ozone Season source and each CAIR NO\textsubscript{X} Ozone Season unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the permitting authority or the Administrator.

1. The certificate of representation under §96.313 for the CAIR designated representative for the source and each CAIR NO\textsubscript{X} Ozone Season unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation under §96.313 changing the CAIR designated representative.

2. All emissions monitoring information, in accordance with subpart HHHH of this part, provided that to the extent that subpart HHHH of this part provides for a 3-year period for recordkeeping, the 3-year period shall apply.

(iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the CAIR NO\textsubscript{X} Ozone Season Trading Program.

(iv) Copies of all documents used to complete a CAIR permit application and any other submission under the CAIR NO\textsubscript{X} Ozone Season Trading Program or to demonstrate compliance with the requirements of the CAIR NO\textsubscript{X} Ozone Season Trading Program.

2. The CAIR designated representative of a CAIR NO\textsubscript{X} Ozone Season source and each CAIR NO\textsubscript{X} Ozone Season unit at the source shall submit the reports required under the CAIR NO\textsubscript{X} Ozone Season Trading Program, including those under subpart HHHH of this part.

(f) Liability. (1) Each CAIR NO\textsubscript{X} Ozone Season source and each CAIR NO\textsubscript{X} Ozone Season unit shall meet the requirements of the CAIR NO\textsubscript{X} Ozone Season Trading Program.

2. Any provision of the CAIR NO\textsubscript{X} Ozone Season Trading Program that applies to a CAIR NO\textsubscript{X} Ozone Season source or the CAIR designated representative of a CAIR NO\textsubscript{X} Ozone Season source shall also apply to the owners and operators of such source and of the CAIR NO\textsubscript{X} Ozone Season units at the source.

3. Any provision of the CAIR NO\textsubscript{X} Ozone Season Trading Program that applies to a CAIR NO\textsubscript{X} Ozone Season unit or the CAIR designated representative of a CAIR NO\textsubscript{X} Ozone Season unit shall also apply to the owners and operators of such unit.

(g) Effect on other authorities. No provision of the CAIR NO\textsubscript{X} Ozone Season Trading Program, a CAIR permit application, a CAIR permit, or an exemption under §96.305 shall be construed as exempting or excluding the owners and operators, and the CAIR designated representative, of a CAIR NO\textsubscript{X} Ozone Season source or CAIR NO\textsubscript{X} Ozone Season unit from compliance with any other provision of the applicable, approved State implementation plan, a
federally enforceable permit, or the Clean Air Act.

[70 FR 25382, May 12, 2005, as amended at 71 FR 25393, Apr. 28, 2006]

§ 96.307 Computation of time.

(a) Unless otherwise stated, any time period scheduled, under the CAIR NOX Ozone Season Trading Program, to begin on the occurrence of an act or event shall begin on the day the act or event occurs.

(b) Unless otherwise stated, any time period scheduled, under the CAIR NOX Ozone Season Trading Program, to begin before the occurrence of an act or event shall be computed so that the period ends the day before the act or event occurs.

(c) Unless otherwise stated, if the final day of any time period, under the CAIR NOX Ozone Season Trading Program, falls on a weekend or a State or Federal holiday, the time period shall be extended to the next business day.

§ 96.308 Appeal procedures.

The appeal procedures for decisions of the Administrator under the CAIR NOX Ozone Season Trading Program are set forth in part 78 of this chapter.

Subpart BBBB—CAIR Designated Representative for CAIR NOX Ozone Season Sources

SOURCE: 70 FR 25382, May 12, 2005, unless otherwise noted.

§ 96.310 Authorization and responsibilities of CAIR designated representative.

(a) Except as provided under §96.311, each CAIR NOX Ozone Season source, including all CAIR NOX Ozone Season units at the source, shall have one and only one CAIR designated representative, with regard to all matters under the CAIR NOX Ozone Season Trading Program concerning the source or any CAIR NOX Ozone Season unit at the source.

(b) The CAIR designated representative of the CAIR NOX Ozone Season source shall be selected by an agreement binding on the owners and operators of the source and all CAIR NOX Ozone Season units at the source and shall act in accordance with the certification statement in §96.313(a)(4)(iv).

(c) Upon receipt by the Administrator of a complete certificate of representation under §96.313, the CAIR designated representative of the source shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each owner and operator of the CAIR NOX Ozone Season source represented and each CAIR NOX Ozone Season unit at the source in all matters pertaining to the CAIR NOX Ozone Season Trading Program, notwithstanding any agreement between the CAIR designated representative and such owners and operators. The owners and operators shall be bound by any decision or order issued to the CAIR designated representative by the permitting authority, the Administrator, or a court regarding the source or unit.

(d) No CAIR permit will be issued, no emissions data reports will be accepted, and no CAIR NOX Ozone Season Allowance Tracking System account will be established for a CAIR NOX Ozone Season unit at a source, until the Administrator has received a complete certificate of representation under §96.313 for a CAIR designated representative of the source and the CAIR NOX Ozone Season units at the source.

(e)(1) Each submission under the CAIR NOX Ozone Season Trading Program shall be submitted, signed, and certified by the CAIR designated representative for each CAIR NOX Ozone Season source on behalf of which the submission is made. Each such submission shall include the following certification statement by the CAIR designated representative: “I am authorized to make this submission on behalf of the owners and operators of the source or units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for..."
submitting false statements and information or omitting required state-
ments and information, including the possibility of fine or imprisonment.”

(2) The permitting authority and the Administrator will accept or act on a
submission made on behalf of owner or operators of a CAIR NO\textsubscript{X} Ozone Season
source or a CAIR NO\textsubscript{X} Ozone Season unit only if the submission has been
made, signed, and certified in accordance with paragraph (e)(1) of this sec-
tion.

§ 96.311 Alternate CAIR designated representative.

(a) A certificate of representation under §96.313 may designate one and
only one alternate CAIR designated representative, who may act on behalf
of the CAIR designated representative. The agreement by which the alternate
CAIR designated representative is selected shall include a procedure for au-
thorizing the alternate CAIR designated representative to act in lieu of
the CAIR designated representative.

(b) Upon receipt by the Adminis-
trator of a complete certificate of rep-
resentation under §96.313, any rep-
resentation, action, inaction, or sub-
mission by the alternate CAIR des-
ignated representative shall be deemed
to be a representation, action, inac-
tion, or submission by the CAIR des-
ignated representative.

(c) Except in this section and
§§96.302, 96.310(a) and (d), 96.312, 96.313,
96.315, and 96.351, and 96.392 whenever the
term “CAIR designated representa-
tive” is used in subparts AAA through III of this part, the term shall
be construed to include the CAIR des-
ignated representative or any alternate CAIR designated representative.

[70 FR 25382, May 12, 2005, as amended at 71 FR 25393, Apr. 28, 2006]

§ 96.312 Changing CAIR designated representative and alternate CAIR designated representative; changes in owners and operators.

(a) Changing CAIR designated representative. The CAIR designated rep-
resentative may be changed at any time upon receipt by the Adminis-
trator of a superseding complete cer-
tificate of representation under §96.313. Notwithstanding any such change, all
representations, actions, inactions, and submissions by the previous CAIR des-
ignated representative before the time and date when the Administrator re-
cives the superseding certificate of representation shall be binding on the
new CAIR designated representative and the owners and operators of the
CAIR NO\textsubscript{X} Ozone Season source and the
CAIR NO\textsubscript{X} Ozone Season units at the
source.

(b) Changing alternate CAIR designated representative. The alternate CAIR des-
ignated representative may be changed at any time upon receipt by the Ad-
ministrator of a superseding complete certificate of representation under
§96.313. Notwithstanding any such change, all representations, actions, inac-
tions, and submissions by the pre-
vious alternate CAIR designated repre-
sentative before the time and date
when the Administrator receives the
superseding certificate of representa-
tion shall be binding on the new alter-
native CAIR designated representative
and the owners and operators of the
CAIR NO\textsubscript{X} Ozone Season source and the
CAIR NO\textsubscript{X} Ozone Season units at the
source.

(c) Changes in owners and operators.

(1) In the event an owner or operator of
a CAIR NO\textsubscript{X} Ozone Season source or a
CAIR NO\textsubscript{X} Ozone Season unit is not in-
cluded in the list of owners and opera-
tors in the certificate of representation
under §96.313, such owner or operator
shall be deemed to be subject to and
bound by the certificate of representa-
tion, the representations, actions, inac-
tions, and submissions of the CAIR des-
ignated representative and any alter-
nate CAIR designated representative
of the source or unit, and the decisions
and orders of the permitting authority,
the Administrator, or a court, as if the
owner or operator were included in
such list.

(2) Within 30 days following any
change in the owners and operators of
a CAIR NO\textsubscript{X} Ozone Season source or a
CAIR NO\textsubscript{X} Ozone Season unit, includ-
ing the addition of a new owner or op-
erator, the CAIR designated representa-
tive or any alternate CAIR designated representative shall submit a revision
to the certificate of representation
Environmental Protection Agency § 96.314

under §96.313 amending the list of owners and operators to include the change.

[70 FR 25382, May 12, 2005, as amended at 71 FR 25393, Apr. 28, 2006]

§ 96.313 Certificate of representation.

(a) A complete certificate of representation for a CAIR designated representative or an alternate CAIR designated representative shall include the following elements in a format prescribed by the Administrator:

(1) Identification of the CAIR NO\textsubscript{X} Ozone Season source, and each CAIR NO\textsubscript{X} Ozone Season unit at the source, for which the certificate of representation is submitted, including identification and nameplate capacity of each generator served by each such unit.

(2) The name, address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the CAIR designated representative and any alternate CAIR designated representative.

(3) A list of the owners and operators of the CAIR NO\textsubscript{X} Ozone Season source and of each CAIR NO\textsubscript{X} Ozone Season unit at the source.

(4) The following certification statements by the CAIR designated representative and any alternate CAIR designated representative—

(i) “I certify that I was selected as the CAIR designated representative or alternate CAIR designated representative, as applicable, by an agreement binding on the owners and operators of the source and each CAIR NO\textsubscript{X} Ozone Season unit at the source.”

(ii) “I certify that I have all the necessary authority to carry out my duties and responsibilities under the CAIR NO\textsubscript{X} Ozone Season Trading Program on behalf of the owners and operators of the source and each CAIR NO\textsubscript{X} Ozone Season unit at the source and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions.”

(iii) “I certify that the owners and operators of the source and of each CAIR NO\textsubscript{X} Ozone Season unit at the source shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.”

(iv) “Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, a CAIR NO\textsubscript{X} Ozone Season unit, or where a utility or industrial customer purchases power from a CAIR NO\textsubscript{X} Ozone Season unit under a life-of-the-unit, firm power contractual arrangement, I certify that: I have given a written notice of my selection as the ‘CAIR designated representative’ or ‘alternate CAIR designated representative’, as applicable, and of the agreement by which I was selected to each owner and operator of the source and of each CAIR NO\textsubscript{X} Ozone Season unit at the source; and CAIR NO\textsubscript{X} Ozone Season allowances and proceeds of transactions involving CAIR NO\textsubscript{X} Ozone Season allowances will be deemed to be held or distributed in proportion to each holder’s legal, equitable, leasehold, or contractual reservation or entitlement, except that, if such multiple holders have expressly provided for a different distribution of CAIR NO\textsubscript{X} Ozone Season allowances by contract, CAIR NO\textsubscript{X} Ozone Season allowances and proceeds of transactions involving CAIR NO\textsubscript{X} Ozone Season allowances will be deemed to be held or distributed in accordance with the contract.”

(5) The signature of the CAIR designated representative and any alternate CAIR designated representative and the dates signed.

(b) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the certificate of representation shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

[70 FR 25382, May 12, 2005, as amended at 71 FR 25393, Apr. 28, 2006]

§ 96.314 Objections concerning CAIR designated representative.

(a) Once a complete certificate of representation under §96.313 has been submitted and received, the permitting authority and the Administrator will rely on the certificate of representation unless and until a superseding complete certificate of representation
§ 96.315 Delegation by CAIR designated representative and alternate CAIR designated representative.

(a) A CAIR designated representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under this part.

(b) An alternate CAIR designated representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under this part.

(c) In order to delegate authority to make an electronic submission to the Administrator in accordance with paragraph (a) or (b) of this section, the CAIR designated representative or alternate CAIR designated representative, as appropriate, must submit to the Administrator a notice of delegation, in a format prescribed by the Administrator, that includes the following elements:

(1) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of each such natural person (referred to as an “agent”);

(2) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of each such natural person (referred to as an “agent”);

(3) For each such natural person, a list of the type or types of electronic submissions under paragraph (a) or (b) of this section for which authority is delegated to him or her; and

(4) The following certification statements by such CAIR designated representative or alternate CAIR designated representative:

(i) “I agree that any electronic submission to the Administrator that is by an agent identified in this notice of delegation and of a type listed for such agent in this notice of delegation and that is made when I am a CAIR designated representative or alternate CAIR designated representative, as appropriate, and before this notice of delegation is superseded by another notice of delegation under 40 CFR 96.315(d) shall be deemed to be an electronic submission by me.”

(ii) “Until this notice of delegation is superseded by another notice of delegation under 40 CFR 96.315(d), I agree to maintain an e-mail account and to notify the Administrator immediately of any change in my e-mail address unless all delegation of authority by me under 40 CFR 96.315 is terminated.”

(d) A notice of delegation submitted under paragraph (c) of this section shall be effective, with regard to the CAIR designated representative or alternate CAIR designated representative identified in such notice, upon receipt of such notice by the Administrator and until receipt by the Administrator of a superseding notice of delegation submitted by such CAIR designated representative or alternate CAIR designated representative, as appropriate. The superseding notice of delegation may replace any previously identified agent, add a new agent, or eliminate entirely any delegation of authority.

(e) Any electronic submission covered by the certification in paragraph
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(c)(4)(i) of this section and made in accordance with a notice of delegation effective under paragraph (d) of this section shall be deemed to be an electronic submission by the CAIR designated representative or alternate CAIR designated representative submitting such notice of delegation.

[71 FR 25393, Apr. 28, 2006]

Subpart CCCC—Permits

SOURCE: 70 FR 25382, May 12, 2005, unless otherwise noted.

§ 96.320 General CAIR NOX Ozone Season Trading Program permit requirements.

(a) For each CAIR NOX Ozone Season source required to have a title V operating permit or required, under subpart III of this part, to have a title V operating permit or other federally enforceable permit, such permit shall include a CAIR permit administered by the permitting authority for the title V operating permit or the federally enforceable permit as applicable. The CAIR portion of the title V permit or other federally enforceable permit as applicable shall be administered in accordance with the permitting authority’s title V operating permits regulations promulgated under part 70 or 71 of this chapter or the permitting authority’s regulations for other federally enforceable permits as applicable, except as provided otherwise by §96.305, this subpart and subpart III of this part.

(b) Each CAIR permit shall contain, with regard to the CAIR NOX Ozone Season source and the CAIR NOX Ozone Season units at the source covered by the CAIR permit, all applicable CAIR NOX Ozone Season Trading Program, CAIR NOX Annual Trading Program, and CAIR SO2 Trading Program requirements and shall be a complete and separable portion of the title V operating permit or other federally enforceable permit under paragraph (a) of this section.

[70 FR 25382, May 12, 2005, as amended at 71 FR 25394, Apr. 28, 2006]

§ 96.321 Submission of CAIR permit applications.

(a) Duty to apply. The CAIR designated representative of any CAIR NOX Ozone Season source required to have a title V operating permit shall submit to the permitting authority a complete CAIR permit application under §96.322 for the source covering each CAIR NOX Ozone Season unit at the source at least 18 months (or such lesser time provided by the permitting authority) before the later of January 1, 2009 or the date on which the CAIR NOX Ozone Season unit commences commercial operation, except as provided in §96.383(a).

(b) Duty to Reapply. For a CAIR NOX Ozone Season source required to have a title V operating permit, the CAIR designated representative shall submit a complete CAIR permit application under §96.322 for the source covering each CAIR NOX Ozone Season unit at the source to renew the CAIR permit in accordance with the permitting authority’s title V operating permits regulations addressing permit renewal, except as provided in §96.383(b).

[70 FR 25382, May 12, 2005, as amended at 71 FR 25394, Apr. 28, 2006]

§ 96.322 Information requirements for CAIR permit applications.

A complete CAIR permit application shall include the following elements concerning the CAIR NOX Ozone Season source for which the application is submitted, in a format prescribed by the permitting authority:

(a) Identification of the CAIR NOX Ozone Season source;

(b) Identification of each CAIR NOX Ozone Season unit at the CAIR NOX Ozone Season source; and

(c) The standard requirements under §96.306.

§ 96.323 CAIR permit contents and term.

(a) Each CAIR permit will contain, in a format prescribed by the permitting authority, all elements required for a complete CAIR permit application under §96.322.

(b) Each CAIR permit is deemed to incorporate automatically the definitions of terms under §96.302 and, upon recordation by the Administrator
§ 96.324 CAIR permit revisions.

Except as provided in §96.323(b), the permitting authority will revise the CAIR permit, as necessary, in accordance with the permitting authority’s title V operating permits regulations or the permitting authority’s regulations for other federally enforceable permits as applicable addressing permit revisions.

Subpart DDDD [Reserved]

Subpart EEEE—CAIR NO\textsubscript{X} Ozone Season Allowance Allocations

SOURCE: 70 FR 25382, May 12, 2005, unless otherwise noted.

§ 96.340 State trading budgets.

(a) Except as provided in paragraph (b) of this section, the State trading budgets for annual allocations of CAIR NO\textsubscript{X} Ozone Season allowances for the control periods in 2009 through 2014 and in 2015 and thereafter are respectively as follows:

<table>
<thead>
<tr>
<th>State</th>
<th>State trading budget for 2009–2014 (tons)</th>
<th>State trading budget for 2015 and thereafter (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>32,182</td>
<td>26,818</td>
</tr>
<tr>
<td>Arkansas</td>
<td>11,515</td>
<td>9,596</td>
</tr>
<tr>
<td>Connecticut</td>
<td>2,559</td>
<td>2,559</td>
</tr>
<tr>
<td>Delaware</td>
<td>2,226</td>
<td>1,855</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>112</td>
<td>94</td>
</tr>
<tr>
<td>Florida</td>
<td>47,912</td>
<td>39,926</td>
</tr>
<tr>
<td>Illinois</td>
<td>30,701</td>
<td>28,981</td>
</tr>
<tr>
<td>Indiana</td>
<td>45,952</td>
<td>39,273</td>
</tr>
<tr>
<td>Iowa</td>
<td>14,263</td>
<td>11,886</td>
</tr>
<tr>
<td>Kentucky</td>
<td>36,045</td>
<td>30,587</td>
</tr>
<tr>
<td>Louisiana</td>
<td>17,085</td>
<td>14,238</td>
</tr>
<tr>
<td>Maryland</td>
<td>12,834</td>
<td>10,695</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>7,551</td>
<td>6,233</td>
</tr>
<tr>
<td>Michigan</td>
<td>28,917</td>
<td>24,142</td>
</tr>
<tr>
<td>Mississippi</td>
<td>8,714</td>
<td>7,262</td>
</tr>
<tr>
<td>Missouri</td>
<td>26,678</td>
<td>22,231</td>
</tr>
</tbody>
</table>

(b) If a permitting authority issues additional CAIR NO\textsubscript{X} Ozone Season allowance allocations under §51.123(aa)(2)(iii)(A) of this chapter, the amount in the State trading budget for a control period in a calendar year will be the sum of the amount set forth for the State and for the year in paragraph (a) of this section and the amount of additional CAIR NO\textsubscript{X} Ozone Season allowance allocations issued under §51.123(aa)(2)(iii)(A) of this chapter for the year.

§ 96.341 Timing requirements for CAIR NO\textsubscript{X} Ozone Season allowance allocations.

(a) By October 31, 2006, the permitting authority will submit to the Administrator the CAIR NO\textsubscript{X} Ozone Season allowance allocations, in a format prescribed by the Administrator and in accordance with §96.342(a) and (b), for the control periods in 2009, 2010, 2011, 2012, 2013, and 2014.

(b) By October 31, 2009 and October 31 of each year thereafter, the permitting authority will submit to the Administrator the CAIR NO\textsubscript{X} Ozone Season allowance allocations, in a format prescribed by the Administrator and in accordance with §96.342(a) and (b), for the control period in the sixth year after the year of the applicable deadline for submission under this paragraph.

(c) By July 31, 2009 and July 31 of each year thereafter, the permitting authority will submit to the Administrator the CAIR NO\textsubscript{X} Ozone Season allowance allocations, in a format prescribed by the Administrator and in accordance with §96.342(c), (a), and (d), for the control period in the year of the applicable deadline for submission under this paragraph.

[70 FR 25382, May 12, 2005, as amended at 71 FR 25394, Apr. 28, 2006]
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§ 96.342 CAIR NO\textsubscript{X} Ozone Season allowance allocations.

(a)(1) The baseline heat input (in mmBtu) used with respect to CAIR NO\textsubscript{X} Ozone Season allowance allocations under paragraph (b) of this section for each CAIR NO\textsubscript{X} Ozone Season unit will be:

(i) For units commencing operation before January 1, 2001, the average of the 3 highest amounts of the unit’s adjusted control period heat input for 2000 through 2004, with the adjusted control period heat input for each year calculated as follows:

(A) If the unit is coal-fired during the year, the unit’s control period heat input for such year is multiplied by 100 percent;

(B) If the unit is oil-fired during the year, the unit’s control period heat input for such year is multiplied by 60 percent; and

(C) If the unit is not subject to paragraph (a)(1)(i)(A) or (B) of this section, the unit’s control period heat input for such year is multiplied by 40 percent.

(ii) For units commencing operation on or after January 1, 2001, and operating each calendar year during a period of 5 or more consecutive calendar years, the average of the 3 highest amounts of the unit’s total converted control period heat input over the first such 5 years.

(2)(i) A unit’s control period heat input, and a unit’s status as coal-fired or oil-fired, for a calendar year under paragraph (a)(1)(i) of this section, and a unit’s total tons of NO\textsubscript{X} emissions during a control period in a calendar year under paragraph (c)(3) of this section, will be determined in accordance with part 75 of this chapter, to the extent the unit was otherwise subject to the requirements of part 75 of this chapter for the year, or will be based on the best available data reported to the permitting authority for the unit, to the extent the unit was not otherwise subject to the requirements of part 75 of this chapter for the year.

(ii) A unit’s converted control period heat input for a calendar year specified under paragraph (a)(1)(ii) of this section equals:

(A) Except as provided in paragraph (a)(2)(ii)(B) or (C) of this section, the control period gross electrical output of the generator or generators served by the unit multiplied by 7,900 Btu/kWh, if the unit is coal-fired for the year, or 6,675 Btu/kWh, if the unit is not coal-fired for the year, and divided by 1,000,000 Btu/mmBtu, provided that if a generator is served by 2 or more units, the gross electrical output of the generator will be attributed to each unit in proportion to the unit’s share of the total control period heat input of such units for the year;

(B) For a unit that is a boiler and has equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy, the total heat energy (in Btu) of the steam produced by the boiler during the control period, divided by 0.8 and by 1,000,000 Btu/mmBtu;

(C) For a unit that is a combustion turbine and has equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy, the control period gross electrical output of the enclosed device comprising the compressor, combustor, and turbine multiplied by 3,413 Btu/kWh, plus the total heat energy (in Btu) of the steam produced by any associated heat recovery steam generator during the control period divided by 0.8, and with the sum divided by 1,000,000 Btu/mmBtu.

(b)(1) For each control period in 2009 and thereafter, the permitting authority will allocate to all CAIR NO\textsubscript{X} Ozone Season units in the State that have a baseline heat input (as determined under paragraph (a) of this section) a total amount of CAIR NO\textsubscript{X} Ozone Season allowances equal to 95 percent for a control period during 2009 through 2014, and 97 percent for a control period during 2015 and thereafter, of the tons of NO\textsubscript{X} emissions in the State trading budget under §96.340 (except as provided in paragraph (d) of this section).

(2) The permitting authority will allocate CAIR NO\textsubscript{X} Ozone Season allowances to each CAIR NO\textsubscript{X} Ozone Season unit under paragraph (b)(1) of this section in an amount determined by multiplying the total amount of CAIR NO\textsubscript{X} Ozone Season allowances allocated under paragraph (b)(1) of this section by the ratio of the baseline heat input
of such CAIR NO\textsubscript{X} Ozone Season unit to
the total amount of baseline heat input
of all such CAIR NO\textsubscript{X} Ozone Season
units in the State and rounding to the
nearest whole allowance as appropriate.

(c) For each control period in 2009
and thereafter, the permitting author-
it will allocate CAIR NO\textsubscript{X} Ozone Sea-
son allowances to CAIR NO\textsubscript{X} Ozone
Season units in a State that are not al-
located CAIR NO\textsubscript{X} Ozone Season allow-
ances under paragraph (b) of this sec-
tion because the units do not yet have
a baseline heat input under paragraph
(a) of this section or because the units
have a baseline heat input but all CAIR
NO\textsubscript{X} Ozone Season allowances available
under paragraph (b) of this section for
the control period are already allo-
cated, in accordance with the following
procedures:

(1) The permitting authority will es-
ablish a separate new unit set-aside
for each control period. Each new unit
set-aside will be allocated CAIR NO\textsubscript{X}
Ozone Season allowances equal to 5
percent for a control period in 2009
through 2014, and 3 percent for a con-
trol period in 2015 and thereafter, of
the amount of tons of NO\textsubscript{X} emissions in
the State trading budget under §96.340.

(2) The CAIR designated representa-
tive of such a CAIR NO\textsubscript{X} Ozone Season
unit may submit to the permitting au-
thority a request, in a format specified
by the permitting authority, to be allo-
cated CAIR NO\textsubscript{X} Ozone Season allow-
ances, starting with the later of the con-
trol period in 2009 or the first con-
trol period after the control period in
which the CAIR NO\textsubscript{X} Ozone Season unit
commences commercial operation and
until the first control period for which
the unit is allocated CAIR NO\textsubscript{X} Ozone
Season allowances under paragraph (b)
of this section. A separate CAIR NO\textsubscript{X}
Ozone Season allowance allocation re-
quest for each control period for which
CAIR NO\textsubscript{X} Ozone Season allowances are
sought must be submitted on or before
February 1 before such control period
and after the date on which the CAIR
NO\textsubscript{X} Ozone Season unit commences
commercial operation.

(3) In a CAIR NO\textsubscript{X} Ozone Season al-
lowance allocation request under para-
graph (c)(2) of this section, the CAIR
designated representative may request
for a control period CAIR NO\textsubscript{X} Ozone
Season allowances in an amount not
exceeding the CAIR NO\textsubscript{X} Ozone Season
unit’s total tons of NO\textsubscript{X} emissions dur-
ing the control period immediately be-
fore such control period.

(4) The permitting authority will re-
view each CAIR NO\textsubscript{X} Ozone Season al-
lowance allocation request under para-
graph (c)(2) of this section and will al-
locate CAIR NO\textsubscript{X} Ozone Season allow-
ances for each control period pursuant
to such request as follows:

(i) The permitting authority will ac-
cept an allowance allocation request
only if the request meets, or is ad-
justed by the permitting authority as
necessary to meet, the requirements of
paragraphs (c)(2) and (3) of this section.

(ii) On or after February 1 before the
control period, the permitting author-
ity will determine the sum of the CAIR
NO\textsubscript{X} Ozone Season allowances re-
quested (as adjusted under paragraph
(c)(4)(i) of this section) in all allowance
allocation requests accepted under
paragraph (c)(4)(i) of this section for
the control period.

(iii) If the amount of CAIR NO\textsubscript{X}
Ozone Season allowances in the new
unit set-aside for the control period is
greater than or equal to the sum under
paragraph (c)(4)(ii) of this section, then
the permitting authority will allocate
the amount of CAIR NO\textsubscript{X} Ozone Season
allowances requested (as adjusted
under paragraph (c)(4)(i) of this section)
to each CAIR NO\textsubscript{X} Ozone Season unit
covered by an allowance allocation
request accepted under paragraph
(c)(4)(i) of this section.

(iv) If the amount of CAIR NO\textsubscript{X}
Ozone Season allowances in the new
unit set-aside for the control period is
less than the sum under paragraph (c)(4)(ii)
of this section, then the permitting au-
thority will allocate to each CAIR NO\textsubscript{X}
Ozone Season unit covered by an al-
lowance allocation request accepted under
paragraph (c)(4)(i) of this section the
amount of the CAIR NO\textsubscript{X} Ozone Season
allowances requested (as adjusted
under paragraph (c)(4)(i) of this sec-
tion), multiplied by the amount of
CAIR NO\textsubscript{X} Ozone Season allowances in
the new unit set-aside for the control
period, divided by the sum determined
under paragraph (c)(4)(i) of this section, and rounded to the nearest whole allowance as appropriate.

(v) The permitting authority will notify each CAIR designated representative that submitted an allowance allocation request of the amount of CAIR NO\textsubscript{X} Ozone Season allowances (if any) allocated for the control period to the CAIR NO\textsubscript{X} Ozone Season unit covered by the request.

(d) If, after completion of the procedures under paragraph (c)(4) of this section for a control period, any unallocated CAIR NO\textsubscript{X} Ozone Season allowances remain in the new unit set-aside for the control period, the permitting authority will allocate to each CAIR NO\textsubscript{X} Ozone Season unit that was allocated CAIR NO\textsubscript{X} Ozone Season allowances under paragraph (b) of this section an amount of CAIR NO\textsubscript{X} Ozone Season allowances equal to the total amount of such remaining unallocated CAIR NO\textsubscript{X} Ozone Season allowances, multiplied by the unit’s allocation under paragraph (b) of this section, divided by 95 percent for a control period during 2009 through 2014, and 97 percent for a control period during 2015 and thereafter, of the amount of tons of NO\textsubscript{X} emissions in the State trading budget under §96.340, and rounded to the nearest whole allowance as appropriate.


Subpart FFFF—CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System

SOURCE: 70 FR 25382, May 12, 2005, unless otherwise noted.

§ 96.350 [Reserved]

§ 96.351 Establishment of accounts.

(a) Compliance accounts. Except as provided in §96.384(e), upon receipt of a complete certificate of representation under §96.313, the Administrator will establish a compliance account for the CAIR NO\textsubscript{X} Ozone Season source for which the certificate of representation was submitted, unless the source already has a compliance account.

(b) General accounts—(1) Application for general account. (i) Any person may apply to open a general account for the purpose of holding and transferring CAIR NO\textsubscript{X} Ozone Season allowances. An application for a general account may designate one and only one CAIR authorized account representative and one and only one alternate CAIR authorized account representative who may act on behalf of the CAIR authorized account representative. The agreement by which the alternate CAIR authorized account representative is selected shall include a procedure for authorizing the alternate CAIR authorized account representative to act in lieu of the CAIR authorized account representative.

(ii) A complete application for a general account shall be submitted to the Administrator and shall include the following elements in a format prescribed by the Administrator:

(A) Name, mailing address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the CAIR authorized account representative and any alternate CAIR authorized account representative;

(B) Organization name and type of organization, if applicable;

(C) A list of all persons subject to a binding agreement for the CAIR authorized account representative and any alternate CAIR authorized account representative to represent their ownership interest with respect to the CAIR NO\textsubscript{X} Ozone Season allowances held in the general account;

(D) The following certification statement by the CAIR authorized account representative and any alternate CAIR authorized account representative: ‘‘I certify that I was selected as the CAIR authorized account representative or the alternate CAIR authorized account representative, as applicable, by an agreement that is binding on all persons who have an ownership interest with respect to CAIR NO\textsubscript{X} Ozone Season allowances held in the general account. I certify that I have all the necessary authority to carry out my duties and responsibilities under the CAIR NO\textsubscript{X} Ozone Season Trading Program on behalf of such persons and that each such person shall be fully bound by my representations, actions,
inactions, or submissions and by any order or decision issued to me by the Administrator or a court regarding the general account.’’

(E) The signature of the CAIR authorized account representative and any alternate CAIR authorized account representative and the dates signed.

(iii) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the application for a general account shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

(2) Authorization of CAIR authorized account representative and alternate CAIR authorized account representative.

(i) Upon receipt by the Administrator of a complete application for a general account under paragraph (b)(1) of this section:

(A) The Administrator will establish a general account for the person or persons for whom the application is submitted.

(B) The CAIR authorized account representative and any alternate CAIR authorized account representative for the general account shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each person who has an ownership interest with respect to CAIR NOx Ozone Season allowances held in the general account. Each such submission shall include the following certification statement by the CAIR authorized account representative or any alternate CAIR authorized account representative: ‘‘I am authorized to make this submission on behalf of the persons having an ownership interest with respect to the CAIR NOx Ozone Season allowances held in the general account. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.’’

(ii) Each submission concerning the general account shall be submitted, signed, and certified by the CAIR authorized account representative or any alternate CAIR authorized account representative for the persons having an ownership interest with respect to CAIR NOx Ozone Season allowances held in the general account. Each such submission shall include the following certification statement by the CAIR authorized account representative or any alternate CAIR authorized account representative: ‘‘I am authorized to make this submission on behalf of the persons having an ownership interest with respect to the CAIR NOx Ozone Season allowances held in the general account. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.’’

(iii) The Administrator will accept or act on a submission concerning the general account only if the submission has been made, signed, and certified in accordance with paragraph (b)(2)(ii) of this section.

(3) Changing CAIR authorized account representative and alternate CAIR authorized account representative; changes in persons with ownership interest.

(i) The CAIR authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CAIR authorized account representative before the time and date when the Administrator receives the superseding application for a general account shall be binding on the new
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CAIR authorized account representative and the persons with an ownership interest with respect to the CAIR NO\textsubscript{X} Ozone Season allowances in the general account.

(ii) The alternate CAIR authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate CAIR authorized account representative before the time and date when the Administrator receives the superseding application for a general account shall be binding on the new alternate CAIR authorized account representative and the persons with an ownership interest with respect to the CAIR NO\textsubscript{X} Ozone Season allowances in the general account.

(iii)(A) In the event a person having an ownership interest with respect to CAIR NO\textsubscript{X} Ozone Season allowances in the general account is not included in the list of such persons in the application for a general account, such person shall be deemed to be subject to and bound by the application for a general account, the representation, actions, inactions, and submissions of the CAIR authorized account representative and any alternate CAIR authorized account representative of the account, and the decisions and orders of the Administrator or a court, as if the person were included in such list.

(B) Within 30 days following any change in the persons having an ownership interest with respect to CAIR NO\textsubscript{X} Ozone Season allowances in the general account, including the addition of a new person, the CAIR authorized account representative or any alternate CAIR authorized account representative shall submit a revision to the application for a general account amending the list of persons having an ownership interest with respect to the CAIR NO\textsubscript{X} Ozone Season allowances in the general account to include the change.

(4) Objections concerning CAIR authorized account representative and alternate CAIR authorized account representative. (i) Once a complete application for a general account under paragraph (b)(1) of this section has been submitted and received, the Administrator will rely on the application unless and until a superseding complete application for a general account under paragraph (b)(1) of this section is received by the Administrator.

(ii) Except as provided in paragraph (b)(3)(i) or (ii) of this section, no objection or other communication submitted to the Administrator concerning the authorization, or any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative for a general account shall affect any representation, action, inaction, or submission of the CAIR authorized account representative or any alternative CAIR authorized account representative or the finality of any decision or order by the Administrator under the CAIR NO\textsubscript{X} Ozone Season Trading Program.

(iii) The Administrator will not adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative for a general account, including private legal disputes concerning the proceeds of CAIR NO\textsubscript{X} Ozone Season allowance transfers.

(c) Account identification. The Administrator will assign a unique identifying number to each account established under paragraph (a) or (b) of this section.

(5) Delegation by CAIR authorized account representative and alternate CAIR authorized account representative. (i) A CAIR authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under subparts PFFF and GGGG of this part.

(ii) An alternate CAIR authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under subparts PFFF and GGGG of this part.
(iii) In order to delegate authority to make an electronic submission to the Administrator in accordance with paragraph (b)(5)(i) or (ii) of this section, the CAIR authorized account representative or alternate CAIR authorized account representative, as appropriate, must submit to the Administrator a notice of delegation, in a format prescribed by the Administrator, that includes the following elements:

(A) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of such CAIR authorized account representative or alternate CAIR authorized account representative;

(B) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of each such natural person (referred to as an “agent”);

(C) For each such natural person, a list of the type or types of electronic submissions under paragraph (b)(5)(i) or (ii) of this section for which authority is delegated to him or her;

(D) The following certification statement by such CAIR authorized account representative or alternate CAIR authorized account representative: “I agree that any electronic submission to the Administrator that is by an agent identified in this notice of delegation and of a type listed for such agent in this notice of delegation and that is made when I am a CAIR authorized account representative or alternate CAIR authorized account representative, as appropriate, and before this notice of delegation is superseded by another notice of delegation under 40 CFR § 96.351(b)(5)(iv) shall be deemed to be an electronic submission by me.”; and

(E) The following certification statement by such CAIR authorized account representative or alternate CAIR authorized account representative: “Until this notice of delegation is superseded by another notice of delegation under 40 CFR § 96.351(b)(5)(iv), I agree to maintain an e-mail account and to notify the Administrator immediately of any change in my e-mail address unless all delegation of authority by me under 40 CFR § 96.351(b)(5) is terminated.”.

(iv) A notice of delegation submitted under paragraph (b)(5)(iii) of this section shall be effective, with regard to the CAIR authorized account representative or alternate CAIR authorized account representative identified in such notice, upon receipt of such notice by the Administrator and until receipt by the Administrator of a superseding notice of delegation submitted by such CAIR authorized account representative or alternate CAIR authorized account representative, as appropriate. The superseding notice of delegation may replace any previously identified agent, add a new agent, or eliminate entirely any delegation of authority.

(v) Any electronic submission covered by the certification in paragraph (b)(5)(iii)(D) of this section and made in accordance with a notice of delegation effective under paragraph (b)(5)(iv) of this section shall be deemed to be an electronic submission by the CAIR designated representative or alternate CAIR designated representative submitting such notice of delegation.

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Ozone Season source’s compliance account the CAIR NO\textsubscript{X} Ozone Season allowances allocated for the CAIR NO\textsubscript{X} Ozone Season units at the source, as submitted by the permitting authority in accordance with §96.341(b), for the control period in 2015.

(c) By December 1, 2010 and December 1 of each year thereafter, the Administrator will record in the CAIR NO\textsubscript{X} Ozone Season source’s compliance account the CAIR NO\textsubscript{X} Ozone Season allowances allocated for the CAIR NO\textsubscript{X} Ozone Season units at the source, as submitted by the permitting authority in accordance with §96.341(b), for the control period in the sixth year after the year of the applicable deadline for recordation under this paragraph.

(d) By September 1, 2009 and September 1 of each year thereafter, the Administrator will record in the CAIR NO\textsubscript{X} Ozone Season source’s compliance account the CAIR NO\textsubscript{X} Ozone Season allowances allocated for the CAIR NO\textsubscript{X} Ozone Season units at the source, as submitted by the permitting authority or determined by the Administrator in accordance with §96.341(c), for the control period in the year of the applicable deadline for recordation under this paragraph.

(e) Serial numbers for allocated CAIR NO\textsubscript{X} Ozone Season allowances. When recording the allocation of CAIR NO\textsubscript{X} Ozone Season allowances for a CAIR NO\textsubscript{X} Ozone Season unit in a compliance account, the Administrator will assign each CAIR NO\textsubscript{X} Ozone Season allowance a unique identification number that will include digits identifying the year of the control period for which the CAIR NO\textsubscript{X} Ozone Season allowance is allocated.

(70 FR 25382, May 12, 2005, as amended at 71 FR 25394, Apr. 28, 2006)

Editorial Note: At 71 FR 25385, Apr. 28, 2006, §96.354(d) was amended; however, the amendment could not be incorporated due to inaccurate amendatory instruction.

§ 96.354 Compliance with CAIR NO\textsubscript{X} emissions limitation.

(a) Allowance transfer deadline. The CAIR NO\textsubscript{X} Ozone Season allowances are available to be deducted for compliance with a source’s CAIR NO\textsubscript{X} Ozone Season emissions limitation for a control period in a given calendar year only if the CAIR NO\textsubscript{X} Ozone Season allowances:

(1) Were allocated for the control period in the year or a prior year; and

(2) Are held in the compliance account as of the allowance transfer deadline for the control period or are transferred into the compliance account by a CAIR NO\textsubscript{X} Ozone Season allowance transfer correctly submitted for recordation under §§96.360 and 96.361 by the allowance transfer deadline for the control period.

(c) Deductions for excess emissions. (1) After making the deductions for compliance under paragraph (b) of this section for a control period in a calendar year in which the CAIR NO\textsubscript{X} Ozone Season source has excess emissions, the Administrator will deduct from the
source’s compliance account an amount of CAIR NO\textsubscript{X} Ozone Season allowances, allocated for the control period in the immediately following calendar year, equal to 3 times the number of tons of the source’s excess emissions.

(2) Any allowance deduction required under paragraph (d)(1) of this section shall not affect the liability of the owners and operators of the CAIR NO\textsubscript{X} Ozone Season source or the CAIR NO\textsubscript{X} Ozone Season units at the source for any fine, penalty, or assessment, or their obligation to comply with any other remedy, for the same violations, as ordered under the Clean Air Act or applicable State law.

(e) Recordation of deductions. The Administrator will record in the appropriate compliance account all deductions from such an account under paragraphs (b) and (d) of this section and subpart III.

(f) Administrator’s action on submissions. (1) The Administrator may review and conduct independent audits concerning any submission under the CAIR NO\textsubscript{X} Ozone Season Trading Program and make appropriate adjustments of the information in the submissions.

(2) The Administrator may deduct CAIR NO\textsubscript{X} Ozone Season allowances from or transfer CAIR NO\textsubscript{X} Ozone Season allowances to a source’s compliance account based on the information in the submissions, as adjusted under paragraph (f)(1) of this section, and record such deductions and transfers.

§ 96.356 Account error.

The Administrator may, at his or her sole discretion and on his or her own motion, correct any error in any CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System account. Within 10 business days of making such correction, the Administrator will notify the CAIR authorized account representative for the account.

§ 96.357 Closing of general accounts.

(a) The CAIR authorized account representative of a general account may submit to the Administrator a request to close the account, which shall include a correctly submitted allowance transfer under §§96.360 and 96.361 for any CAIR NO\textsubscript{X} Ozone Season allowances in the account to one or more other CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System accounts.

(b) If a general account has no allowance transfers in or out of the account for a 12-month period or longer and does not contain any CAIR NO\textsubscript{X} Ozone Season allowances, the Administrator may notify the CAIR authorized account representative for the account that the account will be closed following 20 business days after the notice is sent. The account will be closed after the 20-day period unless, before the end of the 20-day period, the Administrator receives a correctly submitted transfer of CAIR NO\textsubscript{X} Ozone Season allowances into the account under §§96.360 and 96.361 or a statement submitted by the CAIR authorized account representative demonstrating to the satisfaction of the Administrator good cause as to why the account should not be closed.

[70 FR 25382, May 12, 2005, as amended at 71 FR 25395, Apr. 28, 2006]
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Subpart GGGG—CAIR NOX Ozone Season Allowance Transfers

§ 96.360 Submission of CAIR NOX Ozone Season allowance transfers.

A CAIR authorized account representative seeking recordation of a CAIR NOX Ozone Season allowance transfer shall submit the transfer to the Administrator. To be considered correctly submitted, the CAIR NOX Ozone Season allowance transfer shall include the following elements, in a format specified by the Administrator:

(a) The account numbers for both the transferor and transferee accounts;

(b) The serial number of each CAIR NOX Ozone Season allowance that is in the transferor account and is to be transferred; and

(c) The name and signature of the CAIR authorized account representative of the transferor account and the date signed.

§ 96.361 EPA recordation.

(a) Within 5 business days (except as provided in paragraph (b) of this section) of receiving a CAIR NOX Ozone Season allowance transfer, the Administrator will record a CAIR NOX Ozone Season allowance transfer by moving each CAIR NOX Ozone Season allowance from the transferor account to the transferee account as specified by the request, provided that:

(1) The transfer is correctly submitted under §96.360; and

(2) The transferor account includes each CAIR NOX Ozone Season allowance identified by serial number in the transfer.

(b) A CAIR NOX Ozone Season allowance transfer that is submitted for recordation after the allowance transfer deadline for a control period and that includes any CAIR NOX Ozone Season allowances allocated for any control period before such allowance transfer deadline will not be recorded until after the Administrator completes the deductions under §96.354 for the control period immediately before such allowance transfer deadline.

(c) Where a CAIR NOX Ozone Season allowance transfer submitted for recordation fails to meet the requirements of paragraph (a) of this section, the Administrator will not record such transfer.

§ 96.362 Notification.

(a) Notification of recordation. Within 5 business days of recordation of a CAIR NOX Ozone Season allowance transfer under §96.361, the Administrator will notify the CAIR authorized account representatives of both the transferor and transferee accounts.

(b) Notification of non-recordation. Within 10 business days of receipt of a CAIR NOX Ozone Season allowance transfer that fails to meet the requirements of §96.361(a), the Administrator will notify the CAIR authorized account representatives of both accounts subject to the transfer of:

(1) A decision not to record the transfer, and

(2) The reasons for such non-recordation.

(c) Nothing in this section shall preclude the submission of a CAIR NOX Ozone Season allowance transfer for recordation following notification of non-recordation.

Subpart HHHH—Monitoring and Reporting

§ 96.370 General requirements.

The owners and operators, and to the extent applicable, the CAIR designated representative, of a CAIR NOX Ozone Season unit, shall comply with the monitoring, recordkeeping, and reporting requirements as provided in this subpart and in subpart H of part 75 of this chapter. For purposes of complying with such requirements, the definitions in §96.302 and in §72.2 of this chapter shall apply, and the terms “affected unit,” “designated representative,” and “continuous emission monitoring system” (or “CEMS”) in part 75 of this chapter shall be deemed to refer to the terms “CAIR NOX Ozone Season unit,” “CAIR designated representative,” and “continuous emission monitoring system” (or “CEMS”) respectively, as defined in §96.302. The owner or operator of a unit that is not a CAIR...
NO\textsubscript{X} Ozone Season unit but that is monitored under §75.72(b)(2)(ii) of this chapter shall comply with the same monitoring, recordkeeping, and reporting requirements as a CAIR NO\textsubscript{X} Ozone Season unit.

(a) Requirements for installation, certification, and data accounting. The owner or operator of each CAIR NO\textsubscript{X} Ozone Season unit shall:

(1) Install all monitoring systems required under this subpart for monitoring NO\textsubscript{X} mass emissions and individual unit heat input (including all systems required to monitor NO\textsubscript{X} emission rate, NO\textsubscript{X} concentration, stack gas moisture content, stack gas flow rate, CO\textsubscript{2} or O\textsubscript{2} concentration, and fuel flow rate, as applicable, in accordance with §§75.71 and 75.72 of this chapter);

(2) Successfully complete all certification tests required under §96.371 and meet all other requirements of this subpart and part 75 of this chapter applicable to the monitoring systems under paragraph (a)(1) of this section; and

(3) Record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section.

(b) Compliance deadlines. Except as provided in paragraph (e) of this section, the owner or operator shall meet the monitoring system certification and other requirements of paragraphs (a)(1) and (2) of this section on or before the following dates. The owner or operator shall record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section on and after the following dates:

(1) For the owner or operator of a CAIR NO\textsubscript{X} Ozone Season unit that commences commercial operation before July 1, 2007, by May 1, 2008.

(2) For the owner or operator of a CAIR NO\textsubscript{X} Ozone Season unit that commences commercial operation on or after July 1, 2007 and that reports on a control period basis under §96.374(d)(2)(ii), by the later of the following dates:

(i) 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which the unit commences commercial operation; or

(ii) If the compliance date under paragraph (b)(3)(i) of this section is not during a control period, May 1 immediately following the compliance date under paragraph (b)(3)(i) of this section.

(4) For the owner or operator of a CAIR NO\textsubscript{X} Ozone Season unit for which construction of a new stack or flue or installation of add-on NO\textsubscript{X} emission controls is completed after the applicable deadline under paragraph (b)(1), (2), (6), or (7) of this section and that reports on an annual basis under §96.374(d), by 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which emissions first exit to the atmosphere through the new stack or flue or add-on NO\textsubscript{X} emissions controls.

(5) For the owner or operator of a CAIR NO\textsubscript{X} Ozone Season unit for which construction of a new stack or flue or installation of add-on NO\textsubscript{X} emission controls is completed after the applicable deadline under paragraph (b)(1), (3), (6), or (7) of this section and that reports on a control period basis under §96.374(d), by the later of the following dates:

(i) 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which emissions first exit to the atmosphere through the new stack or flue or add-on NO\textsubscript{X} emissions controls; or

(ii) May 1, 2008.

(6) Notwithstanding the dates in paragraphs (b)(1), (2), and (3) of this section, for the owner or operator of a unit for which a CAIR NO\textsubscript{X} Ozone Season opt-in permit application is submitted and not withdrawn and a CAIR
(7) Notwithstanding the dates in paragraphs (b)(1), (2), and (3) of this section, for the owner or operator of a CAIR NOX Ozone Season opt-in unit, by the date on which the CAIR NOX Ozone Season opt-in unit under subpart III of this part enters the CAIR NOX Ozone Season Trading Program as provided in §96.384(g).

(c) Reporting data. The owner or operator of a CAIR NOX Ozone Season unit that does not meet the applicable compliance date set forth in paragraph (b) of this section for any monitoring system under paragraph (a)(1) of this section shall, for each such monitoring system, determine, record, and report maximum potential (or, as appropriate, minimum potential) values for NOX concentration, NOX emission rate, stack gas flow rate, stack gas moisture content, fuel flow rate, and any other parameters required to determine NOX mass emissions and heat input in accordance with §75.31(b)(2) or (c)(3) of this chapter, section 2.4 of appendix D to part 75 of this chapter, or section 2.5 of appendix E to part 75 of this chapter, as applicable.

(d) Prohibitions. (1) No owner or operator of a CAIR NOX Ozone Season unit shall use any alternative monitoring system, alternative reference method, or any other alternative to any requirement of this subpart without having obtained prior written approval in accordance with §96.375.

(2) No owner or operator of a CAIR NOX Ozone Season unit shall operate the unit so as to discharge, or allow to be discharged, NOX emissions to the atmosphere without accounting for all such emissions in accordance with the applicable provisions of this subpart and part 75 of this chapter.

(3) No owner or operator of a CAIR NOX Ozone Season unit shall disrupt the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording NOX mass emissions discharged into the atmosphere or heat input, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the applicable provisions of this subpart and part 75 of this chapter.

(4) No owner or operator of a CAIR NOX Ozone Season unit shall retire or permanently discontinue use of the continuous emission monitoring system, any component thereof, or any other approved monitoring system under this subpart, except under any one of the following circumstances:

(i) During the period that the unit is covered by an exemption under §96.305 that is in effect;

(ii) The owner or operator is monitoring emissions from the unit with another certified monitoring system approved, in accordance with the applicable provisions of this subpart and part 75 of this chapter, by the permitting authority for use at that unit that provides emission data for the same pollutant or parameter as the retired or discontinued monitoring system; or

(iii) The CAIR designated representative submits notification of the date of certification testing of a replacement monitoring system for the retired or discontinued monitoring system in accordance with §96.371(d)(3)(i).

(e) Long-term cold storage. The owner or operator of a CAIR NOX Ozone Season unit is subject to the applicable provisions of part 75 of this chapter concerning units in long-term cold storage.

§96.371 Initial certification and recertification procedures.

(a) The owner or operator of a CAIR NOX Ozone Season unit shall be exempt from the initial certification requirements of this section for a monitoring system under §96.370(a)(1) if the following conditions are met:

(1) The monitoring system has been previously certified in accordance with part 75 of this chapter; and

(2) The applicable quality-assurance and quality-control requirements of §75.21 of this chapter and appendix B, appendix D, and appendix E to part 75 of this chapter are fully met for the certified monitoring system described in paragraph (a)(1) of this section.

[70 FR 25382, May 12, 2005, as amended at 71 FR 25395, Apr. 28, 2006]
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(b) The recertification provisions of this section shall apply to a monitoring system under §96.370(a)(1) exempt from initial certification requirements under paragraph (a) of this section.

(c) If the Administrator has previously approved a petition under §75.17(a) or (b) of this chapter for apportioning the NOX emission rate measured in a common stack or a petition under §75.66 of this chapter, the CAIR designated representative shall resubmit the petition to the Administrator under §96.375(a) to determine whether the approval applies under the CAIR NOX Ozone Season Trading Program.

(d) Except as provided in paragraph (a) of this section, the owner or operator of a CAIR NOX Ozone Season unit shall comply with the following initial certification and recertification procedures for a continuous monitoring system (i.e., a continuous emission monitoring system and an excepted monitoring system under appendices D and E to part 75 of this chapter) under §96.370(a)(1). The owner or operator of a unit that qualifies to use the low mass emissions excepted monitoring methodology under §75.19 of this chapter or that qualifies to use an alternative monitoring system under §96.370(a)(1) are subject to the recertification requirements in §75.20(g)(6) of this chapter.

(3) Approval process for initial certification and recertification. Paragraphs (d)(3)(i) through (iv) of this section apply to both initial certification and recertification of a continuous monitoring system under §96.370(a)(1). For recertifications, replace the words “certification” and “initial certification” with the word “recertification”, replace the word “certified,” and follow the procedures in §§75.20(b)(5) and (g)(7) of this chapter in lieu of the procedures in paragraph (d)(3)(v) of this section.

(i) Notification of certification. The CAIR designated representative shall submit to the permitting authority, the appropriate EPA Regional Office, and the Administrator written notice of the dates of certification testing, in accordance with §96.373.

(ii) Certification application. The CAIR designated representative shall submit to the permitting authority a certification application for each monitoring system that may significantly affect the ability of the system to accurately measure or record NOX mass emissions or heat input rate or to meet the quality-assurance and quality-control requirements of §75.21 of this chapter or appendix B to part 75 of this chapter, the owner or operator shall recertify the monitoring system in accordance with §75.20(b) of this chapter. Furthermore, whenever the owner or operator makes a replacement, modification, or change to the flue gas handling system or the unit’s operation that may significantly change the stack flow or concentration profile, the owner or operator shall recertify each continuous emission monitoring system whose accuracy is potentially affected by the change, in accordance with §75.20(b) of this chapter. Examples of changes to a continuous emission monitoring system that require recertification include: replacement of the analyzer, complete replacement of an existing continuous emission monitoring system, or change in location or orientation of the sampling probe or site. Any fuel flowmeter systems, and any excepted NOX monitoring system under appendix E to part 75 of this chapter, under §96.370(a)(1) are subject to the recertification requirements in §75.20(g)(6) of this chapter.
system. A complete certification application shall include the information specified in §75.63 of this chapter.

(iii) Provisional certification date. The provisional certification date for a monitoring system shall be determined in accordance with §75.20(a)(3) of this chapter. A provisionally certified monitoring system may be used under the CAIR NOX Ozone Season Trading Program for a period not to exceed 120 days after receipt by the permitting authority of the complete certification application for the monitoring system under paragraph (d)(3)(ii) of this section. Data measured and recorded by the provisionally certified monitoring system, in accordance with the requirements of part 75 of this chapter, will be considered valid quality-assured data (retroactive to the date and time of provisional certification), provided that the permitting authority does not invalidate the provisional certification by issuing a notice of disapproval within 120 days of the date of receipt of the complete certification application by the permitting authority.

(iv) Certification application approval process. The permitting authority will issue a written notice of approval or disapproval of the certification application to the owner or operator within 120 days of receipt of the complete certification application under paragraph (d)(3)(ii) of this section. In the event the permitting authority does not issue such a notice within such 120-day period, each monitoring system that meets the applicable performance requirements of part 75 of this chapter and is included in the certification application will be deemed certified for use under the CAIR NOX Ozone Season Trading Program.

(A) Approval notice. If the certification application is complete and shows that each monitoring system meets the applicable performance requirements of part 75 of this chapter, then the permitting authority will issue a written notice of approval of the certification application within 120 days of receipt.

(B) Incomplete application notice. If the certification application is not complete, then the permitting authority will issue a written notice of incompleteness that sets a reasonable date by which the CAIR designated representative must submit the additional information required to complete the certification application. If the CAIR designated representative does not comply with the notice of incompleteness by the specified date, then the permitting authority may issue a notice of disapproval under paragraph (d)(3)(iv)(C) of this section. The 120-day review period shall not begin before receipt of a complete certification application.

(C) Disapproval notice. If the certification application shows that any monitoring system does not meet the performance requirements of part 75 of this chapter or if the certification application is incomplete and the requirement for disapproval under paragraph (d)(3)(iv)(B) of this section is met, then the permitting authority will issue a written notice of disapproval of the certification application. Upon issuance of such notice of disapproval, the provisional certification is invalidated by the permitting authority and the data measured and recorded by each uncertified monitoring system shall not be considered valid quality-assured data beginning with the date and hour of provisional certification (as defined under §75.20(a)(3) of this chapter). The owner or operator shall follow the procedures for loss of certification in paragraph (d)(3)(v) of this section for each monitoring system that is disapproved for initial certification.

(D) Audit decertification. The permitting authority or, for a CAIR NOX Ozone Season opt-in unit or a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, the Administrator may issue a notice of disapproval of the certification status of a monitor in accordance with §96.372(b).

(v) Procedures for loss of certification. If the permitting authority or the Administrator issues a notice of disapproval of a certification application under paragraph (d)(3)(iv)(C) of this section or a notice of disapproval of certification status under paragraph (d)(3)(iv)(D) of this section, then:
§ 96.372 Out of control periods.

(a) Whenever any monitoring system fails to meet the quality-assurance and quality-control requirements or data validation requirements of part 75 of this chapter, data shall be substituted using the applicable missing data procedures in subpart D or subpart H of, or appendix D or appendix E to, part 75 of this chapter.

(b) Audit decertification. Whenever both an audit of a monitoring system and a review of the initial certification or recertification application reveal that any monitoring system should not have been certified or recertified because it did not meet a particular performance specification or other requirement under §96.371 or the applicable provisions of part 75 of this chapter, both at the time of the initial certification or recertification application submission and at the time of the audit, the permitting authority or, for a CAIR NOx Ozone Season opt-in unit or a unit for which a CAIR opt-in permit application is submitted and not yet issued or denied under subpart III of this part, the Administrator will

(A) The owner or operator shall substitute the following values, for each disapproved monitoring system, for each hour of unit operation during the period of invalid data specified under §75.20(a)(4)(iii), §75.20(g)(7), or §75.21(e) of this chapter and continuing until the applicable date and hour specified under §75.20(a)(5)(i) or (g)(7) of this chapter:

(1) For a disapproved NOX emission rate (i.e., NOX-diluent) system, the maximum potential NOX emission rate, as defined in §72.2 of this chapter.

(2) For a disapproved NOX pollutant concentration monitor and disapproved flow monitor, respectively, the maximum potential concentration of NOX and the maximum potential flow rate, as defined in sections 2.1.2.1 and 2.1.4.1 of appendix A to part 75 of this chapter.

(3) For a disapproved moisture monitoring system and disapproved diluent gas monitoring system, respectively, the minimum potential moisture percentage and either the maximum potential CO2 concentration or the minimum potential O2 concentration (as applicable), as defined in sections 2.1.5, 2.1.3.1, and 2.1.3.2 of appendix A to part 75 of this chapter.

(4) For a disapproved fuel flowmeter system, the maximum potential fuel flow rate, as defined in section 2.4.2.1 of appendix D to part 75 of this chapter.

(5) For a disapproved excepted NOX monitoring system under appendix E to part 75 of this chapter, the fuel-specific maximum potential NOX emission rate, as defined in §72.2 of this chapter.

(B) The CAIR designated representative shall submit a notification of certification retest dates and a new certification application in accordance with paragraphs (d)(3)(i) and (ii) of this section.

(C) The owner or operator shall repeat all certification tests or other requirements that were failed by the monitoring system, as indicated in the permitting authority’s or the Administrator’s notice of disapproval, no later than 30 unit operating days after the date of issuance of the notice of disapproval.

(e) Initial certification and recertification procedures for units using the low mass emissions (LME) excepted methodology under §75.19 of this chapter. The owner or operator of a unit qualified to use the low mass emissions (LME) excepted methodology under §75.19 of this chapter shall meet the applicable certification and recertification requirements in §§75.19(a)(2) and 75.20(h) of this chapter. If the owner or operator of such a unit elects to certify a fuel flowmeter system for heat input determination, the owner or operator shall also meet the certification and recertification requirements in §75.20(g) of this chapter.

(f) Certification/recertification procedures for alternative monitoring systems. The CAIR designated representative of each unit for which the owner or operator intends to use an alternative monitoring system approved by the Administrator and, if applicable, the permitting authority under subpart E of part 75 of this chapter shall comply with the applicable notification and application procedures of §75.20(f) of this chapter.


§ 96.372 Out of control periods.

(a) Whenever any monitoring system fails to meet the quality-assurance and quality-control requirements or data validation requirements of part 75 of this chapter, data shall be substituted using the applicable missing data procedures in subpart D or subpart H of, or appendix D or appendix E to, part 75 of this chapter.

(b) Audit decertification. Whenever both an audit of a monitoring system and a review of the initial certification or recertification application reveal that any monitoring system should not have been certified or recertified because it did not meet a particular performance specification or other requirement under §96.371 or the applicable provisions of part 75 of this chapter, both at the time of the initial certification or recertification application submission and at the time of the audit, the permitting authority or, for a CAIR NOx Ozone Season opt-in unit or a unit for which a CAIR opt-in permit application is submitted and not yet issued or denied under subpart III of this part, the Administrator will
issue a notice of disapproval of the certification status of such monitoring system. For the purposes of this paragraph, an audit shall be either a field audit or an audit of any information submitted to the permitting authority or the Administrator. By issuing the notice of disapproval, the permitting authority or the Administrator revokes prospectively the certification status of the monitoring system. The data measured and recorded by the monitoring system shall not be considered valid quality-assured data from the date of issuance of the notification of the revoked certification status until the date and time that the owner or operator completes subsequently approved initial certification or recertification tests for the monitoring system. The owner or operator shall follow the applicable initial certification or recertification procedures in §96.371 for each disapproved monitoring system.

§ 96.373 Notifications.

The CAIR designated representative for a CAIR NOₓ Ozone Season unit shall submit written notice to the permitting authority and the Administrator in accordance with §75.61 of this chapter.

§ 96.374 Recordkeeping and reporting.

(a) General provisions. The CAIR designated representative shall comply with all recordkeeping and reporting requirements in this section, the applicable recordkeeping and reporting requirements under §75.73 of this chapter, and the requirements of §96.310(e)(1).

(b) Monitoring plans. The owner or operator of a CAIR NOₓ Ozone Season unit shall comply with requirements of §75.73(c) and (e) of this chapter and, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, §§96.383 and 96.384(a).

(c) Certification applications. The CAIR designated representative shall submit an application to the permitting authority within 45 days after completing all initial certification or recertification tests required under §96.371, including the information required under §75.63 of this chapter.

(d) Quarterly reports. The CAIR designated representative shall submit quarterly reports, as follows:

(1) If the CAIR NOₓ Ozone Season unit is subject to an Acid Rain emissions limitation or a CAIR NOₓ emissions limitation or if the owner or operator of such unit chooses to report on an annual basis under this subpart, the CAIR designated representative shall meet the requirements of subpart H of part 75 of this chapter (concerning monitoring of NOₓ mass emissions) for such unit for the entire year and shall report the NOₓ mass emissions data and heat input data for such unit, in an electronic quarterly report in a format prescribed by the Administrator, for each calendar quarter beginning with:

(i) For a unit that commences commercial operation before July 1, 2007, the calendar quarter covering May 1, 2008 through June 30, 2008;

(ii) For a unit that commences commercial operation on or after July 1, 2007, the calendar quarter corresponding to the earlier of the date of provisional certification or the applicable deadline for initial certification under §96.370(b), unless that quarter is the third or fourth quarter of 2007 or the first quarter of 2008, in which case reporting shall commence in the quarter covering May 1, 2008 through June 30, 2008;

(iii) Notwithstanding paragraphs (d)(1)(i) and (ii) of this section, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, the calendar quarter corresponding to the date specified in §96.384(b); and

(iv) Notwithstanding paragraphs (d)(1)(i) and (ii) of this section, for a CAIR NOₓ Ozone Season opt-in unit under subpart III of this part, the calendar quarter corresponding to the date on which the CAIR NOₓ Ozone Season opt-in unit enters the CAIR NOₓ Ozone Season Trading Program as provided in §96.384(g).

(2) If the CAIR NOₓ Ozone Season unit is not subject to an Acid Rain emissions limitation or a CAIR NOₓ
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emissions limitation, then the CAIR designated representative shall either:

(i) Meet the requirements of subpart H of part 75 (concerning monitoring of NOX mass emissions) for such unit for the entire year and report the NOX mass emissions data and heat input data for such unit in accordance with paragraph (d)(1) of this section; or

(ii) Meet the requirements of subpart H of part 75 for the control period (including the requirements in §75.74(c) of this chapter) and report NOX mass emissions data and heat input data (including the data described in §75.74(c)(6) of this chapter) for such unit only for the control period of each year and report, in an electronic quarterly report in a format prescribed by the Administrator, for each calendar quarter beginning with:

(A) For a unit that commences commercial operation before July 1, 2007, the calendar quarter covering May 1, 2008 through June 30, 2008;

(B) For a unit that commences commercial operation on or after July 1, 2007, the calendar quarter corresponding to the earlier of the date of provisional certification or the applicable deadline for initial certification under §96.370(b), unless that date is not during a control period, in which case reporting shall commence in the quarter that includes May 1 through June 30 of the first control period after such date;

(C) Notwithstanding paragraphs (d)(2)(ii)(A) and (2)(ii)(B) of this section, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, the calendar quarter corresponding to the date specified in §96.384(b); and

(D) Notwithstanding paragraphs (d)(2)(ii)(A) and (2)(ii)(B) of this section, for a CAIR NOX Ozone Season opt-in unit under subpart III of this part, the calendar quarter corresponding to the date on which the CAIR NOX Ozone Season opt-in unit enters the CAIR NOX Ozone Season Trading Program as provided in §96.384(g).

(2) The CAIR designated representative shall submit each quarterly report to the Administrator within 30 days following the end of the calendar quarter covered by the report. Quarterly reports shall be submitted in the manner specified in §75.73(f) of this chapter.

(3) For CAIR NOX Ozone Season units that are also subject to an Acid Rain emissions limitation or the CAIR NOX Annual Trading Program or CAIR SO2 Trading Program, quarterly reports shall include the applicable data and information required by subparts F through H of part 75 of this chapter as applicable, in addition to the NOX mass emission data, heat input data, and other information required by this subpart.

(e) Compliance certification. The CAIR designated representative shall submit to the Administrator a compliance certificate (in a format prescribed by the Administrator) in support of each quarterly report based on reasonable inquiry of those persons with primary responsibility for ensuring that all of the unit’s emissions are correctly and fully monitored. The certification shall state that:

(1) The monitoring data submitted were recorded in accordance with the applicable requirements of this subpart and part 75 of this chapter, including the quality assurance procedures and specifications;

(2) For a unit with add-on NOX emission controls and for all hours where NOX data are substituted in accordance with §75.34(a)(1) of this chapter, the add-on emission controls were operating within the range of parameters listed in the quality assurance/quality control program under appendix B to part 75 of this chapter and the substitute data values do not systematically underestimate NOX emissions; and

(3) For a unit that is reporting on a control period basis under paragraph (d)(2)(ii) of this section, the NOX emission rate and NOX concentration values substituted for missing data under subpart D of part 75 of this chapter are calculated using only values from a control period and do not systematically underestimate NOX emissions.

[70 FR 25382, May 12, 2005, as amended at 71 FR 23885, Apr. 28, 2006]
§ 96.375 Petitions.
(a) Except as provided in paragraph (b)(2) of this section, the CAIR designated representative of a CAIR NOX Ozone Season unit that is subject to an Acid Rain emissions limitation may submit a petition under §75.66 of this chapter to the Administrator requesting approval to apply an alternative to any requirement of this subpart. Application of an alternative to any requirement of this subpart is in accordance with this subpart only to the extent that the petition is approved in writing by the Administrator, in consultation with the permitting authority.

(b)(1) The CAIR designated representative of a CAIR NOX Ozone Season unit that is not subject to an Acid Rain emissions limitation may submit a petition under §75.66 of this chapter to the permitting authority and the Administrator requesting approval to apply an alternative to any requirement of this subpart. Application of an alternative to any requirement of this subpart is in accordance with this subpart only to the extent that the petition is approved in writing by both the permitting authority and the Administrator.

(b)(2) The CAIR designated representative of a CAIR NOX Ozone Season unit that is subject to an Acid Rain emissions limitation may submit a petition under §75.66 of this chapter to the permitting authority and the Administrator requesting approval to apply an alternative concerning any additional continuous emission monitoring system required under §75.72 of this chapter. Application of an alternative to any such requirement is in accordance with this subpart only to the extent that the petition is approved in writing by both the permitting authority and the Administrator.

Subpart III—CAIR NOX Ozone Season Opt-in Units

SOURCE: 70 FR 25382, May 12, 2005, unless otherwise noted.

§ 96.380 Applicability.
A CAIR NOX Ozone Season opt-in unit must be a unit that:

(a) Is located in the State;
(b) Is not a CAIR NOX Ozone Season unit under §96.304 and is not covered by a retired unit exemption under §96.305 that is in effect;
(c) Is not covered by a retired unit exemption under §72.8 of this chapter that is in effect;
(d) Has or is required or qualified to have a title V operating permit or other federally enforceable permit; and
(e) Vents all of its emissions to a stack and can meet the monitoring, recordkeeping, and reporting requirements of subpart HHHH of this part.

§ 96.381 General.
(a) Except as otherwise provided in §§96.301 through 96.304, §§96.306 through 96.308, and subparts BBBB and CCCC and subparts FFFF through HHHH of this part, a CAIR NOX Ozone Season opt-in unit shall be treated as a CAIR NOX Ozone Season unit for purposes of applying such sections and subparts of this part.

(b) Solely for purposes of applying, as provided in this subpart, the requirements of subpart HHHH of this part to a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under this subpart, such unit shall be treated as a CAIR NOX Ozone Season unit before issuance of a CAIR opt-in permit for such unit.

§ 96.382 CAIR designated representative.
Any CAIR NOX Ozone Season opt-in unit, and any unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under this subpart, located at the same source as one or more CAIR NOX Ozone Season units shall have the same CAIR designated representative and alternate CAIR designated representative as such CAIR NOX Ozone Season units.

§ 96.383 Applying for CAIR opt-in permit.
(a) Applying for initial CAIR opt-in permit. The CAIR designated representative of a unit meeting the requirements for a CAIR NOX Ozone Season opt-in unit in §96.380 may apply for an initial CAIR opt-in permit at any time, except
§ 96.384 Opt-in process.

The permitting authority will issue or deny a CAIR opt-in permit for a unit for which an initial application for a CAIR opt-in permit under § 96.383 is submitted in accordance with the following:

(a) Interim review of monitoring plan. The permitting authority and the Administrator will determine, on an interim basis, the sufficiency of the monitoring plan accompanying the initial application for a CAIR opt-in permit under § 96.383. A monitoring plan is sufficient, for purposes of interim review, if the plan appears to contain information demonstrating that the NOx emissions rate and heat input of the unit and all other applicable parameters are monitored and reported in accordance with subpart HHHH of this part. A determination of sufficiency shall not be construed as acceptance or approval of the monitoring plan.

(b) Duty to reapply. (1) The CAIR designated representative of a CAIR NOx Ozone Season opt-in unit shall submit a complete CAIR permit application under § 96.322 to renew the CAIR opt-in unit permit in accordance with the permitting authority’s regulations for title V operating permits, or the permitting authority’s regulations for other federally enforceable permits if applicable, addressing permit renewal.

(2) Unless the permitting authority issues a notification of acceptance of withdrawal of the CAIR NOx Ozone Season opt-in unit from the CAIR NOx Ozone Season Trading Program in accordance with § 96.186 or the unit becomes a CAIR NOx Ozone Season unit under § 96.304, the CAIR NOx opt-in unit shall remain subject to the requirements for a CAIR NOx Ozone Season opt-in unit, even if the CAIR designated representative for the CAIR NOx Ozone Season opt-in unit fails to submit a CAIR permit application that is required for renewal of the CAIR opt-in permit under paragraph (b)(1) of this section.

[70 FR 25382, May 12, 2005, as amended at 71 FR 25396, Apr. 28, 2006]
(1) The monitoring and reporting under paragraph (b)(1)(i) of this section shall include the entire control period immediately before the date on which the unit enters the CAIR NO\textsubscript{X} Ozone Season Trading Program under §96.384(g), during which period monitoring system availability must not be less than 90 percent under subpart HHHH of this part and the unit must be in full compliance with any applicable State or Federal emissions or emissions-related requirements.

(2) To the extent the NO\textsubscript{X} emissions rate and the heat input of the unit are monitored and reported in accordance with subpart HHHH of this part for one or more control periods, in addition to the control period under paragraph (b)(1)(ii) of this section, during which control periods monitoring system availability is not less than 90 percent under subpart HHHH of this part and the unit is in full compliance with any applicable State or Federal emissions or emissions-related requirements and which control periods begin not more than 3 years before the unit enters the CAIR NO\textsubscript{X} Ozone Season Trading Program under §96.384(g), such information shall be used as provided in paragraphs (c) and (d) of this section.

(c) Baseline heat input. The unit’s baseline heat input shall equal:

(1) If the unit’s NO\textsubscript{X} emissions rate and heat input are monitored and reported for only one control period, in accordance with paragraph (b)(1) of this section, the unit’s total heat input (in mmBtu) for the control period; or

(2) If the unit’s NO\textsubscript{X} emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, and the unit does not have add-on NO\textsubscript{X} emission controls during any such control periods, the average of the amounts of the unit’s NO\textsubscript{X} emissions rate (in lb/mmBtu) for the control periods under paragraphs (b)(1)(ii) and (2) of this section;

(3) If the unit’s NO\textsubscript{X} emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, and the unit has add-on NO\textsubscript{X} emission controls during any such control periods, the average of the amounts of the unit’s NO\textsubscript{X} emissions rate (in lb/mmBtu) for such control periods during which the unit has add-on NO\textsubscript{X} emission controls.

(d) Baseline NO\textsubscript{X} emission rate. The unit’s baseline NO\textsubscript{X} emission rate shall equal:

(1) If the unit’s NO\textsubscript{X} emissions rate and heat input are monitored and reported for only one control period, in accordance with paragraph (b)(1) of this section, the unit’s total heat input (in mmBtu) for the control period; or

(2) If the unit’s NO\textsubscript{X} emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, the average of the amounts of the unit’s NO\textsubscript{X} emissions rate (in lb/mmBtu) for the control periods under paragraphs (b)(1)(ii) and (2) of this section.

(e) Issuance of CAIR opt-in permit. After calculating the baseline heat input and the baseline NO\textsubscript{X} emissions rate for the unit under paragraphs (c) and (d) of this section and if the permitting authority determines that the CAIR designated representative shows that the unit meets the requirements for a CAIR NO\textsubscript{X} Ozone Season opt-in unit in §96.380 and meets the elements certified in §96.383(a)(2), the permitting authority will issue a CAIR opt-in permit. The permitting authority will provide a copy of the CAIR opt-in permit to the Administrator, who will then establish a compliance account for the source that includes the CAIR NO\textsubscript{X} Ozone Season opt-in unit unless the source already has a compliance account.

(f) Issuance of denial of CAIR opt-in permit. Notwithstanding paragraphs (a) through (e) of this section, if at any time before issuance of a CAIR opt-in permit for the unit, the permitting authority determines that the CAIR designated representative fails to show that the unit meets the requirements for a CAIR NO\textsubscript{X} Ozone Season opt-in unit in §96.380 or meets the elements certified in §96.383(a)(2), the permitting authority will issue a denial of a CAIR opt-in permit for the unit.

(g) Date of entry into CAIR NO\textsubscript{X} Ozone Season Trading Program. A unit for which an initial CAIR opt-in permit is

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issued by the permitting authority shall become a CAIR NO\textsubscript{X} Ozone Season opt-in unit, and a CAIR NO\textsubscript{X} Ozone Season unit, as of the later of May 1, 2009 or May 1 of the first control period during which such CAIR opt-in permit is issued.

(b) Repowered CAIR NO\textsubscript{X} Ozone Season opt-in unit. (1) If CAIR designated representative requests, and the permitting authority issues a CAIR opt-in permit providing for, allocation to a CAIR NO\textsubscript{X} Ozone Season opt-in unit of CAIR NO\textsubscript{X} Ozone Season allowances under §96.388(c) and such unit is repowered after its date of entry into the CAIR NO\textsubscript{X} Ozone Season Trading Program under paragraph (g) of this section, the repowered unit shall be treated as a CAIR NO\textsubscript{X} Ozone Season opt-in unit replacing the original CAIR NO\textsubscript{X} Ozone Season opt-in unit, as of the date of start-up of the repowered unit’s combustion chamber.

(2) Notwithstanding paragraphs (c) and (d) of this section, as of the date of start-up under paragraph (h)(1) of this section, the repowered unit shall be deemed to have the same date of commencement of operation, date of commencement of commercial operation, baseline heat input, and baseline NO\textsubscript{X} emission rate as the original CAIR NO\textsubscript{X} Ozone Season opt-in unit, and the original CAIR NO\textsubscript{X} Ozone Season opt-in unit shall no longer be treated as a CAIR NO\textsubscript{X} Ozone Season opt-in unit or a CAIR NO\textsubscript{X} Ozone Season unit.

(6) A statement that the unit may withdraw from the CAIR NO\textsubscript{X} Ozone Season Trading Program only in accordance with §96.386; and

(7) A statement that the unit is subject to, and the owners and operators of the unit must comply with, the requirements of §96.387.

(b) Each CAIR opt-in permit is deemed to incorporate automatically the definitions of terms under §96.302 and, upon recordation by the Administrator under subpart FFFF or GGGG of this part or this subpart, every allocation, transfer, or deduction of CAIR NO\textsubscript{X} Ozone Season allowances to or from the compliance account of the source that includes a CAIR NO\textsubscript{X} Ozone Season opt-in unit covered by the CAIR opt-in permit.

(c) The CAIR opt-in permit shall be included, in a format specified by the permitting authority, in the CAIR permit for the source where the CAIR NO\textsubscript{X} Ozone Season opt-in unit is located and in a title V operating permit or other federally enforceable permit for the source.

§96.386 Withdrawal from CAIR NO\textsubscript{X} Ozone Season Trading Program.

Except as provided under paragraph (g) of this section, a CAIR NO\textsubscript{X} Ozone Season opt-in unit may withdraw from the CAIR NO\textsubscript{X} Ozone Season Trading Program, but only if the permitting authority issues a notification to the CAIR designated representative of the CAIR NO\textsubscript{X} Ozone Season opt-in unit of the acceptance of the withdrawal of the CAIR NO\textsubscript{X} Ozone Season opt-in unit in accordance with paragraph (d) of this section.

(a) Requesting withdrawal. In order to withdraw a CAIR NO\textsubscript{X} Ozone Season opt-in unit from the CAIR NO\textsubscript{X} Ozone Season Trading Program, the CAIR designated representative of the CAIR NO\textsubscript{X} Ozone Season opt-in unit shall submit to the permitting authority a request to withdraw effective as of midnight of September 30 of a specified calendar year, which date must be at least 4 years after September 30 of the year of entry into the CAIR NO\textsubscript{X} Ozone Season Trading Program under
§ 96.386 Conditions for withdrawal. Before a CAIR NOX Ozone Season opt-in unit covered by a request under paragraph (a) of this section may withdraw from the CAIR NOX Ozone Season Trading Program and the CAIR opt-in permit may be terminated under paragraph (e) of this section, the following conditions must be met:

(1) For the control period ending on the date on which the withdrawal is to be effective, the source that includes the CAIR NOX Ozone Season opt-in unit must meet the requirement to hold CAIR NOX Ozone Season allowances under § 96.306(c) and cannot have any excess emissions.

(2) After the requirement for withdrawal under paragraph (b)(1) of this section is met, the Administrator will deduct from the compliance account of the source that includes the CAIR NOX Ozone Season opt-in unit CAIR NOX Ozone Season allowances equal in amount to and allocated for the same or a prior control period as any CAIR NOX Ozone Season allowances allocated to the CAIR NOX Ozone Season opt-in unit under § 96.388 for any control period for which the withdrawal is to be effective. If there are no remaining CAIR NOX Ozone Season units at the source, the Administrator will close the compliance account, and the owners and operators of the CAIR NOX Ozone Season opt-in unit may submit a CAIR NOX Ozone Season allowance transfer for any remaining CAIR NOX Ozone Season allowances to another CAIR NOX Ozone Season Allowance Tracking System in accordance with subpart G of this part.

(c) Notification. (1) After the requirements for withdrawal under paragraphs (a) and (b) of this section are met (including deduction of the full amount of CAIR NOX Ozone Season allowances required), the permitting authority will issue a notification to the CAIR designated representative of the CAIR NOX Ozone Season opt-in unit of the acceptance of the withdrawal of the CAIR NOX Ozone Season opt-in unit as of midnight on September 30 of the calendar year for which the withdrawal was requested.

(2) If the requirements for withdrawal under paragraphs (a) and (b) of this section are not met, the permitting authority will issue a notification to the CAIR designated representative of the CAIR NOX Ozone Season opt-in unit that the CAIR NOX Ozone Season opt-in unit’s request to withdraw is denied. Such CAIR NOX Ozone Season opt-in unit shall continue to be a CAIR NOX Ozone Season opt-in unit.

(d) Permit amendment. After the permitting authority issues a notification under paragraph (c)(1) of this section that the requirements for withdrawal have been met, the permitting authority will revise the CAIR permit covering the CAIR NOX Ozone Season opt-in unit to terminate the CAIR opt-in permit for such unit as of the effective date specified under paragraph (c)(1) of this section. The unit shall continue to be a CAIR NOX Ozone Season opt-in unit until the effective date of the termination and shall comply with all requirements under the CAIR NOX Ozone Season Trading Program concerning any control periods for which the unit is a CAIR NOX Ozone Season opt-in unit, even if such requirements arise or must be complied with after the withdrawal takes effect.

(e) Reapplication upon failure to meet conditions of withdrawal. If the permitting authority denies the CAIR NOX Ozone Season opt-in unit’s request to withdraw, the CAIR designated representative may submit another request to withdraw in accordance with paragraphs (a) and (b) of this section.

(f) Ability to reapply to the CAIR NOX Ozone Season Trading Program. Once a CAIR NOX Ozone Season opt-in unit withdraws from the CAIR NOX Ozone Season Trading Program and its CAIR opt-in permit is terminated under this subpart, the CAIR designated representative may submit another application for a CAIR opt-in permit under § 96.383 for such CAIR NOX Ozone Season opt-in unit before the date that is 4 years after the date on which the withdrawal became effective. Such new application for a CAIR opt-in permit will be treated as an initial application for a CAIR opt-in permit under § 96.384.

(g) Inability to withdraw. Notwithstanding paragraphs (a) through (f) of this section, a CAIR NOX Ozone Season opt-in unit is not eligible to withdraw as of the effective date of September 30, 2010.
§ 96.387 Change in regulatory status.

(a) Notification. If a CAIR NOₓ Ozone Season opt-in unit becomes a CAIR NOₓ Ozone Season unit under §96.304, then the CAIR designated representative shall notify in writing the permitting authority and the Administrator of such change in the CAIR NOₓ Ozone Season opt-in unit’s regulatory status, within 30 days of such change.

(b) Permitting authority’s and Administrator’s actions. (1) If a CAIR NOₓ Ozone Season opt-in unit becomes a CAIR NOₓ Ozone Season unit under §96.304, the permitting authority will revise the CAIR NOₓ Ozone Season opt-in unit’s CAIR opt-in permit to meet the requirements of a CAIR permit under §96.323, and remove the CAIR opt-in permit provisions, as of the date on which the CAIR NOₓ Ozone Season opt-in unit becomes a CAIR NOₓ Ozone Season unit under §96.304.

(2)(i) The Administrator will deduct from the compliance account of the source that includes the CAIR NOₓ Ozone Season opt-in unit that becomes a CAIR NOₓ Ozone Season unit under §96.304, the following amount of CAIR NOₓ Ozone Season allowances equal in amount to and allocated for the same or a prior control period as:

(A) Any CAIR NOₓ Ozone Season allowances allocated to the CAIR NOₓ Ozone Season opt-in unit under §96.388 for any control period after the date on which the CAIR NOₓ Ozone Season opt-in unit becomes a CAIR NOₓ Ozone Season unit under §96.304; and

(B) If the date on which the CAIR NOₓ Ozone Season opt-in unit becomes a CAIR NOₓ Ozone Season unit under §96.304 is not September 30, the CAIR NOₓ Ozone Season allowances allocated to the CAIR NOₓ Ozone Season opt-in unit under §96.388 for the control period that includes the date on which the CAIR NOₓ Ozone Season opt-in unit becomes a CAIR NOₓ Ozone Season unit under §96.304, multiplied by the ratio of the number of days, in the control period, starting with the date on which the CAIR NOₓ Ozone Season opt-in unit becomes a CAIR NOₓ Ozone Season unit under §96.304 divided by the total number of days in the control period and rounded to the nearest whole allowance as appropriate.

(ii) The CAIR designated representative shall ensure that the compliance account of the source that includes the CAIR NOₓ Ozone Season opt-in unit that becomes a CAIR NOₓ Ozone Season unit under §96.304 contains the CAIR NOₓ Ozone Season allowances necessary for completion of the deduction under paragraph (b)(2)(i) of this section.

(3)(i) For every control period after the date on which the CAIR NOₓ Ozone Season opt-in unit becomes a CAIR NOₓ Ozone Season unit under §96.304 is not September 30, the following amount of CAIR NOₓ Ozone Season allowances will be allocated to the CAIR NOₓ Ozone Season opt-in unit (as a CAIR NOₓ Ozone Season unit) under §96.342 for the control period that includes the date on which the CAIR NOₓ Ozone Season opt-in unit becomes a CAIR NOₓ Ozone Season unit under §96.304:

(A) The amount of CAIR NOₓ Ozone Season allowances otherwise allocated to the CAIR NOₓ Ozone Season opt-in unit (as a CAIR NOₓ Ozone Season unit) under §96.342 for the control period multiplied by;

(B) The ratio of the number of days, in the control period, starting with the date on which the CAIR NOₓ Ozone Season opt-in unit becomes a CAIR NOₓ Ozone Season unit under §96.304, divided by the total number of days in the control period; and
CIRNOX Ozone Season allowance allocations to CAIR NOX Ozone Season opt-in units.

(a) Timing requirements. (1) When the CAIR opt-in permit is issued under §96.384(e), the permitting authority will allocate CAIR NOX Ozone Season allowances to the CAIR NOX Ozone Season opt-in unit, and submit to the Administrator the allocation for the control period in which a CAIR NOX Ozone Season opt-in unit enters the CAIR NOX Ozone Season Trading Program under §96.384(g), in accordance with paragraph (b) or (c) of this section.

(2) By no later than July 31 of the control period after the control period in which a CAIR NOX Ozone Season opt-in unit enters the CAIR NOX Ozone Season Trading Program under §96.384(g) and July 31 of each year thereafter, the permitting authority will allocate CAIR NOX Ozone Season allowances to the CAIR NOX Ozone Season opt-in unit, and submit to the Administrator the allocation for the control period that includes such sub-

(b) Calculation of allocation. For each control period for which a CAIR NOX Ozone Season opt-in unit is to be allo-
cated CAIR NOX Ozone Season allowances, the permitting authority will allocate in accordance with the following procedures:

(1) The heat input (in mmBtu) used for calculating the CAIR NOX Ozone Season allowance allocation will be the lesser of:

(i) The CAIR NOX Ozone Season opt-in unit’s heat input determined under §96.384(c); or

(ii) The CAIR NOX Ozone Season opt-in unit’s baseline heat input, as determined in accordance with subpart HHHH of this part, for the immediately prior control period, except when the allocation is being calculated for the control period in which the CAIR NOX Ozone Season opt-in unit enters the CAIR NOX Ozone Season Trading Program under §96.384(g).

(2) The NOX emission rate (in lb/mmBtu) used for calculating CAIR NOX Ozone Season allowance allocations will be the lesser of:

(i) The CAIR NOX Ozone Season opt-in unit’s baseline NOX emissions rate (in lb/mmBtu) determined under §96.384(d) and multiplied by 70 percent; or

(ii) The most stringent State or Federal NOX emissions limitation applicable to the CAIR NOX Ozone Season opt-
in unit at any time during the control period for which CAIR NOX Ozone Season allowances are to be allocated.

(c) Notwithstanding paragraph (b) of this section and if the CAIR designated representative requests, and the per-
mitting authority issues a CAIR opt-in permit (based on a demonstration of the intent to repower stated under §96.383(a)(5)) providing for, allocation to a CAIR NOX Ozone Season opt-in unit of CAIR NOX Ozone Season allowances under this paragraph (subject to the conditions in §§96.384(h) and 96.386(g)), the permitting authority will allocate to the CAIR NOX Ozone Season opt-in unit as follows:

(1) For each control period in 2009 through 2014 for which the CAIR NOX Ozone Season opt-in unit is to be allo-
crated CAIR NOX Ozone Season allowances, the permitting authority will allocate in accordance with the following procedures:

(i) The heat input (in mmBtu) used for calculating the CAIR NOX Ozone Season allowance allocation will be the lesser of:

(ii) The CAIR NOX Ozone Season opt-in unit’s heat input determined under §96.384(c); or

(ii) The CAIR NOX Ozone Season opt-in unit’s baseline heat input, as determined in accordance with subpart HHHH of this part, for the immediately prior control period, except when the allocation is being calculated for the control period in which the CAIR NOX Ozone Season opt-in unit enters the CAIR NOX Ozone Season Trading Program under §96.384(g).

(2) The NOX emission rate (in lb/mmBtu) used for calculating CAIR NOX Ozone Season allowance allocations will be the lesser of:

(i) The CAIR NOX Ozone Season opt-in unit’s baseline NOX emissions rate (in lb/mmBtu) determined under §96.384(d) and multiplied by 70 percent; or

(ii) The most stringent State or Federal NOX emissions limitation applicable to the CAIR NOX Ozone Season opt-in unit at any time during the control period for which CAIR NOX Ozone Season allowances are to be allocated.

(3) The permitting authority will allocate CAIR NOX Ozone Season allowances to the CAIR NOX Ozone Season opt-in unit in an amount equaling the heat input under paragraph (b)(1) of this section, multiplied by the NOX emission rate under paragraph (b)(2) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole allowance as appropriate.

(c) Notwithstanding paragraph (b) of this section and if the CAIR designated representative requests, and the per-
mitting authority issues a CAIR opt-in permit (based on a demonstration of the intent to repower stated under §96.383(a)(5)) providing for, allocation to a CAIR NOX Ozone Season opt-in unit of CAIR NOX Ozone Season allowances under this paragraph (subject to the conditions in §§96.384(h) and 96.386(g)), the permitting authority will allocate to the CAIR NOX Ozone Season opt-in unit as follows:

(1) For each control period in 2009 through 2014 for which the CAIR NOX Ozone Season opt-in unit is to be allo-
crated CAIR NOX Ozone Season allowances, the permitting authority will allocate in accordance with the following procedures:

(i) The heat input (in mmBtu) used for calculating the CAIR NOX Ozone Season allowance allocation will be the lesser of:

(ii) The CAIR NOX Ozone Season opt-in unit’s heat input determined under §96.384(c); or

(ii) The CAIR NOX Ozone Season opt-in unit’s baseline heat input, as determined in accordance with subpart HHHH of this part, for the immediately prior control period, except when the allocation is being calculated for the control period in which the CAIR NOX Ozone Season opt-in unit enters the CAIR NOX Ozone Season Trading Program under §96.384(g).

(2) The NOX emission rate (in lb/mmBtu) used for calculating CAIR NOX Ozone Season allowance allocations will be the lesser of:

(i) The CAIR NOX Ozone Season opt-in unit’s baseline NOX emissions rate (in lb/mmBtu) determined under §96.384(d) and multiplied by 70 percent; or

(ii) The most stringent State or Federal NOX emissions limitation applicable to the CAIR NOX Ozone Season opt-in unit at any time during the control period for which CAIR NOX Ozone Season allowances are to be allocated.

(3) The permitting authority will allocate CAIR NOX Ozone Season allowances to the CAIR NOX Ozone Season opt-in unit in an amount equaling the heat input under paragraph (b)(1) of this section, multiplied by the NOX emission rate under paragraph (b)(2) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole allowance as appropriate.
(in lb/mmBtu) determined under §96.384(d); or

(B) The most stringent State or Federal NO\textsubscript{X} emissions limitation applicable to the CAIR NO\textsubscript{X} Ozone Season opt-in unit at any time during the control period in which the CAIR NO\textsubscript{X} Ozone Season opt-in unit enters the CAIR NO\textsubscript{X} Ozone Season Trading Program under §96.384(g).

(iii) The permitting authority will allocate CAIR NO\textsubscript{X} Ozone Season allowances to the CAIR NO\textsubscript{X} Ozone Season opt-in unit in an amount equaling the heat input under paragraph (c)(1)(i) of this section, multiplied by the NO\textsubscript{X} emission rate under paragraph (c)(1)(ii) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole allowance as appropriate.

(2) For each control period in 2015 and thereafter for which the CAIR NO\textsubscript{X} Ozone Season opt-in unit is to be allocated CAIR NO\textsubscript{X} Ozone Season allowances,

(i) The heat input (in mmBtu) used for calculating the CAIR NO\textsubscript{X} Ozone Season allowance allocations will be determined as described in paragraph (b)(1) of this section.

(ii) The NO\textsubscript{X} emission rate (in lb/mmBtu) used for calculating the CAIR NO\textsubscript{X} Ozone Season allowance allocation will be the lesser of:

(A) 0.15 lb/mmBtu;

(B) The CAIR NO\textsubscript{X} Ozone Season opt-in unit’s baseline NO\textsubscript{X} emissions rate (in lb/mmBtu) determined under §96.384(d); or

(C) The most stringent State or Federal NO\textsubscript{X} emissions limitation applicable to the CAIR NO\textsubscript{X} Ozone Season opt-in unit at any time during the control period for which CAIR NO\textsubscript{X} Ozone Season allowances are to be allocated.

(iii) The permitting authority will allocate CAIR NO\textsubscript{X} Ozone Season allowances to the CAIR NO\textsubscript{X} Ozone Season opt-in unit in an amount equaling the heat input under paragraph (c)(2)(i) of this section, multiplied by the NO\textsubscript{X} emission rate under paragraph (c)(2)(ii) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole allowance as appropriate.

(d) Recordation. (1) The Administrator will record, in the compliance account of the source that includes the CAIR NO\textsubscript{X} Ozone Season opt-in unit, the CAIR NO\textsubscript{X} Ozone Season allowances allocated by the permitting authority to the CAIR NO\textsubscript{X} Ozone Season opt-in unit under paragraph (a)(1) of this section.

(2) By September 1, of the control period in which a CAIR NO\textsubscript{X} Ozone Season opt-in unit enters the CAIR NO\textsubscript{X} Ozone Season Trading Program under §96.384(g), and September 1 of each year thereafter, the Administrator will record, in the compliance account of the source that includes the CAIR NO\textsubscript{X} Ozone Season opt-in unit, the CAIR NO\textsubscript{X} Ozone Season allowances allocated by the permitting authority to the CAIR NO\textsubscript{X} Ozone Season opt-in unit under paragraph (a)(2) of this section.

[70 FR 25382, May 12, 2005, as amended at 71 FR 25396, Apr. 28, 2006]
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AUTHORITY: 42 U.S.C. 7401, 7403, 7410, 7426, 7601, and 7651, et seq.
Subpart A—NO\textsubscript{\textit{X}} Budget Trading Program General Provisions

\textbf{§ 97.1 Purpose.}

This part establishes general provisions and the applicability, permitting, allowance, excess emissions, monitoring, and opt-in provisions for the federal NO\textsubscript{\textit{X}} Budget Trading Program, under section 126 of the CAA and § 52.34 of this chapter, as a means of mitigating the interstate transport of ozone and nitrogen oxides, an ozone precursor.

\textbf{§ 97.2 Definitions.}

The terms used in this part shall have the meanings set forth in this section as follows:

\textit{Account number} means the identification number given by the Administrator to each NO\textsubscript{\textit{X}} Allowance Tracking System account.

\textit{Acid Rain emissions limitation} means, as defined in § 72.2 of this chapter, a limitation on emissions of sulfur dioxide or nitrogen oxides under the Acid Rain Program under title IV of the Clean Air Act.

\textit{Administrator} means the Administrator of the United States Environmental Protection Agency or the Administrator’s duly authorized representative.

\textit{Allocate} or \textit{allocation} means, with regard to NO\textsubscript{\textit{X}} allowances, the determination by the Administrator of the number of NO\textsubscript{\textit{X}} allowances to be initially credited to a NO\textsubscript{\textit{X}} Budget unit or an allocation set-aside.

\textit{Automated data acquisition and handling system} or \textit{DAHS} means that component of the CEMS, or other emissions monitoring system approved for use under subpart \textit{H} of this part, designed to interpret and convert individual output signals from pollutant concentration monitors, flow monitors, diluent gas monitors, and other components of the monitoring system to produce a continuous record of the measured parameters in the measurement units required by subpart \textit{H} of this part.

\textit{Boiler} means an enclosed fossil or other fuel-fired combustion device used to produce heat and to transfer heat to recirculating water, steam, or other medium.

\textit{Clean Air Act} means the Clean Air Act, 42 U.S.C. 7401 et seq.

\textit{Combined cycle system} means a system comprised of one or more combustion turbines, heat recovery steam generators, and steam turbines configured to improve overall efficiency of electricity generation or steam production.

\textit{Combustion turbine} means an enclosed fossil or other fuel-fired device that is comprised of a compressor, a combustor, and a turbine, and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine.

\textit{Commence commercial operation} means, with regard to a unit that serves a generator, to have begun to produce steam, gas, or other heated medium used to generate electricity for sale or use, including test generation. Except as provided in § 97.4(b), § 97.5, or subpart \textit{I} of this part, for a unit that is a NO\textsubscript{\textit{X}} Budget unit under § 97.4(a) on the date the unit commences commercial operation, such date shall remain the unit’s date of commencement of commercial operation even if the unit is subsequently modified, reconstructed, or repowered. Except as provided in § 97.4(b), § 97.5, or subpart \textit{I} of this part, for a unit that is not a NO\textsubscript{\textit{X}} Budget unit under § 97.4(a) on the date the unit commences commercial operation, the date the unit becomes a NO\textsubscript{\textit{X}} Budget unit under § 97.4(a) shall be the unit’s date of commencement of commercial operation.

\textit{Commence operation} means to have begun any mechanical, chemical, or electronic process, including, with regard to a unit, start-up of a unit’s combustion chamber. Except as provided in § 97.4(b), § 97.5, or subpart \textit{I} of this part, for a unit that is a NO\textsubscript{\textit{X}} Budget unit under § 97.4(a) on the date of commencement of operation, such date shall remain the unit’s date of commencement of operation even if the unit is subsequently modified, reconstructed, or repowered. Except as provided in § 97.4(b), § 97.5, or subpart \textit{I} of this part, for a unit that is not a NO\textsubscript{\textit{X}} Budget unit under § 97.4(a) on the date
of commencement of operation, the date the unit becomes a NO\textsubscript{X} Budget unit under §97.4(a) shall be the unit’s date of commencement of operation.

Common stack means a single flue through which emissions from two or more units are exhausted.

Compliance account means a NO\textsubscript{X} Allowance Tracking System account, established by the Administrator for a NO\textsubscript{X} Budget unit under subpart F of this part, in which the NO\textsubscript{X} allowances available for use by the unit for a control period for the purpose of meeting the unit’s NO\textsubscript{X} Budget emissions limitation.

Continuous emission monitoring system or CEMS means the equipment required under subpart H of this part to sample, analyze, measure, and provide, by means of readings taken at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of nitrogen oxides (NO\textsubscript{X}) emissions, stack gas volumetric flow rate or stack gas moisture content (as applicable), in a manner consistent with part 75 of this chapter. The following are the principal types of continuous emission monitoring systems required under subpart H of this part:

(1) A flow monitoring system, consisting of a stack flow rate monitor and an automated DAHS. A flow monitoring system provides a permanent, continuous record of stack gas volumetric flow rate, in units of standard cubic feet per hour (scfh);

(2) A nitrogen oxides concentration monitoring system, consisting of a NO\textsubscript{X} pollutant concentration monitor and an automated DAHS. A NO\textsubscript{X} concentration monitoring system provides a permanent, continuous record of stack gas moisture content, in units of percent H\textsubscript{2}O (percent H\textsubscript{2}O);

(3) A moisture monitoring system, as defined in §75.11(b)(2) of this chapter. A moisture monitoring system provides a permanent, continuous record of the stack gas moisture content, in units of percent H\textsubscript{2}O (percent H\textsubscript{2}O);

(4) A moisture monitoring system, as defined in §75.11(b)(2) of this chapter. A moisture monitoring system provides a permanent, continuous record of the stack gas moisture content, in units of percent H\textsubscript{2}O (percent H\textsubscript{2}O).

Control period means the period beginning May 1 of a year and ending on September 30 of the same year, inclusive.

Electricity for sale under firm contract to the grid means electricity for sale where the capacity involved is intended to be available at all times during the period covered by a guaranteed commitment to deliver, even under adverse conditions.

Emissions means air pollutants exhausted from a unit or source into the atmosphere, as measured, recorded, and reported to the Administrator by the NO\textsubscript{X} authorized account representative and as determined by the Administrator in accordance with subpart H of this part.


Excess emissions means any tonnage of nitrogen oxides emitted by a NO\textsubscript{X} Budget unit during a control period that exceeds the NO\textsubscript{X} Budget emissions limitation for the unit.

Fossil fuel means natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material.

Fossil fuel fired means, with regard to a unit:

(1) For units that commenced operation before January 1, 1996, the combustion of fossil fuel, alone or in combination with any other fuel, where fossil fuel actually combusted comprises more than 50 percent of the annual heat input on a Btu basis during 1995, or, if a unit had no heat input in 1995, during the last year of operation of the unit prior to 1995;

(2) For units that commenced operation on or after January 1, 1996 and before January 1, 1997, the combustion of fossil fuel, alone or in combination with any other fuel, where fossil fuel
actually combusted comprises more than 50 percent of the annual heat input on a Btu basis during 1996; or

(3) For units that commence operation on or after January 1, 1997:

(i) The combination of fossil fuel, alone or in combustion with any other fuel, where fossil fuel actually combusted comprises more than 50 percent of the annual heat input on a Btu basis during any year; or

(ii) The combination of fossil fuel, alone or in combination with any other fuel, where fossil fuel is projected to comprise more than 50 percent of the annual heat input on a Btu basis during any year, provided that the unit shall be “fossil fuel-fired” as of the date, during such year, on which the unit begins combusting fossil fuel.

General account means a NO\(_X\) Allowance Tracking System account, established under subpart F of this part, that is not a compliance account or an overdraft account.

Generator means a device that produces electricity.

Heat input means, with regard to a specified period to time, the product (in mmBtu/time) of the gross calorific value of the fuel (in Btu/lb) divided by 1,000,000 Btu/mmBtu and multiplied by the fuel feed rate into a combustion device (in lb of fuel/time), as measured, recorded, and reported to the Administrator by the NO\(_X\) authorized account representative and as determined by the physical design and physical characteristics of the unit.

Heat input rate means the amount of heat input (in mmBtu) divided by unit operating time (in hr) or, with regard to a specific fuel, the amount of heat input attributed to the fuel (in mmBtu) divided by the unit operating time (in hr) during which the unit combusts the fuel.

Life-of-the-unit, firm power contractual arrangement means a unit participation power sales agreement under which a utility or industrial customer reserves, or is entitled to receive, a specified amount or percentage of nameplate capacity and associated energy from any specified unit and pays its proportional amount of such unit’s total costs, pursuant to a contract:

(1) For the life of the unit;
(2) For a cumulative term of no less than 30 years, including contracts that permit an election for early termination; or
(3) For a period equal to or greater than 25 years or 70 percent of the economic useful life of the unit determined as of the time the unit is built, with option rights to purchase or release some portion of the nameplate capacity and associated energy generated by the unit at the end of the period.

Maximum design heat input means the ability of a unit to combust a stated maximum amount of fuel per hour (in mmBtu/hr) on a steady state basis, as determined by the physical design and physical characteristics of the unit.

Maximum potential hourly heat input means an hourly heat input (in mmBtu/hr) used for reporting purposes when a unit lacks certified monitors to report heat input. If the unit intends to use appendix D of part 75 of this chapter to report heat input, this value should be calculated, in accordance with part 75 of this chapter, using the maximum fuel flow rate and the maximum gross calorific value. If the unit intends to use a flow monitor and a diluent gas monitor, this value should be reported, in accordance with part 75 of this chapter, using the maximum potential flowrate and either the maximum carbon dioxide concentration (in percent CO\(_2\)) or the minimum oxygen concentration (in percent O2).

Maximum potential NO\(_X\) emission rate means the emission rate of nitrogen oxides (in lb/mmBtu) calculated in accordance with section 3 of appendix F of part 75 of this chapter, using the maximum potential concentration of NO\(_X\) under section 2 of appendix A of part 75 of this chapter, and either the maximum oxygen concentration (in percent O2) or the minimum carbon dioxide concentration (in percent CO\(_2\)), under all operating conditions of the unit except for unit start up, shutdown, and upsets.

Maximum rated hourly heat input means a unit specific maximum hourly heat input (in mmBtu/hr) which is the higher of the manufacturer’s maximum
rated hourly heat input or the highest observed hourly heat input.

Monitoring system means any monitoring system that meets the requirements of subpart H of this part, including a continuous emissions monitoring system, an excepted monitoring system, or an alternative monitoring system.

Most stringent State or Federal NO\textsubscript{X} emissions limitation means the lowest NO\textsubscript{X} emissions limitation (in lb/mm\text{Btu}) that is applicable to the unit under State or Federal law, regardless of the averaging period to which the emissions limitation applies.

Nameplate capacity means the maximum electrical generating output (in MWe) that a generator can sustain over a specified period of time when not restricted by seasonal or other deratings as measured in accordance with the United States Department of Energy standards.

Non-title V permit means a federally enforceable permit administered by the permitting authority pursuant to the Clean Air Act and regulatory authority under the Clean Air Act, other than title V of the Clean Air Act and part 70 or 71 of this chapter.

NO\textsubscript{X} allowance means a limited authorization by the Administrator under the NO\textsubscript{X} Budget Trading Program to emit up to one ton of nitrogen oxides during the control period of the specified year or of any year thereafter, except as provided under §97.54(f). No provision of the NO\textsubscript{X} Budget Trading Program, the NO\textsubscript{X} Budget permit application, the NO\textsubscript{X} Budget permit, or an exemption under §97.4(b) or §97.5 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization, which does not constitute a property right. For purposes of all sections of this part except §97.40, §97.41, §97.42, §97.43, or §97.88, “NO\textsubscript{X} allowance” also includes an authorization to emit up to one ton of nitrogen oxides during the control period of the specified year or of any year thereafter by the permitting authority or the Administrator in accordance with a State NO\textsubscript{X} Budget Trading Program established, and approved and administered by the Administrator, pursuant to §51.121 of this chapter.

NO\textsubscript{X} allowance deduction or deduct NO\textsubscript{X} allowances means the permanent withdrawal of NO\textsubscript{X} allowances by the Administrator from a NO\textsubscript{X} Allowance Tracking System compliance account or overdraft account to account for the number of tons of NO\textsubscript{X} emissions from a NO\textsubscript{X} Budget unit for a control period, determined in accordance with subparts H and F of this part, or for any other NO\textsubscript{X} allowance withdrawal requirement under this part.

NO\textsubscript{X} Allowance Tracking System means the system by which the Administrator records allocations, deductions, and transfers of NO\textsubscript{X} allowances under the NO\textsubscript{X} Budget Trading Program.

NO\textsubscript{X} Allowance Tracking System account means an account in the NO\textsubscript{X} Allowance Tracking System established by the Administrator for purposes of recording the allocation, holding, transferring, or deducting of NO\textsubscript{X} allowances.

NO\textsubscript{X} allowance transfer deadline means midnight of November 30 or, if November 30 is not a business day, midnight of the first business day thereafter and is the deadline by which NO\textsubscript{X} allowances must be submitted for recordation in a NO\textsubscript{X} Budget unit’s compliance account, or the overdraft account of the source where the unit is located, in order to meet the unit’s NO\textsubscript{X} Budget emissions limitation for the control period immediately preceding such deadline.

NO\textsubscript{X} allowances held or hold NO\textsubscript{X} allowances means the NO\textsubscript{X} allowances recorded by the Administrator, or submitted to the Administrator for recordation, in accordance with subparts F and G of this part, in a NO\textsubscript{X} Allowance Tracking System account.

NO\textsubscript{X} authorized account representative means, for a NO\textsubscript{X} Budget source or NO\textsubscript{X} Budget unit at the source, the natural person who is authorized by the owners and operators of the source and all NO\textsubscript{X} Budget units at the source, in accordance with subpart B of this part, to represent and legally bind each owner and operator in matters pertaining to the NO\textsubscript{X} Budget Trading Program or, for a general account, the natural person who is authorized, in accordance with subpart F of this part, to transfer or otherwise dispose of NO\textsubscript{X} allowances held in the general account.
NOX Budget emissions limitation means, for a NOX Budget unit, the tonnage equivalent of the NOX allowances available for compliance deduction for the unit under §97.54(a), (b), (e), and (f) in a control period adjusted by deductions of such NOX allowances to account for actual heat input under §97.42(e) for the control period or to account for excess emissions for a prior control period under §97.54(d) or to account for withdrawal from the NOX Budget Trading Program, or for a change in regulatory status, of a NOX Budget opt-in unit under §97.86 or §97.87.

NOX Budget opt-in permit means a NOX Budget permit covering a NOX Budget opt-in unit.

NOX Budget opt-in unit means a unit that has been elected to become a NOX Budget unit under the NOX Budget Trading Program and whose NOX Budget opt-in permit has been issued and is in effect under subpart I of this part.

NOX Budget permit means the legally binding and federally enforceable written document, or portion of such document, issued by the permitting authority under this part, including any permit revisions, specifying the NOX Budget Trading Program requirements applicable to a NOX Budget source, to each NOX Budget unit at the NOX Budget source, and to the owners and operators and the NOX authorized account representative of the NOX Budget source and each NOX Budget unit.

NOX Budget source means a source that includes one or more NOX Budget units.

NOX Budget Trading Program means a multistate nitrogen oxides air pollution control and emission reduction program established by the Administrator in accordance with this part and pursuant to §52.34 of this chapter, as a means of mitigating the interstate transport of ozone and nitrogen oxides, an ozone precursor.

NOX Budget unit means a unit that is subject to the NOX Budget emissions limitation under §97.4(a) or §97.80.

Operating means, with regard to a unit under §§97.22(d)(2) and 97.80, having documented heat input for more than 676 hours in the 6 months immediately preceding the submission of an application for an initial NOX Budget permit under §97.83(a). The unit’s documented heat input will be determined in accordance with part 75 of this chapter if the unit was otherwise subject to the requirements of part 75 of this chapter during that 6-month period or will be based on the best available data reported to the Administrator for the unit if the unit was not otherwise subject to the requirements of part 75 of this chapter during that 6-month period.

Operator means any person who operates, controls, or supervises a NOX Budget unit, a NOX Budget source, or a unit for which an application for a NOX Budget opt-in permit under §97.83 is submitted and not denied or withdrawn and shall include, but not be limited to, any holding company, utility system, or plant manager of such a unit or source.

Opt-in means to be elected to become a NOX Budget unit under the NOX Budget Trading Program through a final, effective NOX Budget opt-in permit under subpart I of this part.

Overdraft account means the NOX Allowance Tracking System account, established by the Administrator under subpart F of this part, for each NOX Budget source where there are two or more NOX Budget units.

Owner means any of the following persons:

(1) Any holder of any portion of the legal or equitable title in a NOX Budget unit or in a unit for which an application for a NOX Budget opt-in permit under §97.83 is submitted and not denied or withdrawn; or

(2) Any holder of a leasehold interest in a NOX Budget unit or in a unit for which an application for a NOX Budget opt-in permit under §97.83 is submitted and not denied or withdrawn; or

(3) Any purchaser of power from a NOX Budget unit or from a unit for which an application for a NOX Budget opt-in permit under §97.83 is submitted and not denied or withdrawn under a life-of-the-unit, firm power contractual arrangement. However, unless expressly provided for in a leasehold agreement, owner shall not include a passive lessor, or a person who has an equitable interest through such lessor, whose rental payments are not based, either directly or indirectly, upon the revenues or income from the NOX.
Budget unit or the unit for which an application for a NO\textsubscript{X} Budget opt-in permit under §97.83 is submitted and not denied or withdrawn; or

(4) With respect to any general account, any person who has an ownership interest with respect to the NO\textsubscript{X} allowances held in the general account and who is subject to the binding agreement for the NO\textsubscript{X} authorized account representative to represent that person’s ownership interest with respect to the NO\textsubscript{X} allowances.

Percent monitor data availability means, for purposes of §97.43(a)(1) and §97.84(b), total unit operating hours for which quality-assured data were recorded under subpart H of this part in a control period, divided by the total number of unit operating hours in the control period, and multiplied by 100 percent.

Permitting authority means the State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to issue or revise permits to meet the requirements of the NO\textsubscript{X} Budget Trading Program in accordance with subpart C of this part.

Potential electrical output capacity means 33 percent of a unit’s maximum design heat input.

Receive or receipt of means, when referring to the permitting authority or the Administrator, to come into possession of a document, information, or correspondence (whether sent in writing or by authorized electronic transmission), as indicated in an official correspondence log, or by a notation made on the document, information, or correspondence, by the permitting authority or the Administrator in the regular course of business.

Recordation, record, or recorded means, with regard to NO\textsubscript{X} allowances, the movement of NO\textsubscript{X} allowances by the Administrator from one NO\textsubscript{X} Allowance Tracking System account to another, for purposes of allocation, transfer, or deduction.

Reference method means any direct test method of sampling and analyzing for an air pollutant as specified in appendix A of part 60 of this chapter.

Serial number means, when referring to NO\textsubscript{X} allowances, the unique identification number assigned to each NO\textsubscript{X} allowance by the Administrator, under §97.53(c).

Source means any governmental, institutional, commercial, or industrial structure, installation, plant, building, or facility that emits or has the potential to emit any regulated air pollutant under the Clean Air Act. For purposes of section 502(c) of the Clean Air Act, a “source,” including a “source” with multiple units, shall be considered a single “facility.”

State means one of the 48 contiguous States or a portion thereof or the District of Columbia that is specified in §52.34 of this chapter and in which are located units for which the Administrator makes an effective finding under §52.34 of this chapter.

Submit or serve means to send or transmit a document, information, or correspondence to the person specified in accordance with the applicable regulation:

(1) In person;
(2) By United States Postal Service; or
(3) By other means of dispatch or transmission and delivery. Compliance with any “submission,” “service,” or “mailing” deadline shall be determined by the date of dispatch, transmission, or mailing and not the date of receipt.

Title V operating permit means a permit issued under title V of the Clean Air Act and part 70 or part 71 of this chapter.

Title V operating permit regulations means the regulations that the Administrator has approved or issued as meeting the requirements of title V of the Clean Air Act and part 70 or 71 of this chapter.

Ton or tonnage means any “short ton” (i.e., 2,000 pounds). For the purpose of determining compliance with the NO\textsubscript{X} Budget emissions limitation, total tons for a control period shall be calculated as the sum of all recorded hourly emissions (or the tonnage equivalent of the recorded hourly emissions rates) in accordance with subpart H of this part, with any remaining fraction of a ton less than 0.50 ton deemed to equal zero tons and any fraction of a ton greater than 0.50 ton deemed to equal one ton.
Unit means a fossil fuel-fired stationary boiler, combustion turbine, or combined cycle system.

Unit operating day means a calendar day in which a unit combusts any fuel.

Unit operating hour or hour of unit operation means any hour (or fraction of an hour) during which a unit combusts any fuel.

[65 FR 2727, Jan. 18, 2000, as amended at 69 FR 21645, Apr. 21, 2004]

§ 97.3 Measurements, abbreviations, and acronyms.

Measurements, abbreviations, and acronyms used in this part are defined as follows:

Btu—British thermal unit.

CO$_2$—carbon dioxide.

hr—hour.

kW—kilowatt electrical.

kWh—kilowatt hour.

lb—pounds.

mmBtu—million Btu.

MWe—megawatt electrical.

NO$_X$—nitrogen oxides.

O$_2$—oxygen.

ton—2000 pounds.

§ 97.4 Applicability.

(a) The following units in a State shall be a NO$_X$ Budget unit, and any source that includes one or more such units shall be a NO$_X$ Budget source, subject to the requirements of this part:

(1)(i) For units other than cogeneration units—

(A) For units commencing operation before January 1, 1997, a unit serving during 1995 or 1996 a generator—

(I) With a nameplate capacity greater than 25 MWe and

(2) Producing electricity for sale under a firm contract to the electric grid.

(B) For units commencing operation in 1997 or 1998, a unit serving during 1997 or 1998 a generator with a nameplate capacity greater than 25 MWe and failing to qualify as an unaffected unit under §72.6(b)(4) of this chapter for 1997 or 1998 under the Acid Rain Program.

(C) For units commencing operation on or after January 1, 1999, a unit serving at any time a generator with a nameplate capacity greater than 25 MWe and failing to qualify as an unaffected unit under §72.6(b)(4) of this chapter under the Acid Rain Program for any year.

(2)(i) For units other than cogeneration units—

(A) For units commencing operation before January 1, 1997, a unit—

(I) With a maximum design heat input greater than 250 mmBtu/hr and

(2) Not serving during 1995 or 1996 a generator producing electricity for sale under a firm contract to the electric grid.

(B) For units commencing operation in 1997 or 1998, a unit—

(I) With a maximum design heat input greater than 250 mmBtu/hr and

(2) Not serving during 1997 or 1998 a generator producing electricity for sale under a firm contract to the electric grid.

(C) For units commencing on or after January 1, 1999, a unit with a maximum design heat input greater than 250 mmBtu/hr:

(I) At no time serving a generator producing electricity for sale; or

(2) At any time serving a generator with a nameplate capacity of 25 MWe or less producing electricity for sale and with the potential to use no more than 50 percent of the potential electrical output capacity of the unit.

(ii) For cogeneration units—

(A) For units commencing operation before January 1, 1997, a unit with a maximum design heat input greater than 250 mmBtu/hr and qualifying as
an unaffected unit under §72.6(b)(4) of this chapter under the Acid Rain Program for 1995 and 1996.

(B) For units commencing operation in 1997 or 1998, a unit with a maximum design heat input greater than 250 mmBtu/hr and qualifying as an unaffected unit under §72.6(b)(4) under the Acid Rain Program for 1997 and 1998.

(C) For units commencing on or after January 1, 1999, a unit with a maximum design heat input greater than 250 mmBtu/hr and qualifying as an unaffected unit under §72.6(b)(4) of this chapter under the Acid Rain Program for each year.

(b)(1) Notwithstanding paragraph (a) of this section, a unit under paragraph (a)(1) or (a)(2) of this section that has a federally enforceable permit that restricts the unit to combusting only natural gas or fuel oil (as defined in §75.2 of this chapter) during a control period includes a NO\textsubscript{X} emission limitation restricting NO\textsubscript{X} emissions during a control period to 25 tons or less, and includes the special provisions in paragraph (b)(4) of this section shall be exempt from the requirements of the NO\textsubscript{X} Budget Trading Program, except for the provisions of this paragraph (b), §97.2, §97.3, §97.4(a), §97.7, and subparts E, F, and G of this part. The NO\textsubscript{X} emission limitation under this paragraph (b)(1) shall restrict NO\textsubscript{X} emissions during the control period by limiting unit operating hours. The restriction on unit operating hours shall be calculated by dividing 25 tons by the unit’s maximum potential hourly NO\textsubscript{X} mass emissions, which shall equal the unit’s maximum rated hourly heat input multiplied by the highest default NO\textsubscript{X} emission rate otherwise applicable to the unit under §75.19 of this chapter.

(2) The exemption under paragraph (b)(1) of this section shall become effective as follows:

(i) The exemption shall become effective on the date on which the NO\textsubscript{X} emission limitation and the special provisions in the permit under paragraph (b)(1) of this section become final; or

(ii) If the NO\textsubscript{X} emission limitation and the special provisions in the permit under paragraph (b)(1) of this section become final during a control period and after the first date on which the unit operates during such control period, then the exemption shall become effective on May 1 of such control period, provided that such NO\textsubscript{X} emission limitation and the special provisions apply to the unit as of such first date of operation. If such NO\textsubscript{X} emission limitation and special provisions do not apply to the unit as of such first date of operation, then the exemption under paragraph (b)(1) of this section shall become effective on October 1 of the year during which such NO\textsubscript{X} emission limitation and the special provisions become final.

(3) The permitting authority that issues a federally enforceable permit under paragraph (b)(1) of this section for a unit under paragraph (a)(1) or (a)(2) of this section will provide the Administrator written notice of the issuance of such permit and, upon request, a copy of the permit.

(4) Special provisions. (i) A unit exempt under paragraph (b)(1) of this section shall comply with the restriction on fuel use and unit operating hours described in paragraph (b)(1) of this section during the control period in each year.

(ii) The Administrator will allocate NO\textsubscript{X} allowances to the unit under §§97.41(a) through (c) and 97.42(a) through (c). For each control period for which the unit is allocated NO\textsubscript{X} allowances under §§97.41(a) through (c) and 97.42(a) through (c):

(A) The owners and operators of the unit must specify a general account, in which the Administrator will record the NO\textsubscript{X} allowances; and

(B) After the Administrator records a NO\textsubscript{X} allowance allocations under §§97.41(a) through (c) and 97.42(a) through (c), the Administrator will deduct, from the general account under paragraph (b)(4)(i)(A) of this section, NO\textsubscript{X} allowances that are allocated for the same or a prior control period as the NO\textsubscript{X} allowances allocated to the unit under §§97.41(a) through (c) and 97.42(a) through (c) and that equal the NO\textsubscript{X} emission limitation (in tons of NO\textsubscript{X}) on which the unit’s exemption under paragraph (b)(1) of this section is
based. The NO\textsubscript{X} authorized account representative shall ensure that such general account contains the NO\textsubscript{X} allowances necessary for completion of such deduction.

(iii) A unit exempt under this paragraph (b) shall report hours of unit operation during the control period in each year to the permitting authority by November 1 of that year.

(iv) For a period of 5 years from the date the records are created, the owners and operators of a unit exempt under paragraph (b)(1) of this section shall retain, at the source that includes the unit, records demonstrating that the conditions of the federally enforceable permit under paragraph (b)(1) of this section were met, including the restriction on fuel use or unit operating hours. The 5-year period for keeping records may be extended for cause, at any time prior to the end of the period, in writing by the permitting authority or the Administrator. The owners and operators bear the burden of proof that the unit met the restriction on fuel use or unit operating hours.

(v) The owners and operators and, to the extent applicable, the NO\textsubscript{X} authorized account representative of a unit exempt under paragraph (b)(1) of this section shall comply with the requirements of the NO\textsubscript{X} Budget Trading Program concerning all periods for which the exemption is not in effect, even if such requirements arise, or must be complied with, after the exemption takes effect.

(vi) On the earlier of the following dates, a unit exempt under paragraph (b)(1) of this section shall lose its exemption:

(A) The date on which the restriction on fuel use or unit operating hours described in paragraph (b)(1) of this section is removed from the unit’s federally enforceable permit or otherwise becomes no longer applicable to any control period starting in 2004; or

(B) The first date on which the unit fails to comply, or with regard to which the owners and operators fail to meet their burden of proving that the unit is complying, with the restriction on fuel use or unit operating hours described in paragraph (b)(1) of this section during any control period starting in 2004.

(vii) A unit that loses its exemption in accordance with paragraph (b)(4)(vi) of this section shall be subject to the requirements of this part. For the purpose of applying permitting requirements under subpart C of this part, allocating allowances under subpart E of this part, and applying monitoring requirements under subpart H of this part, the unit shall be treated as commencing operation and, if the unit is covered by paragraph (a)(1) of this section, commencing commercial operation on the date the unit loses its exemption.

(viii) A unit that is exempt under paragraph (b)(1) of this section is not eligible to be a NO\textsubscript{X} Budget opt-in unit under subpart I of this part.

[65 FR 2727, Jan. 18, 2000, as amended at 67 FR 21529, Apr. 30, 2002; 69 FR 21645, Apr. 21, 2004]

§ 97.5 Retired unit exemption.

(a) This section applies to any NO\textsubscript{X} Budget unit, other than a NO\textsubscript{X} Budget opt-in unit, that is permanently retired.

(b)(1) Any NO\textsubscript{X} Budget unit, other than a NO\textsubscript{X} Budget opt-in unit, that is permanently retired shall be exempt from the NO\textsubscript{X} Budget Trading Program, except for the provisions of this section, §97.2, §97.3, §97.4, §97.7, and subparts E, F, and G of this part.

(2) The exemption under paragraph (b)(1) of this section shall become effective the day on which the unit is permanently retired. Within 30 days of permanent retirement, the NO\textsubscript{X} authorized account representative (authorized in accordance with subpart B of this part) shall submit a statement to the permitting authority otherwise responsible for administering any NO\textsubscript{X} Budget permit for the unit. The NO\textsubscript{X} authorized account representative shall submit a copy of the statement to the Administrator. The statement shall state, in a format prescribed by the permitting authority, that the unit is permanently retired and will comply with the requirements of paragraph (c) of this section.

(3) After receipt of the notice under paragraph (b)(2) of this section, the permitting authority will amend any permit covering the source at which
§ 97.6 Standard requirements.

(a) Permit requirements.

(1) The NO\textsubscript{X} authorized account representative of each NO\textsubscript{X} Budget source required to have a federally enforceable permit shall not resume operation unless the NO\textsubscript{X} authorized account representative of the source submits a complete NO\textsubscript{X} Budget permit application under §97.22 for the unit not less than 18 months (or such lesser time provided by the permitting authority) before the later of May 31, 2004 or the date on which the unit resumes operation.

(2) The unit is located to add the provisions and requirements of the exemption under paragraphs (b)(1) and (c) of this section.

(c) Special provisions.

(1) A unit exempt under this section shall not emit any nitrogen oxides, starting on the date that the exemption takes effect.

(2) The Administrator will allocate NO\textsubscript{X} allowances under subpart E of this part to a unit exempt under this section. For each control period for which the unit is allocated one or more NO\textsubscript{X} allowances, the owners and operators of the unit shall specify a general account, in which the Administrator will record such NO\textsubscript{X} allowances.

(3) For a period of 5 years from the date the records are created, the owners and operators of a unit exempt under this section shall retain at the source that includes the unit, records demonstrating that the unit is permanently retired. The 5-year period for keeping records may be extended for cause, at any time prior to the end of the period, in writing by the permitting authority or the Administrator. The owners and operators bear the burden of proof that the unit is permanently retired.

(4) The owners and operators and, to the extent applicable, the NO\textsubscript{X} authorized account representative of a unit exempt under this section shall comply with the requirements of the NO\textsubscript{X} Budget Trading Program concerning all periods for which the exemption is not in effect, even if such requirements arise, or must be complied with, after the exemption takes effect.

(5)(i) A unit exempt under this section and located at a source that is required, or but for this exemption would be required, to have a title V operating permit shall not resume operation unless the NO\textsubscript{X} authorized account representative of the source submits a complete NO\textsubscript{X} Budget permit application under §97.22 for the unit not less than 18 months (or such lesser time provided by the permitting authority) before the later of May 31, 2004 or the date on which the unit resumes operation.

(6) On the earlier of the following dates, a unit exempt under paragraph (b) of this section shall lose its exemption:

(i) The date on which the NO\textsubscript{X} authorized account representative submits a NO\textsubscript{X} Budget permit application under paragraph (c)(5) of this section;

(ii) The date on which the NO\textsubscript{X} authorized account representative is required under paragraph (c)(5) of this section to submit a NO\textsubscript{X} Budget permit application; or

(iii) The date on which the unit resumes operation, if the unit is not required to submit a NO\textsubscript{X} permit application.

(7) For the purpose of applying monitoring requirements under subpart H of this part, a unit that loses its exemption under this section shall be treated as a unit that commences operation or commercial operation on the first date on which the unit resumes operation.

(8) A unit that is exempt under this section is not eligible to be a NO\textsubscript{X} Budget opt-in unit under subpart I of this part.

[65 FR 2727, Jan. 18, 2000, as amended at 67 FR 21529, Apr. 30, 2002; 69 FR 21646, Apr. 21, 2004]
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permit application and issue or deny a NO\textsubscript{X} Budget permit.

(2) The owners and operators of each NO\textsubscript{X} Budget source required to have a federally enforceable permit and each NO\textsubscript{X} Budget unit required to have a federally enforceable permit at the source shall have a NO\textsubscript{X} Budget permit issued by the permitting authority and operate the unit in compliance with such NO\textsubscript{X} Budget permit.

(3) The owners and operators of a NO\textsubscript{X} Budget source that is not otherwise required to have a federally enforceable permit and not required to submit a NO\textsubscript{X} Budget permit application, and to have a NO\textsubscript{X} Budget permit, under subpart C of this part for such NO\textsubscript{X} Budget source.

(b) Monitoring requirements. (1) The owners and operators and, to the extent applicable, the NO\textsubscript{X} authorized account representative of each NO\textsubscript{X} Budget source and each NO\textsubscript{X} Budget unit at the source shall comply with the monitoring requirements of subpart H of this part.

(2) The emissions measurements recorded and reported in accordance with subpart H of this part shall be used to determine compliance by the unit with the NO\textsubscript{X} Budget emissions limitation under paragraph (c) of this section.

(c) Nitrogen oxides requirements. (1) The owners and operators of each NO\textsubscript{X} Budget source and each NO\textsubscript{X} Budget unit at the source shall hold NO\textsubscript{X} allowances available for compliance deductions under §97.54(a), (b), (e), or (f) as of the NO\textsubscript{X} allowance transfer deadline, in the unit’s compliance account and the source’s overdraft account in an amount not less than the total NO\textsubscript{X} emissions for the control period from the unit, as determined in accordance with subpart H of this part, plus any amount necessary to account for actual heat input under §97.42(e) for the control period or to account for excess emissions for a prior control period under §97.54(d) or to account for withdrawal from the NO\textsubscript{X} Budget Trading Program, or a change in regulatory status, of a NO\textsubscript{X} Budget opt-in unit under §97.86 or §97.87.

(2) Each ton of nitrogen oxides emitted in excess of the NO\textsubscript{X} Budget emissions limitation shall constitute a separate violation of this part, the Clean Air Act, and applicable State law.

(3) A NO\textsubscript{X} Budget unit shall be subject to the requirements under paragraph (c)(1) of this section starting on the later of May 31, 2004 or the date on which the unit commences operation.

(4) NO\textsubscript{X} allowances shall be held in, deducted from, or transferred among NO\textsubscript{X} Allowance Tracking System accounts in accordance with subparts E, F, G, and I of this part.

(5) A NO\textsubscript{X} allowance shall not be deducted, in order to comply with the requirements under paragraph (c)(1) of this section, for a control period in a year prior to the year for which the NO\textsubscript{X} allowance was allocated.

(6) A NO\textsubscript{X} allowance allocated by the Administrator under the NO\textsubscript{X} Budget Trading Program is a limited authorization to emit one ton of nitrogen oxides in accordance with the NO\textsubscript{X} Budget Trading Program. No provision of the NO\textsubscript{X} Budget Trading Program, the NO\textsubscript{X} Budget permit application, the NO\textsubscript{X} Budget permit, or an exemption under §97.4(b) or §97.5 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.

(7) A NO\textsubscript{X} allowance allocated by the Administrator under the NO\textsubscript{X} Budget Trading Program does not constitute a property right.

(8) Upon recordation by the Administrator under subpart F or G of this part, every allocation, transfer, or deduction of a NO\textsubscript{X} allowance to or from a NO\textsubscript{X} Budget unit’s compliance account or the overdraft account of the source where the unit is located is incorporated automatically in any NO\textsubscript{X} Budget permit of the NO\textsubscript{X} Budget unit.

(d) Excess emissions requirements. (1) The owners and operators of a NO\textsubscript{X} Budget unit that has excess emissions in any control period shall:

(i) Surrender the NO\textsubscript{X} allowances required for deduction under §97.54(d)(1); and

(ii) Pay any fine, penalty, or assessment or comply with any other remedy imposed under §97.54(d)(3).

(e) Recordkeeping and reporting requirements. (1) Unless otherwise provided, the owners and operators of the NO\textsubscript{X} Budget source and each NO\textsubscript{X} Budget unit at the source shall keep on site
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at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time prior to the end of 5 years, in writing by the permitting authority or the Administrator.

(i) The account certificate of representation under §97.13 for the NOx authorized account representative for the source and each NOx Budget unit at the source and all documents that demonstrate the truth of the statements in the account certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new account certificate of representation under §97.13 changing the NOx authorized account representative.

(ii) All emissions monitoring information, in accordance with subpart H of this part; provided that to the extent that subpart H of this part provides for a 3-year period for record-keeping, the 3-year period shall apply.

(iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the NOx Budget Trading Program.

(iv) Copies of all documents used to complete a NOx Budget permit application and any other submission under the NOx Budget Trading Program or to demonstrate compliance with the requirements of the NOx Budget Trading Program.

(2) The NOx authorized account representative of a NOx Budget source and each NOx Budget unit at the source shall submit the reports and compliance certifications required under the NOx Budget Trading Program, including those under subpart D, H, or I of this part.

(f) Liability. (1) Any person who knowingly violates any requirement or prohibition of the NOx Budget Trading Program, a NOx Budget permit, or an exemption under §97.4(b) or §97.5 shall be subject to enforcement pursuant to applicable State or Federal law.

(3) No permit revision shall excuse any violation of the requirements of the NOx Budget Trading Program that occurs prior to the date that the revision takes effect.

(4) Each NOx Budget source and each NOx Budget unit shall meet the requirements of the NOx Budget Trading Program.

(5) Any provision of the NOx Budget Trading Program that applies to a NOx Budget source or the NOx authorized account representative of a NOx Budget source shall also apply to the owners and operators of such source and of the NOx Budget units at the source.

(6) Any provision of the NOx Budget Trading Program that applies to a NOx Budget unit or the NOx authorized account representative of one NOx Budget unit shall not be liable for any violation by any other NOx Budget unit of which they are not owners or operators or the NOx authorized account representative and that is located at a source of which they are not owners or operators or the NOx authorized account representative.

(g) Effect on other authorities. No provision of the NOx Budget Trading Program, a NOx Budget permit application, a NOx Budget permit, or an exemption under §97.4(b) or §97.5 shall be construed as exempting or excluding the owners and operators and, to the extent applicable, the NOx authorized account representative of a NOx Budget source or NOx Budget unit from compliance with any other provision of the applicable, approved State implementation plan, a federally enforceable permit, or the Clean Air Act.

[65 FR 2727, Jan. 18, 2000, as amended at 67 FR 21529, Apr. 30, 2002]

§ 97.7 Computation of time.

(a) Unless otherwise stated, any time period scheduled, under the NOx Budget Trading Program, to begin on the occurrence of an act or event shall
§ 97.10 Authorization and responsibilities of NOX authorized account representative.

(a) Except as provided under §97.11, each NOX Budget source, including all NOX Budget units at the source, shall have one and only one NOX authorized account representative, with regard to all matters under the NOX Budget Trading Program concerning the source or any NOX Budget unit at the source.

(b) The NOX authorized account representative of the NOX Budget source shall be selected by an agreement binding on the owners and operators of the source and all NOX Budget units at the source.

(c) Upon receipt by the Administrator of a complete account certificate of representation under §97.13, the NOX authorized account representative of the source shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each owner and operator of the NOX Budget source represented and each NOX Budget unit at the source in all matters pertaining to the NOX Budget Trading Program, not withstanding any agreement between the NOX authorized account representative and such owners and operators. The owners and operators shall be bound by any decision or order issued to the NOX authorized account representative by the permitting authority, the Administrator, or a court regarding the source or unit.

(b) Unless otherwise stated, any time period scheduled, under the NOX Budget Trading Program, to begin before the occurrence of an act or event shall be computed so that the period ends the day before the act or event occurs.

(c) Unless otherwise stated, if the final day of any time period, under the NOX Budget Trading Program, falls on a weekend or a State or Federal holiday, the time period shall be extended to the next business day.

Subpart B—NOX Authorized Account Representative for NOX Budget Sources

§ 97.11 Alternate NOX authorized account representative.

(a) An account certificate of representation may designate one and only one alternate NOX authorized account representative who may act on behalf of the NOX authorized account representative. The agreement by which the alternate NOX authorized account representative is selected shall include a procedure for authorizing the

(d) No NOX Budget permit shall be issued, and no NOX Allowance Tracking System account shall be established for a NOX Budget unit at a source, until the Administrator has received a complete account certificate of representation under §97.13 for a NOX authorized account representative of the source and the NOX Budget units at the source.

(e) (1) Each submission under the NOX Budget Trading Program shall be submitted, signed, and certified by the NOX authorized account representative for each NOX Budget source on behalf of which the submission is made. Each such submission shall include the following certification statement by the NOX authorized account representative: "I am authorized to make this submission on behalf of the owners and operators of the NOX Budget sources or NOX Budget units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment."

(2) The permitting authority and the Administrator will accept or act on a submission made on behalf of owner or operators of the NOX Budget sources or NOX Budget units for which the submission is made only if the submission has been made, signed, and certified in accordance with paragraph (e)(1) of this section.
§ 97.12 Changing NOₓ authorized account representative and alternate NOₓ authorized account representative; changes in owners and operators.

(a) Changing NOₓ authorized account representative. The NOₓ authorized account representative may be changed at any time upon receipt by the Administrator of a superseding complete account certificate of representation under §97.13. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous NOₓ authorized account representative prior to the time and date when the Administrator receives the superseding account certificate of representation shall be binding on the new NOₓ authorized account representative.

(b) Changing alternate NOₓ authorized account representative. The alternate NOₓ authorized account representative may be changed at any time upon receipt by the Administrator of a superseding complete account certificate of representation under §97.13. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate NOₓ authorized account representative prior to the time and date when the Administrator receives the superseding account certificate of representation shall be binding on the new alternate NOₓ authorized account representative.

§ 97.13 Account certificate of representation.

(a) A complete account certificate of representation for a NOₓ authorized account representative or an alternate NOₓ authorized account representative shall include the following elements in a format prescribed by the Administrator:

(1) Identification of the NOₓ Budget source and each NOₓ Budget unit at the source for which the account certificate of representation is submitted.

(2) The name, address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the NOₓ authorized account representative and any alternate NOₓ authorized account representative.

(3) A list of the owners and operators of the NOₓ Budget source and of each NOₓ Budget unit at the source.

(4) The following certification statement by the NOₓ authorized account representative and any alternate NOₓ authorized account representative: "I
certify that I was selected as the NOX authorized account representative or alternate NOX authorized account representative, as applicable, by an agreement binding on the owners and operators of the NOX Budget source and each NOX Budget unit at the source. I certify that I have all the necessary authority to carry out my duties and responsibilities under the NOX Budget Trading Program on behalf of the owners and operators of the NOX Budget source and of each NOX Budget unit at the source and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions and by any decision or order issued to me by the permitting authority, the Administrator, or a court regarding the source or unit.”

(5) The signature of the NOX authorized account representative and any alternate NOX authorized account representative and the dates signed.

(b) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the account certificate of representation shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

§97.14 Objections concerning NOX authorized account representative.

(a) Once a complete account certificate of representation under §97.13 has been submitted and received, the permitting authority and the Administrator will rely on the account certificate of representation unless and until a superseding complete account certificate of representation under §97.13 is received by the Administrator.

(b) Except as provided in §97.12 (a) or (b), no objection or other communication submitted to the permitting authority or the Administrator concerning the authorization, or any representation, action, inaction, or submission of the NOX authorized account representative shall affect any representation, action, inaction, or submission of the NOX authorized account representative or the finality of any decision or order by the permitting authority or the Administrator under the NOX Budget Trading Program.

(c) Neither the permitting authority nor the Administrator will adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of any NOX authorized account representative, including private legal disputes concerning the proceeds of NOX allowance transfers.

Subpart C—Permits

§97.20 General NOX Budget Trading Program permit requirements.

(a) For each NOX Budget source required to have a federally enforceable permit, such permit shall include a NOX Budget permit administered by the permitting authority for the federally enforceable permit.

(1) For NOX Budget sources required to have a title V operating permit, the NOX Budget portion of the title V permit shall be administered in accordance with the permitting authority’s title V operating permits regulations promulgated under part 70 or 71 of this chapter, except as provided otherwise by this subpart or subpart I of this part.

(2) For NOX Budget sources required to have a non-title V permit, the NOX Budget portion of the non-title V permit shall be administered in accordance with the permitting authority’s regulations promulgated to administer non-title V permits, except as provided otherwise by this subpart or subpart I of this part.

(b) Each NOX Budget permit shall contain all applicable NOX Budget Trading Program requirements and shall be a complete and segregable portion of the permit under paragraph (a) of this section.

§97.21 Submission of NOX Budget permit applications.

(a) Duty to apply. The NOX authorized account representative of any NOX Budget source required to have a federally enforceable permit shall submit to the permitting authority a complete NOX Budget permit application under §97.22 by the applicable deadline in paragraph (b) of this section.
(b)(1) For NO\textsubscript{X} Budget sources required to have a title V operating permit:

(i) For any source, with one or more NO\textsubscript{X} Budget units under §97.4(a) that commence operation before January 1, 2001, the NO\textsubscript{X} authorized account representative shall submit a complete NO\textsubscript{X} Budget permit application under §97.22 covering such NO\textsubscript{X} Budget units to the permitting authority at least 18 months (or such lesser time provided by the permitting authority) before May 31, 2004.

(ii) For any source, with any NO\textsubscript{X} Budget unit under §97.4(a) that commences operation on or after January 1, 2001, the NO\textsubscript{X} authorized account representative shall submit a complete NO\textsubscript{X} Budget permit application under §97.22 covering such NO\textsubscript{X} Budget unit to the permitting authority at least 18 months (or such lesser time provided by the permitting authority) before the later of May 31, 2004 or the date on which the NO\textsubscript{X} Budget unit commences operation.

(2) For NO\textsubscript{X} Budget sources required to have a non-title V permit:

(i) For any source, with one or more NO\textsubscript{X} Budget units under §97.4(a) that commence operation on or after January 1, 2001, the NO\textsubscript{X} authorized account representative shall submit a complete NO\textsubscript{X} Budget permit application under §97.22 covering such NO\textsubscript{X} Budget units to the permitting authority at least 18 months (or such lesser time provided by the permitting authority) before May 31, 2004.

(ii) For any source, with any NO\textsubscript{X} Budget unit under §97.4(a) that commences operation on or after January 1, 2001, the NO\textsubscript{X} authorized account representative shall submit a complete NO\textsubscript{X} Budget permit application under §97.22 covering such NO\textsubscript{X} Budget unit to the permitting authority at least 18 months (or such lesser time provided by the permitting authority) before the later of May 31, 2004 or the date on which the NO\textsubscript{X} Budget unit commences operation.

(c) Duty to reapply. (1) For a NO\textsubscript{X} Budget source required to have a title V operating permit, the NO\textsubscript{X} authorized account representative shall submit a complete NO\textsubscript{X} Budget permit application under §97.22 for the NO\textsubscript{X} Budget source covering the NO\textsubscript{X} Budget units at the source in accordance with the permitting authority’s title V operating permits regulations addressing operating permit renewal.

(2) For a NO\textsubscript{X} Budget source required to have a non-title V permit, the NO\textsubscript{X} authorized account representative shall submit a complete NO\textsubscript{X} Budget permit application under §97.22 for the NO\textsubscript{X} Budget source covering the NO\textsubscript{X} Budget units at the source in accordance with the permitting authority’s non-title V permits regulations addressing permit renewal.

[65 FR 2727, Jan. 18, 2000, as amended at 67 FR 21529, Apr. 30, 2002]

§97.22 Information requirements for NO\textsubscript{X} Budget permit applications.

A complete NO\textsubscript{X} Budget permit application shall include the following elements concerning the NO\textsubscript{X} Budget source for which the application is submitted, in a format prescribed by the permitting authority:

(a) Identification of the NO\textsubscript{X} Budget source, including plant name and the ORIS (Office of Regulatory Information Systems) or facility code assigned to the source by the Energy Information Administration, if applicable;

(b) Identification of each NO\textsubscript{X} Budget unit at the NO\textsubscript{X} Budget source and whether it is a NO\textsubscript{X} Budget unit under §97.4(a) or under subpart I of this part;

(c) The standard requirements under §97.6; and

(d) For each NO\textsubscript{X} Budget opt-in unit at the NO\textsubscript{X} Budget source, the following certification statements by the NO\textsubscript{X} authorized account representative:

(1) “I certify that each unit for which this permit application is submitted under subpart I of this part is not a NO\textsubscript{X} Budget unit under 40 CFR 97.4(a) and is not covered by an exemption under 40 CFR 97.4(b) or 97.5 that is in effect.”

(2) If the application is for an initial NO\textsubscript{X} Budget opt-in permit, “I certify that each unit for which this permit application is submitted under subpart I of 40 CFR part 97 is operating, as that term is defined under 40 CFR 97.2.”
§ 97.23 NO\textsubscript{X} Budget permit contents.

(a) Each NO\textsubscript{X} Budget permit will contain, in a format prescribed by the permitting authority, all elements required for a complete NO\textsubscript{X} Budget permit application under §97.22.

(b) Each NO\textsubscript{X} Budget permit is deemed to incorporate automatically the definitions of terms under §97.2 and, upon recordation by the Administrator under subpart F or G of this part, every allocation, transfer, or deduction of a NO\textsubscript{X} allowance to or from the compliance accounts of the NO\textsubscript{X} Budget units covered by the permit or the overdraft account of the NO\textsubscript{X} Budget source covered by the permit.

§ 97.24 NO\textsubscript{X} Budget permit revisions.

(a) For a NO\textsubscript{X} Budget source with a title V operating permit, except as provided in §97.23(b), the permitting authority will revise the NO\textsubscript{X} Budget permit, as necessary, in accordance with the permitting authority's title V operating permits regulations addressing permit revisions.

(b) For a NO\textsubscript{X} Budget source with a non-title V permit, except as provided in §97.23(b), the permitting authority will revise the NO\textsubscript{X} Budget permit, as necessary, in accordance with the permitting authority's non-title V permits regulations addressing permit revisions.

Subpart D—Compliance Certification

§ 97.30 Compliance certification report.

(a) Applicability and deadline. For each control period in which one or more NO\textsubscript{X} Budget units at a source are subject to the NO\textsubscript{X} Budget emissions limitation, the NO\textsubscript{X} authorized account representative of the source shall submit to the permitting authority and the Administrator by November 30 of that year, a compliance certification report for each source covering all such units.

(b) Contents of report. The NO\textsubscript{X} authorized account representative shall include in the compliance certification report under paragraph (a) of this section the following elements, in a format prescribed by the Administrator, concerning each unit at the source and subject to the NO\textsubscript{X} Budget emissions limitation for the control period covered by the report:

1. Identification of each NO\textsubscript{X} Budget unit;
2. At the NO\textsubscript{X} authorized account representative's option, the serial numbers of the NO\textsubscript{X} allowances that are to be deducted from each unit's compliance account under §97.54 for the control period;
3. At the NO\textsubscript{X} authorized account representative's option, for units sharing a common stack and having NO\textsubscript{X} emissions that are not monitored separately or apportioned in accordance with subpart H of this part, the percentage of allowances that is to be deducted from each unit's compliance account under §97.54(e); and
4. The compliance certification under paragraph (c) of this section.

(c) Compliance certification. In the compliance certification report under paragraph (a) of this section, the NO\textsubscript{X} authorized account representative shall certify, based on reasonable inquiry of those persons with primary responsibility for operating the source and the NO\textsubscript{X} Budget units at the source in compliance with the NO\textsubscript{X} Budget Trading Program, whether each NO\textsubscript{X} Budget unit for which the compliance certification is submitted was operated during the calendar year covered by the report in compliance with the requirements of the NO\textsubscript{X} Budget Trading Program applicable to the unit, including:

1. Whether the unit was operated in compliance with the NO\textsubscript{X} Budget emissions limitation;
2. Whether the monitoring plan that governs the unit has been maintained to reflect the actual operation and monitoring of the unit and contains all information necessary to attribute NO\textsubscript{X} emissions to the unit, in accordance with subpart H of this part;
3. Whether all the NO\textsubscript{X} emissions from the unit, or a group of units (including the unit) using a common stack, were monitored or accounted for through the missing data procedures and reported in the quarterly monitoring reports, including whether conditional data were reported in the quarterly reports in accordance with
subsection H of this part. If conditional data were reported, the owner or operator shall indicate whether the status of all conditional data has been resolved and all necessary quarterly report resubmissions have been made;

(4) Whether the facts that form the basis for certification under subsection H of this part of each monitor at the unit or a group of units (including the unit) using a common stack, or for using an excepted monitoring method or alternative monitoring method approved under subsection H of this part, if any, have changed; and

(5) If a change is required to be reported under paragraph (c)(4) of this section, specify the nature of the change, the reason for the change, when the change occurred, and how the unit’s compliance status was determined subsequent to the change, including what method was used to determine emissions when a change mandated the need for monitor recertification.

§ 97.31 Administrator’s action on compliance certifications.

(a) The Administrator may review and conduct independent audits concerning any compliance certification or any other submission under the NOX Budget Trading Program and make appropriate adjustments of the information in the compliance certifications or other submissions.

(b) The Administrator may deduct NOX allowances from or transfer NOX allowances to a unit’s compliance account or a source’s overdraft account based on the information in the compliance certifications or other submissions, as adjusted under paragraph (a) of this section.

Subpart E—NOX Allowance Allocations

§ 97.40 Trading program budget.

In accordance with §§97.41 and 97.42, the Administrator will allocate to the NOX Budget units under §97.4(a) in a State, for each control period specified in §97.41, a total number of NOX allowances equal to the trading budget for the State, as set forth in appendix C of this part, less the sum of the NOX emission limitations (in tons) for each unit exempt under §97.4(b) that is not allocated any NOX allowances under §97.42 (b) or (c) for the control period and whose NOX emission limitation (in tons of NOX) is not included in the amount calculated under §97.42(d)(5)(ii)(B) for the control period.

[65 FR 2727, Jan. 18, 2000, as amended at 69 FR 21646, Apr. 21, 2004]

§ 97.41 Timing requirements for NOX allowance allocations.

(a) The NOX allowance allocations, determined in accordance with §§97.42(a) through (c), for the control periods in 2004 through 2007 are set forth in appendices A and B of this part.

(b) By April 1, 2005, the Administrator will determine by order the NOX allowance allocations, in accordance with §§97.42 (a) through (c), for the control periods in 2008 through 2012.

(c) By April 1, 2010, and thereafter by April 1 of the year that is 5 years after the last year for which NOX allowances allocations are determined, the Administrator will determine by order the NOX allowance allocations, in accordance with §§97.42(a) through (c), for the control periods in the years that are 3, 4, 5, 6, and 7 years after the applicable deadline under this paragraph (c).

(d) By April 1, 2010 and April 1 of each year thereafter, the Administrator will determine by order the NOX allowance allocations, in accordance with §97.42(d), for the control period in the year of the applicable deadline under this paragraph (d).

(e) The Administrator will make available to the public each determination of NOX allowance allocations under paragraph (b), (c), or (d) of this section and will provide an opportunity for submission of objections to the determination. Objections shall be limited to addressing whether the determination is in accordance with §97.42. Based on any such objections, the Administrator will adjust each determination to the extent necessary to ensure that it is in accordance with §97.42.

[65 FR 2727, Jan. 18, 2000, as amended at 67 FR 21529, Apr. 30, 2002]
§ 97.42 NO\textsubscript{X} allowance allocations.

(a)(1) The heat input (in mmBtu) used for calculating NO\textsubscript{X} allowance allocations for each NO\textsubscript{X} Budget unit under §97.4(a) will be:

(i) For a NO\textsubscript{X} allowance allocation under §97.41(a):

(A) For a unit under §97.4(a)(1), the average of the two highest amounts of the unit’s heat input for the control periods in 1995 through 1998; or

(B) For a unit under §97.4(a)(2), the control period in 1995 or, if the Administrator determines that reasonably reliable data are available for control periods in 1996 through 1998, the average of the two highest amounts of the unit’s heat input for the control periods in 1995 through 1998.

(ii) For a NO\textsubscript{X} allowance allocation under §97.41(b), the unit’s average heat input for the control periods in 2002 through 2004.

(iii) For a NO\textsubscript{X} allowance allocation under §97.41(c), the unit’s average heat input for the control period in the years that are 4, 5, 6, 7, and 8 years before the first year for which the allocation is being calculated.

(2) The unit’s heat input for the control period in each year specified under paragraph (a)(1) of this section will be determined in accordance with part 75 of this chapter. Notwithstanding the first sentence of this paragraph (a)(2):

(i) For a NO\textsubscript{X} allowance allocation under §97.41(a), such heat input will be determined using the best available data reported to the Administrator for the unit if the unit was not otherwise subject to the requirements of part 75 of this chapter for the control period.

(ii) For a NO\textsubscript{X} allowance allocation under §97.41(b) or (c) for a unit exempt under §97.4(b), such heat input shall be treated as zero if the unit is exempt under §97.4(b) during the control period.

(b) For each group of control periods specified in §97.41(a) through (c), the Administrator will allocate to all NO\textsubscript{X} Budget units in a given State under §97.4(a)(1) that commenced operation before May 1, 1997 for allocations under §97.41(a), May 1, 2003 for allocations under §97.41(b), and May 1 of the year 5 years before the first year for which the allocation under §97.41(c) is being calculated, a total number of NO\textsubscript{X} allowances equal to 95 percent of the portion of the State’s trading program budget under §97.40 covering such units. The Administrator will allocate in accordance with the following procedures:

(1) The Administrator will allocate NO\textsubscript{X} allowances to each NO\textsubscript{X} Budget unit under §97.4(a)(1) for each control period in an amount equaling 0.15 lb/mmBtu multiplied by the heat input determined under paragraph (a) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole number of NO\textsubscript{X} allowances as appropriate.

(2) If the initial total number of NO\textsubscript{X} allowances allocated to all NO\textsubscript{X} Budget units under §97.4(a)(1) in the State for a control period under paragraph (b)(1) of this section does not equal 95 percent of the portion of the State’s trading program budget under §97.40 covering such units, the Administrator will adjust the total number of NO\textsubscript{X} allowances allocated to all such NO\textsubscript{X} Budget units for the control period under paragraph (b)(1) of this section so that the total number of NO\textsubscript{X} allowances allocated equals 95 percent of such portion of the State’s trading program budget. This adjustment will be made by: multiplying each unit’s allocation by 95 percent of such portion of the State’s trading program budget; dividing by the total number of NO\textsubscript{X} allowances allocated under paragraph (b)(1) of this section for the control period; and rounding to the nearest whole number of NO\textsubscript{X} allowances as appropriate.

(c) For each group of control periods specified in §97.41(a) through (c), the Administrator will allocate to all NO\textsubscript{X} Budget units in a given State under §97.4(a)(2) that commenced operation before May 1, 1997 for allocations under §97.41(a), May 1, 2003 for allocations under §97.41(b), and May 1 of the year 5 years before the first year for which the allocation under §97.41(c) is being calculated, a total number of NO\textsubscript{X} allowances equal to 95 percent of the portion of the State’s trading program budget under §97.40 covering such units. The Administrator will allocate in accordance with the following procedures:

(1) The Administrator will allocate NO\textsubscript{X} allowances to each NO\textsubscript{X} Budget
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The NOₓ authorized account representative of a NOₓ Budget unit specified in this paragraph (d) may submit to the Administrator a request, in a format specified by the Administrator, to be allocated NOₓ allowances for the control period. The NOₓ allowance allocation request must be received by the Administrator on or after the date on which the State permitting authority issues a permit to construct the unit and by January 1 before the control period for which NOₓ allowances are requested.

(3) In a NOₓ allowance allocation request under paragraph (d)(2) of this section, the NOₓ authorized account representative for a NOₓ Budget unit under §97.4(a)(1) may request for the control period NOₓ allowances in an amount that does not exceed the lesser of:

(i) 0.15 lb/mmBtu multiplied by the unit’s maximum design heat input, multiplied by the lesser of 3,672 hours or the number of hours remaining in the control period starting with the day in the control period on which the unit commences operation or is projected to commence operation, divided by 2,000 lb/ton, and rounded to the nearest whole number of NOₓ allowances as appropriate; or

(ii) The unit’s most stringent State or Federal NOₓ emission limitation multiplied by the unit’s maximum design heat input, multiplied by the lesser of 3,672 hours or the number of hours remaining in the control period starting with the day in the control period on which the unit commences operation or is projected to commence operation, divided by 2,000 lb/ton, and rounded to the nearest whole number of NOₓ allowances as appropriate; or

(4) In a NOₓ allowance allocation request under paragraph (d)(2) of this section, the NOₓ authorized account representative for a NOₓ Budget unit under §97.4(a)(2) may request for the control period NOₓ allowances in an amount that does not exceed the lesser of:

(i) 0.17 lb/mmBtu multiplied by the unit’s maximum design heat input, multiplied by the lesser of 3,672 hours or the number of hours remaining in the control period starting with the day in the control period on which the

unit under §97.4(a)(2) for each control period in an amount equaling 0.17 lb/mmBtu multiplied by the heat input determined under paragraph (a) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole number of NOₓ allowances as appropriate.

(2) If the initial total number of NOₓ allowances allocated to all NOₓ Budget units under §97.4(a)(2) in the State for a control period under paragraph (c)(1) of this section does not equal 95 percent of the portion of the State’s trading program budget under §97.40 covering such units, the Administrator will adjust the total number of NOₓ allowances allocated to all such NOₓ Budget units for the control period under paragraph (a)(1) of this section so that the total number of NOₓ allowances allocated equals 95 percent of the portion of the State’s trading program budget under §97.40 covering such units. This adjustment will be made by: multiplying each unit’s allocation by 95 percent of the portion of the State’s trading program budget under §97.40 covering such units; dividing by the total number of NOₓ allowances allocated under paragraph (c)(1) of this section for the control period; and rounding to the nearest whole number of NOₓ allowances as appropriate.

(d) For each control period specified in §97.41(d), the Administrator will allocate NOₓ allowances to NOₓ Budget units in a given State under §97.4(a) (except for units exempt under §97.4(b)) that commence operation, or are projected to commence operation, on or after: May 1, 1997 (for control periods under §97.41(a)); May 1, 2003, (for control periods under §97.41(b)); and May 1 of the year 5 years before the beginning of the group of 5 years that includes the control period (for control periods under §97.41(c)). The Administrator will make the allocations under this paragraph (d) in accordance with the following procedures:

(1) The Administrator will establish one allocation set-aside for each control period. Each allocation set-aside will be allocated NOₓ allowances equal to 5 percent of the tons of NOₓ emission in the State’s trading program budget under §97.40, rounded to the nearest whole number of NOₓ allowances as appropriate.
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unit commences operation or is projected to commence operation, divided by 2,000 lb/ton, and rounded to the nearest whole number of NO\textsubscript{X} allowances as appropriate; or

(ii) The unit’s most stringent State or Federal NO\textsubscript{X} emission limitation multiplied by the unit’s maximum design heat input, multiplied by the lesser of 3,672 hours or the number of hours remaining in the control period starting with the day in the control period on which the unit commences operation or is projected to commence operation, divided by 2,000 lb/ton, and rounded to the nearest whole number of NO\textsubscript{X} allowances as appropriate.

(5) The Administrator will review each NO\textsubscript{X} allowance allocation request submitted in accordance with paragraph (d)(2) of this section and will allocate NO\textsubscript{X} allowances pursuant to such request as follows:

(i) Upon receipt of the NO\textsubscript{X} allowance allocation request, the Administrator will make any necessary adjustments to the request to ensure that the requirements of paragraphs (d) introductory text, (d)(2), (d)(3), and (d)(4) are met.

(ii) The Administrator will determine the following amounts:

(A) The sum of the NO\textsubscript{X} allowances requested (as adjusted under paragraph (d)(5)(i) of this section) in all NO\textsubscript{X} allowance allocation requests under paragraph (d)(2) of this section for the control period; and

(B) For units exempt under § 97.4(b) in the State that commenced operation, or are projected to commence operation, on or after May 1, 1997 (for control periods under § 97.41(a)); May 1, 2003, (for control periods under § 97.41(b)); and May 1 of the year 5 years before beginning of the group of 5 years that includes the control period (for control periods under § 97.41(c)), the sum of the NO\textsubscript{X} emission limitations (in tons of NO\textsubscript{X}) on which each unit’s exemption under § 97.4(b) is based.

(iii) If the number of NO\textsubscript{X} allowances in the allocation set-aside for the control period less the amount under paragraph (d)(5)(i)(B) of this section is not less than the amount determined under paragraph (d)(5)(i)(A) of this section, the Administrator will allocate the amount of the NO\textsubscript{X} allowances requested (as adjusted under paragraph (d)(5)(i) of this section) to the NO\textsubscript{X} Budget unit for which the allocation request was submitted.

(iv) If the number of NO\textsubscript{X} allowances in the allocation set-aside for the control period less the amount under paragraph (d)(5)(i)(B) of this section is less than the amount determined under paragraph (d)(5)(i)(A) of this section, the Administrator will allocate, to the NO\textsubscript{X} Budget unit for which the allocation request was submitted, the amount of NO\textsubscript{X} allowances requested (as adjusted under paragraph (d)(5)(i) of this section) multiplied by the number of NO\textsubscript{X} allowances in the allocation set-aside for the control period less the amount determined under paragraph (d)(5)(i)(A) of this section, and rounded to the nearest whole number of NO\textsubscript{X} allowances as appropriate.

(e)(1) For a NO\textsubscript{X} Budget unit that is allocated NO\textsubscript{X} allowances under paragraph (d) of this section for a control period, the Administrator will deduct NO\textsubscript{X} allowances under § 97.54(b), (e), or (f) to account for the actual heat input of the unit during the control period. The Administrator will calculate the number of NO\textsubscript{X} allowances to be deducted to account for the unit’s actual heat input using the following formulas and rounding to the nearest whole number of NO\textsubscript{X} allowance as appropriate, provided that the number of NO\textsubscript{X} allowances to be deducted shall be zero if the number calculated is less than zero:

\[
\text{NO}_\text{X} \text{ allowances deducted for actual heat input for a unit} = \text{Unit’s NO}_\text{X} \text{ allowances allocated for control period} - (\text{Unit’s actual control period heat input} \times \text{the lesser of 0.15 lb/mmBtu the unit’s most stringent State or Federal emission limitation} \times 2,000 \text{ lb/ton})
\]

Where:

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit’s NO\textsubscript{X} allowances allocated for control period</td>
<td>(Unit’s actual control period heat input \times the lesser of 0.15 lb/mmBtu the unit’s most stringent State or Federal emission limitation \times 2,000 lb/ton)</td>
</tr>
<tr>
<td>Unit’s actual control period heat input</td>
<td>The heat input during the control period</td>
</tr>
<tr>
<td>Unit’s most stringent State or Federal emission limitation</td>
<td>The lesser of the most stringent State or Federal emission limitation</td>
</tr>
</tbody>
</table>
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“Unit’s NOx allowances allocated for control period” is the number of NOx allowances allocated to the unit for the control period under paragraph (d) of this section; and

“Unit’s actual control period heat input” is the heat input (in mmBtu) of the unit during the control period.

(2) The Administrator will transfer any NOx allowances deducted under paragraph (e)(1) of this section to the allocation set-aside for the control period for which they were allocated.

(f) After making the deductions for compliance under §97.54(b), (e), or (f) for a control period, the Administrator will determine whether any NOx allowances remain in the allocation set-aside for the control period. The Administrator will allocate any such NOx allowances to the NOx Budget units in the State using the following formula and rounding to the nearest whole number of NOx allowances as appropriate:

Unit’s share of NOx allowances remaining in allocation set-aside = Total NOx allowances remaining in allocation set-aside × (Unit’s NOx allowance allocation - State’s trading program budget excluding allocation set-aside)

Where:

“Total NOx allowances remaining in allocation set-aside” is the total number of NOx allowances remaining in the allocation set-aside for the control period;

“Unit’s NOx allowance allocation” is the number of NOx allowances allocated under paragraph (b) or (c) of this section to the unit for the control period to which the allocation set-aside applies; and

“State’s trading program budget excluding allocation set-aside” is the State’s trading program budget under §97.40 for the control period to which the allocation set-aside applies multiplied by 95 percent, rounded to the nearest whole number of NOx allowances as appropriate.

(g) If the Administrator determines that NOx allowances were allocated under paragraph (b), (c), or (d) of this section for a control period and the recipient of the allocation is not actually a NOx Budget unit under §97.4(a), the Administrator will notify the NOx authorized account representative and then will act in accordance with the following procedures:

(1)(i) The Administrator will not record such NOx allowances for the control period in an account under §97.53;

(ii) If the Administrator already recorded such NOx allowances for the control period in an account under §97.53 and if the Administrator makes such determination before making all deductions pursuant to §97.54 (except deductions pursuant to §97.54(d)(2)) for the control period, then the Administrator will deduct from the account NOx allowances equal in number to and allocated for the same or a prior control period as the NOx allowances allocated to such recipient for the control period. The NOx authorized account representative shall ensure that the account contains the NOx allowances necessary for completion of such deduction. If account does not contain the necessary NOx allowances, the Administrator will deduct the required number of NOx allowances, regardless of the control period for which they were allocated, whenever NOx allowances are recorded in the account; or

(iii) If the Administrator already recorded such NOx allowances for the control period in an account under §97.53 and if the Administrator makes such determination after making all deductions pursuant to §97.54 (except deductions pursuant to §97.54(d)(2)) for the control period, then the Administrator will apply paragraph (g)(1)(ii) of this section to any subsequent control period for which NOx allowances were allocated to such recipient.

(2) The Administrator will transfer the NOx allowances that are not recorded, or that are deducted, pursuant to paragraph (g)(1) of this section to an allocation set-aside for the State in which such source is located.

[65 FR 2727, Jan. 18, 2000, as amended at 67 FR 21529, Apr. 30, 2002; 69 FR 21646, Apr. 21, 2004]

§ 97.43 Compliance Supplement Pool.

(a) For any NOx Budget unit that reduces its NOx emission rate in the 2001 through 2003 control period, the owners and operators may request early reduction credits in accordance with the following requirements:

(1) Each NOx Budget unit for which the owners and operators intend to request, or request, any early reduction credits in accordance with paragraph
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(a)(4) of this section shall monitor and report NO\textsubscript{X} emissions in accordance with subpart H of this part starting in the 2000 control period and for each control period for which such early reduction credits are requested. The unit’s percent monitor data availability shall not be less than 90 percent during the 2000 control period, and the unit must be in full compliance with any applicable State or Federal NO\textsubscript{X} emission control requirements during 2000 through 2002.

(2) NO\textsubscript{X} emission rate and heat input under paragraphs (a)(3) and (4) of this section shall be determined in accordance with subpart H of this part.

(3) Each NO\textsubscript{X} Budget unit for which the owners and operators intend to request, or request, any early reduction credits under paragraph (a)(4) of this section shall reduce its NO\textsubscript{X} emission rate, for each control period for which early reduction credits are requested, to less than both 0.25 lb/mmBtu and 80 percent of the unit’s NO\textsubscript{X} emission rate in the 2000 control period.

(4) The NO\textsubscript{X} authorized account representative of a NO\textsubscript{X} Budget unit that meets the requirements of paragraphs (a)(1) and (3) of this section may submit to the Administrator a request for early reduction credits in accordance with part 75 (except for subpart H) of this chapter and the Guidance for Implementation of Emission Monitoring Requirements for the NO\textsubscript{X} Budget Program (January 28, 1997).

(b) For any NO\textsubscript{X} Budget unit that is subject to the Ozone Transport Commission NO\textsubscript{X} Budget Program under title I of the Clean Air Act, the owners and operators may request early reduction credits in accordance with the following requirements:

(1) The NO\textsubscript{X} authorized account representative of the unit may submit to the Administrator a request for early reduction credits in an amount equal to the amount of banked allowances under the Ozone Transport Commission NO\textsubscript{X} Budget Program that were allocated for the control period in 2001 through 2003 and are held by the unit, in accordance with the Ozone Transport Commission NO\textsubscript{X} Budget Program, as of the date of submission of the request. During the entire control period in 2001 through 2003 for which the allowances were allocated, the unit must have monitored and reported NO\textsubscript{X} emissions in accordance with part 75 (except for subpart H) of this chapter and the Guidance for Implementation of Emission Monitoring Requirements for the NO\textsubscript{X} Budget Program (January 28, 1997).

(2) The early reduction credit request under paragraph (b)(1) must be submitted, in a format specified by the Administrator, by February 1, 2004.

(3) The NO\textsubscript{X} authorized account representative of the unit shall not submit a request for early reduction credits under paragraph (b)(1) of this section for banked allowances under the Ozone Transport Commission NO\textsubscript{X} Budget Program that were allocated for any control period during which the unit made NO\textsubscript{X} emission reductions for which he or she submits a request for early reduction credits under paragraph (a) of this section for the unit.

(c) The Administrator will review each early reduction credit request submitted in accordance with paragraph (a) or (b) of this section and will allocate NO\textsubscript{X} allowances to NO\textsubscript{X} Budget units in a given State and covered by such request as follows:

(1) Upon receipt of each early reduction credit request, the Administrator will make available to the public a statement of the total number of early reduction credits requested meets the requirements of paragraph (a) or (b) of this section.

(2) After February 1, 2004, the Administrator will make available to the public a statement of the total number of early reduction credits requested by NO\textsubscript{X} Budget units in the State.

(3) If the State’s compliance supplement pool set forth in appendix D of this part has a number of NO\textsubscript{X} allowances not less than the amount of early...
reduction credits in all early reduction credit requests under paragraph (a) or (b) of this section for 2001 through 2003 (as adjusted under paragraph (c)(1) of this section) submitted by February 1, 2004, the Administrator will allocate to each NO\textsubscript{X} Budget unit covered by such requests one allowance for each early reduction credit requested (as adjusted under paragraph (c)(1) of this section).

(4) If the State’s compliance supplement pool set forth in appendix D of this part has a smaller number of NO\textsubscript{X} allowances than the amount of early reduction credits in all early reduction credit requests under paragraph (a) or (b) of this section for 2001 through 2003 (as adjusted under paragraph (c)(1) of this section) submitted by February 1, 2004, the Administrator will allocate NO\textsubscript{X} allowances to each NO\textsubscript{X} Budget unit covered by such requests according to the following formula and rounding to the nearest whole number of NO\textsubscript{X} allowances as appropriate:

\[
\text{Unit’s allocation for early reduction credits} = \frac{\text{Unit’s adjusted early reduction credits} \times (\text{State’s compliance supplement pool})}{\text{Total adjusted early reduction credits for all units}}
\]

Where:

“Unit’s allocation for early reduction credits” is the number of NO\textsubscript{X} allowances allocated to the unit for early reduction credits.

“Unit’s adjusted early reduction credits” is the amount of early reduction credits requested for the unit for 2001 and 2002 in early reduction credit requests under paragraph (a) or (b) of this section, as adjusted under paragraph (c)(1) of this section.

“State’s compliance supplement pool” is the number of NO\textsubscript{X} allowances in the State’s compliance supplement pool set forth in appendix D of this part.

“Total adjusted early reduction credits for all units” is the amount of early reduction credits requested for all units for 2001 and 2002 in early reduction credit requests under paragraph (a) or (b) of this section, as adjusted under paragraph (c)(1) of this section.

(5) By April 1, 2004, the Administrator will determine by order the allocations under paragraph (c)(3) or (4) of this section. The Administrator will make available to the public each determination of NO\textsubscript{X} allowance allocations and will provide an opportunity for submission of objections to the determination. Objections shall be limited to addressing whether the determination is in accordance with paragraph (c)(1), (3), or (4) of this section. Based on any such objections, the Administrator will adjust each determination to the extent necessary to ensure that it is in accordance with paragraph (c)(1), (3), or (4) of this section.

(6) By May 1, 2004, the Administrator will record the allocations under paragraph (c)(3) or (4) of this section.

(7) NO\textsubscript{X} allowances recorded under paragraph (c)(6) of this section may be deducted for compliance under §97.54 for the control period in 2004 or 2005. Notwithstanding §97.55(a), the Administrator will deduct as retired any NO\textsubscript{X} allowance that is recorded under paragraph (c)(6) of this section and that is not deducted for compliance under §97.54 for the control period in 2004 or 2005.

[65 FR 2727, Jan. 18, 2000, as amended at 67 FR 21529, Apr. 30, 2002; 69 FR 21646, Apr. 21, 2004]

Subpart F—NO\textsubscript{X} Allowance Tracking System

§ 97.50 NO\textsubscript{X} Allowance Tracking System accounts.

(a) Nature and function of compliance accounts and overdraft accounts. Consistent with §97.51(a), the Administrator will establish one compliance account for each NO\textsubscript{X} Budget unit and one overdraft account for each source with two or more NO\textsubscript{X} Budget units.

(b) Nature and function of general accounts. Consistent with §97.51(b), the Administrator will establish, upon request, a general account for any person. Allocations of NO\textsubscript{X} allowances pursuant to §97.4(b)(4)(ii) or §97.5(c)(2) and transfers of allowances pursuant to §97.4(b)(4)(ii) or §97.5(c)(2) and transfers of allowances pursuant to §97.31, §96.54, §96.56, subpart G of this part, or subpart I of this part will be recorded in compliance accounts or overdraft accounts in accordance with this subpart.
§ 97.51 Establishment of accounts.

(a) Compliance accounts and overdraft accounts. Upon receipt of a complete account certificate of representation under § 97.13, the Administrator will establish:

1. A compliance account for each NOx Budget unit for which the account certificate of representation was submitted; and

2. An overdraft account for each source for which the account certificate of representation was submitted and that has two or more NOx Budget units.

(b) General accounts—(1) Application for general account. (i) Any person may apply to open a general account for the purpose of holding and transferring allowances. An application for a general account may designate one and only one NOx authorized account representative and one and only one alternate NOx authorized account representative who may act on behalf of the NOx authorized account representative. The agreement by which the alternate NOx authorized account representative is selected shall include a procedure for authorizing the alternate NOx authorized account representative to act in lieu of the NOx authorized account representative. A complete application for a general account shall be submitted to the Administrator and shall include the following elements in a format prescribed by the Administrator:

(A) Name, mailing address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the NOx authorized account representative and any alternate NOx authorized account representative;

(B) At the option of the NOx authorized account representative, organization name and type of organization;

(C) A list of all persons subject to a binding agreement for the NOx authorized account representative and any alternate NOx authorized account representative and any alternate NOx authorized account representative to represent their ownership interest with respect to the allowances held in the general account;

(D) The following certification statement by the NOx authorized account representative and any alternate NOx authorized account representative: ‘‘I certify that I was selected as the NOx authorized account representative or the NOx alternate authorized account representative, as applicable, by an agreement that is binding on all persons who have an ownership interest with respect to NOx allowances held in the general account. I certify that I have all the necessary authority to carry out my duties and responsibilities under the NOx Budget Trading Program on behalf of such persons and that each such person shall be fully bound by my representations, actions, inactions, or submissions and by any order or decision issued to me by the Administrator or a court regarding the general account.’’

(E) The signature of the NOx authorized account representative and any alternate NOx authorized account representative and the dates signed.

(ii) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the application for a general account shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

(2) Authorization of NOx authorized account representative. Upon receipt by the Administrator of a complete application for a general account under paragraph (b)(1) of this section:

(i) The Administrator will establish a general account for the person or persons for whom the application is submitted.

(ii) The NOx authorized account representative and any alternate NOx authorized account representative for the general account shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each person who has an ownership interest with respect to NOx allowances held in the general account in all matters pertaining to the NOx Budget Trading Program, not withstanding any agreement between the NOx authorized account representative or any alternate NOx authorized account representative and such person. Any such person shall be bound by any order or decision issued to the NOx authorized account representative or any alternate NOx authorized account representative for the general account.
account representative or any alternate NOx authorized account representative by the Administrator or a court regarding the general account.

(iii) Any representation, action, inaction, or submission by any alternate NOX authorized account representative shall be deemed to be a representation, action, inaction, or submission by the NOX authorized account representative.

(iv) Each submission concerning the general account shall be submitted, signed, and certified by the NOX authorized account representative or any alternate NOX authorized account representative for the persons having an ownership interest with respect to NOX allowances held in the general account. Each such submission shall include the following certification statement by the NOX authorized account representative or any alternate NOX authorizing account representative: "I am authorized to make this submission on behalf of the persons having an ownership interest with respect to the NOX allowances held in the general account. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment."

(v) The Administrator will accept or act on a submission concerning the general account only if the submission has been made, signed, and certified in accordance with paragraph (b)(2)(iv) of this section.

(3) Changing NOX authorized account representative and alternate NOX authorized account representative; changes in persons with ownership interest. (i) The NOX authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous NOX authorized account representative prior to the time and date when the Administrator receives the superseding application for a general account shall be binding on the new NOX authorized account representative and the persons with an ownership interest with respect to the NOX allowances in the general account.

(ii) The alternate NOX authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate NOX authorized account representative prior to the time and date when the Administrator receives the superseding application for a general account shall be binding on the new alternate NOX authorized account representative and the persons with an ownership interest with respect to the NOX allowances in the general account.

(iii)(A) In the event a new person having an ownership interest with respect to NOX allowances in the general account is not included in the list of such persons in the account certificate of representation, such new person shall be deemed to be subject to and bound by the account certificate of representation, the representation, actions, inactions, and submissions of the NOX authorized account representative and any alternate NOX authorized account representative of the source or unit, and the decisions, orders, actions, and inactions of the Administrator, as if the new person were included in such list.

(B) Within 30 days following any change in the persons having an ownership interest with respect to NOX allowances in the general account, including the addition of persons, the NOX authorized account representative or any alternate NOX authorized account representative shall submit a revision to the application for a general account amending the list of persons
§ 97.52 NOx Allowance Tracking System responsibilities of NOx authorized account representative.

(a) Following the establishment of a NOX Allowance Tracking System account, all submissions to the Administrator pertaining to the account, including, but not limited to, submissions concerning the deduction or transfer of NOX allowances in the account, shall be made only by the NOX authorized account representative for the account.

(b) Authorized account representative identification. The Administrator will assign a unique identifying number to each NOX authorized account representative.

§ 97.53 Recordation of NOX allowance allocations.

(a) The Administrator will record the NOX allowances for 2002 for a NOx Budget unit allocated under subpart E of this part in the unit’s compliance account, except for NOx allowances under §97.4(b)(4)(ii) or §97.5(c)(2), which will be recorded in the general account specified by the owners and operators of the unit. The Administrator will record NOX allowances for 2003 for a NOx Budget opt-in unit in the unit’s compliance account as allocated under §97.88(a).

(b) By May 1, 2003, the Administrator will record the NOX allowances for 2005 for a NOx Budget unit allocated under subpart E of this part in the unit’s compliance account, except for NOX allowances under §97.4(b)(4)(ii) or §97.5(c)(2), which will be recorded in the general account specified by the owners and operators of the unit. The Administrator will record NOX allowances for 2004 for a NOx Budget opt-in unit in the unit’s compliance account as allocated under §97.88(a).

(c) By May 1, 2003, the Administrator will record the NOX allowances for 2006 for a NOx Budget unit allocated under subpart E of this part in the unit’s compliance account, except for NOX allowances under §97.4(b)(4)(ii) or §97.5(c)(2), which will be recorded in the general account specified by the owners and operators of the unit. The Administrator will record NOX allowances for 2005 for a NOx Budget opt-in unit in the unit’s compliance account as allocated under §97.88(a).

(d) By May 1, 2004, the Administrator will record the NOX allowances for 2007 for a NOx Budget unit allocated under subpart E of this part in the unit’s compliance account, except for NOX allowances under §97.4(b)(4)(ii) or §97.5(c)(2), which will be recorded in the general account specified by the owners and operators of the unit. The
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(a) NOx allowance transfer deadline. The NOx allowances are available to be deducted for compliance with a unit’s NOx Budget emissions limitation for a control period in a given year only if the NOx allowances:

(1) Were allocated for a control period in a prior year or the same year; and

(2) Are held in the unit’s compliance account, or the overdraft account of the source where the unit is located, as of the NOx allowance transfer deadline for that control period or are transferred into the compliance account or overdraft account by a NOx allowance transfer correctly submitted for recordation under §97.60 by the NOx allowance transfer deadline for that control period.

(b) Deductions for compliance. (1) Following the recordation, in accordance with §97.61, of NOx allowance transfers submitted for recordation in the unit’s compliance account or the overdraft account of the source where the unit is located by the NOx allowance transfer deadline for a control period, the Administrator will deduct NOx allowances available under paragraph (a) of this section to cover the unit’s NOx emissions (as determined in accordance with subpart H of this part), or to account for actual heat input under §97.42(e), for the control period:

(i) From the compliance account; and

(ii) Only if no more NOx allowances available under paragraph (a) of this section remain in the compliance account, from the overdraft account. In deducting allowances for units at the source from the overdraft account, the Administrator will begin with the unit having the compliance account with the lowest account number and end with the unit having the compliance account with the highest account number (with account numbers sorted beginning with the left-most character and ending with the right-most character and the letter characters assigned values in alphabetical order and less than all numeric characters).

(2) The Administrator will deduct NOx allowances first under paragraph (b)(1)(i) of this section and then under paragraph (b)(1)(ii) of this section:

(i) Until the number of NOx allowances deducted for the control period equals the number of tons of NOx emissions, determined in accordance with subpart H of this part, from the unit for the control period for which compliance is being determined, plus the number of NOx allowances required for deduction to account for actual heat input under §97.42(e) for the control period; or

(ii) Until no more NOx allowances available under paragraph (a) of this section remain in the respective account.

(c)(1) Identification of NOx allowances by serial number. The NOx authorized account representative for each compliance account may identify by serial number the NOx allowances to be deducted from the unit’s compliance account under paragraph (b), (d), (e), or
(f) of this section. Such identification shall be made in the compliance certification report submitted in accordance with §97.30.

(2) First-in, first-out. The Administrator will deduct NOX allowances for a control period from the compliance account, in the absence of an identification or in the case of a partial identification of NOX allowances by serial number under paragraph (c)(1) of this section, or the overdraft account on a first-in, first-out (FIFO) accounting basis in the following order:

(i) Those NOX allowances that were allocated for the control period to the unit under subpart E or I of this part;

(ii) Those NOX allowances that were allocated for the control period to any unit and transferred and recorded in the account pursuant to subpart G of this part, in order of their date of recordation;

(iii) Those NOX allowances that were allocated for a prior control period to the unit under subpart E or I of this part, in order of their date of recordation;

(iv) Those NOX allowances that were allocated for a prior control period to any unit and transferred and recorded in the account pursuant to subpart G of this part, in order of their date of recordation.

(d) Deductions for excess emissions. (1) After making the deductions for compliance under paragraph (b) of this section, the Administrator will deduct from the unit’s compliance account or the overdraft account of the source where the unit is located a number of NOX allowances equal to three times the number of excess emissions determined in accordance with §97.42(e) for the unit for the control period in which the unit has excess emissions, equal to three times the number of the unit’s excess emissions.

(2) If the compliance account or overdraft account does not contain sufficient NOX allowances, the Administrator will deduct the required number of NOX allowances, regardless of the control period for which they were allocated, whenever NOX allowances are recorded in either account.

(3) Any allowance deduction required under paragraph (d) of this section shall not affect the liability of the owners and operators of the NOX Budget unit for any fine, penalty, or assessment, or their obligation to comply with any other remedy, for the same violation, as ordered under the Clean Air Act or applicable State law. The following guidelines will be followed in assessing fines, penalties or other obligations:

(i) For purposes of determining the number of days the violation, if a NOX Budget unit has excess emissions for a control period, each day in the control period (153 days) constitutes a day in violation unless the owners and operators of the unit demonstrate that a lesser number of days should be considered.

(ii) Each ton of excess emissions is a separate violation.

(e) Deductions for units sharing a common stack. In the case of units sharing a common stack and having emissions that are not separately monitored or apportioned in accordance with subpart H of this part:

(1) The NOX authorized account representative of the units may identify the percentage of NOX allowances to be deducted from each such unit’s compliance account to cover the unit’s share of NOX emissions from the common stack for a control period. Such identification shall be made in the compliance certification report submitted in accordance with §97.30.

(2) Notwithstanding paragraph (b)(2)(i) of this section, the Administrator will deduct NOX allowances for each such unit until the number of NOX allowances deducted equals the unit’s identified percentage under paragraph (e)(1) of this section or, if no percentage is identified, an equal percentage for each unit multiplied by the number of tons of NOX emissions, as determined in accordance with subpart H of this part, from the common stack for the control period for which compliance is being determined. In addition to the deductions under the first sentence of this paragraph (e)(1), the Administrator will deduct NOX allowances for each such unit until the number of NOX allowances deducted equals the number of NOX allowances required to account for actual heat input under §97.42(e) for the unit for the control period.

(f) Deduction of banked allowances. Each year starting in 2006, after the
Administrator has completed the designation of banked NOX allowances under §97.55(b) and before May 1 of the year, the Administrator will determine the extent to which banked NOX allowances otherwise available under paragraph (a) of this section are available for compliance in the control period for the current year, as follows. For each State NOX Budget Trading Program that is established, and approved and administered by the Administrator pursuant to §51.121 of this chapter, the terms “compliance account” or “compliance accounts”, “overdraft account”, “general account”, “States”, and “trading program budgets under §97.40” in paragraphs (f)(1) through (f)(3) of this section shall be read to include respectively: A compliance account or compliance accounts established under such State NOX Budget Trading Program; an overdraft account or overdraft accounts established under such State NOX Budget Trading Program; a general account or general accounts established under such State NOX Budget Trading Program; the State or portion of a State covered by such State NOX Budget Trading Program; and the trading program budget of the State or portion of a State covered by such State NOX Budget Trading Program.

(1) The Administrator will determine the total number of banked NOX allowances held in compliance accounts, overdraft accounts, or general accounts.

(2) If the total number of banked NOX allowances determined, under paragraph (f)(1) of this section, to be held in compliance accounts, overdraft accounts, or general accounts is less than or equal to 10 percent of the sum of the trading program budgets under §97.40 for all States for the control period, any banked NOX allowance may be deducted for compliance in accordance with paragraphs (a) through (e) of this section, except as follows:

(i) The Administrator will determine the following ratio: 0.10 multiplied by the sum of the trading program budgets under §97.40 for all States for the control period and divided by the total number of banked NOX allowances determined, under paragraph (f)(1) of this section, to be held in compliance accounts, overdraft accounts, or general accounts.

(ii) The Administrator will multiply the number of banked NOX allowances in each compliance account or overdraft account by the ratio determined under paragraph (f)(3)(i) of this section. The resulting product is the number of banked NOX allowances in the account that may be deducted for compliance in accordance with paragraphs (a) through (e) of this section. Any banked NOX allowances in excess of the resulting product may be deducted for compliance in accordance with paragraphs (a) through (e) of this section, except that, if such NOX allowances are used to make a deduction under paragraph (b) or (e) of this section, two (rather than one) such NOX allowances shall authorize up to one ton of NOX emissions during the control period and must be deducted for each deduction of one NOX allowance required under paragraph (b) or (e) of this section.

(g) Recordation of deductions. The Administrator will record in the appropriate compliance account or overdraft account all deductions from such an account pursuant to paragraph (b), (d), (e), or (f) of this section.

[65 FR 2727, Jan. 18, 2000, as amended at 67 FR 21530, Apr. 30, 2002; 69 FR 21646, Apr. 21, 2004]

§ 97.55 Banking.

NOX allowances may be banked for future use or transfer in a compliance account, an overdraft account, or a general account, as follows:

(a) Any NOX allowance that is held in a compliance account, an overdraft account, or a general account will remain in such account unless and until the
NO\textsubscript{X} allowance is deducted or transferred under §97.31, §97.54, §97.56, or subpart G or I of this part.

(b) The Administrator will designate, as a “banked” NO\textsubscript{X} allowance, any NO\textsubscript{X} allowance that remains in a compliance account, an overdraft account, or a general account after the Administrator has made all deductions for a given control period from the compliance account or overdraft account pursuant to §97.54 (except deductions pursuant to §97.54(d)(2)) and that was allocated for that control period or a control period in a prior year.

§ 97.56 Account error. The Administrator may, at his or her sole discretion and on his or her own motion, correct any error in any NO\textsubscript{X} Allowance Tracking System account. Within 10 business days of making such correction, the Administrator will notify the NO\textsubscript{X} authorized account representative for the account.

§ 97.57 Closing of general accounts.

(a) The NO\textsubscript{X} authorized account representative of a general account may instruct the Administrator to close the account by submitting a statement requesting deletion of the account from the NO\textsubscript{X} Allowance Tracking System account and by correctly submitting for recordation under §97.60 an allowance transfer of all NO\textsubscript{X} allowances in the account to one or more other NO\textsubscript{X} Allowance Tracking System accounts.

(b) If a general account shows no activity for a period of a year or more and does not contain any NO\textsubscript{X} allowances, the Administrator may notify the NO\textsubscript{X} authorized account representative for the account that the account will be closed and deleted from the NO\textsubscript{X} Allowance Tracking System following 20 business days after the notice is sent. The account will be closed after the 20-day period unless before the end of the 20-day period the Administrator receives a correctly submitted transfer of NO\textsubscript{X} allowances into the account under §97.60 or a statement submitted by the NO\textsubscript{X} authorized account representative demonstrating to the satisfaction of the Administrator good cause as to why the account should not be closed.

Subpart G—NO\textsubscript{X} Allowance Transfers

§ 97.60 Submission of NO\textsubscript{X} allowance transfers. The NO\textsubscript{X} authorized account representatives seeking recordation of a NO\textsubscript{X} allowance transfer shall submit the transfer to the Administrator. To be considered correctly submitted, the NO\textsubscript{X} allowance transfer shall include the following elements in a format specified by the Administrator:

(a) The numbers identifying both the transferor and transferee accounts; and

(b) A specification by serial number of each NO\textsubscript{X} allowance to be transferred; and

(c) The printed name and signature of the NO\textsubscript{X} authorized account representative of the transferor account and the date signed.

§ 97.61 EPA recordation.

(a) Within 5 business days of receiving a NO\textsubscript{X} allowance transfer, except as provided in paragraph (b) of this section, the Administrator will record a NO\textsubscript{X} allowance transfer by moving each NO\textsubscript{X} allowance from the transferor account to the transferee account as specified by the request, provided that:

(1) The transfer is correctly submitted under §97.60; and

(2) The transferor account includes each NO\textsubscript{X} allowance identified by serial number in the transfer.

(b) A NO\textsubscript{X} allowance transfer that is submitted for recordation following the NO\textsubscript{X} allowance transfer deadline and that includes any NO\textsubscript{X} allowances allocated for a control period prior to or the same as the control period to which the NO\textsubscript{X} allowance transfer deadline applies will not be recorded until after the Administrator completes the recordation of NO\textsubscript{X} allowance allocations under §97.53 for the control period in the fourth year after the control period to which the NO\textsubscript{X} allowance transfer deadline applies.

(c) Where a NO\textsubscript{X} allowance transfer submitted for recordation fails to meet the requirements of paragraph (a) of this section, the Administrator will not record such transfer.

[65 FR 2727, Jan. 18, 2000, as amended at 69 FR 21647, Apr. 21, 2004]
§ 97.62 Notification.

(a) Notification of recordation. Within 5 business days of recordation of a NO\textsubscript{X} allowance transfer under § 97.61, the Administrator will notify the NO\textsubscript{X} authorized account representatives of both the transferor and transferee accounts.

(b) Notification of non-recordation. Within 10 business days of receipt of a NO\textsubscript{X} allowance transfer that fails to meet the requirements of § 97.61(a), the Administrator will notify the NO\textsubscript{X} authorized account representatives of both accounts subject to the transfer of:

(1) A decision not to record the transfer; and

(2) The reasons for such non-recordation.

(c) Nothing in this section shall preclude the submission of a NO\textsubscript{X} allowance transfer for recordation following notification of non-recordation.

Subpart H—Monitoring and Reporting

§ 97.70 General requirements.

The owners and operators, and to the extent applicable, the NO\textsubscript{X} authorized account representative of a NO\textsubscript{X} Budget unit, shall comply with the monitoring, recordkeeping, and reporting requirements as provided in this subpart and in subpart H of part 75 of this chapter. For purposes of complying with such requirements, the definitions in § 97.2 and in § 72.2 of this chapter shall apply, and the terms "affected unit," "designated representative," and "continuous emission monitoring system" (or "CEMS") in part 75 of this chapter shall be deemed to refer to the terms "NO\textsubscript{X} Budget unit," "NO\textsubscript{X} authorized account representative," and "continuous emission monitoring system" (or "CEMS") respectively, as defined in § 97.2. The owner or operator of a unit that is not a NO\textsubscript{X} Budget unit but that is monitored under § 75.72(b)(2)(ii) of this chapter shall comply with the monitoring, recordkeeping, and reporting requirements for a NO\textsubscript{X} Budget unit under this part.

(a) Requirements for installation, certification, and data accounting. The owner or operator of each NO\textsubscript{X} Budget unit shall meet the following requirements. These provisions shall also apply to a unit for which an application for a NO\textsubscript{X} Budget opt-in permit is submitted and not denied or withdrawn, as provided in subpart I of this part:

(1) Install all monitoring systems required under this subpart for monitoring NO\textsubscript{X} mass emissions. This includes all systems required to monitor NO\textsubscript{X} emission rate, NO\textsubscript{X} concentration, heat input rate, and stack flow rate, in accordance with §§ 75.71 and 75.72 of this chapter.

(2) Install all monitoring systems for monitoring heat input rate.

(3) Successfully complete all certification tests required under § 97.71 and meet all other requirements of this subpart and part 75 of this chapter applicable to the monitoring systems under paragraphs (a)(1) and (2) of this section.

(4) Record, report, and quality-assure the data from the monitoring systems under paragraphs (a)(1) and (2) of this section.

(b) Compliance deadlines. The owner or operator shall meet the certification and other requirements of paragraphs (a)(1) through (a)(3) of this section on or before the following dates. The owner or operator shall record, report and quality-assure the data from the monitoring systems under paragraphs (a)(1) and (a)(2) of this section on and after the following dates.

(1) For the owner or operator of a NO\textsubscript{X} Budget unit for which the owner or operator intends to apply for early reduction credits under § 97.43, by May 1, 2001. If the owner or operator of a NO\textsubscript{X} Budget unit fails to meet this deadline, he or she is not eligible to apply for early reduction credits and is subject to the deadline under paragraph (b)(2) of this section.

(2) For the owner or operator of a NO\textsubscript{X} Budget unit under § 97.4(a) that commences operation before January 1, 2003 and that is not subject to or does not meet the deadline under paragraph (b)(1) of this section, by May 1, 2003.

(3) For the owner or operator of a NO\textsubscript{X} Budget unit under § 97.4(a) that
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commences operation on or after January 1, 2003 and that reports on an annual basis under §97.74(d) by the following dates:

(i) The earlier of 90 unit operating days after the date on which the unit commences commercial operation or 180 calendar days after the date on which the unit commences commercial operation; or

(ii) May 1, 2003, if the compliance date under paragraph (b)(3)(i) of this section is before May 1, 2003.

(4) For the owner or operator of a NOX Budget unit under §97.4(a) that commences operation on or after January 1, 2003 and that reports on a control period basis under §97.74(d)(2)(ii), by the following dates:

(i) The earlier of 90 unit operating days or 180 calendar days after the date on which the unit commences commercial operation, if this compliance date is during a control period; or

(ii) May 1 immediately following the compliance date under paragraph (b)(4)(i) of this section, if such compliance date is not during a control period.

(5) For the owner or operator of a NOX Budget unit that has a new stack or flue or add-on NOX emission controls for which construction is completed after the applicable deadline under paragraph (b)(1), (b)(2), (b)(3), or (b)(4) of this section or under subpart I of this part and that reports on an annual basis under §97.74(d), by the earlier of 90 unit operating days or 180 calendar days after the date on which emissions first exit to the atmosphere through the new stack or flue or add-on NOX emission controls.

(6) For the owner or operator of a NOX Budget unit that has a new stack or flue or add-on NOX emission controls for which construction is completed after the applicable deadline under paragraph (b)(1), (b)(2), (b)(3), or (b)(4) of this section or under subpart I of this part and that reports on a control period basis under §97.74(d)(2)(ii), by the following dates:

(i) The earlier of 90 unit operating days or 180 calendar days after the date on which emissions first exit to the atmosphere through the new stack or flue or add-on NOX emission controls, if this compliance date is during a control period; or

(ii) May 1 immediately following the compliance date under paragraph (b)(6)(i) of this section, if such compliance date is not during a control period.

(7) For the owner or operator of a unit for which an application for a NOX Budget opt-in permit is submitted and not denied or withdrawn, by the date specified under subpart I of this part.

(c) Commencement of data reporting. (1) The owner or operator of NOX Budget units under paragraph (b)(1) or (b)(2) of this section shall determine, record and report NOX mass emissions, heat input rate, and any other values required to determine NOX mass emissions (e.g., NOX emission rate and heat input rate, or NOX concentration and stack flow rate) in accordance with §75.70(g) of this chapter, beginning on

(i) The date and hour on which the unit commences operation, if the date and hour on which the unit commences operation is during a control period; or

(ii) The first hour on May 1 of the first control period after the date and hour on which the unit commences operation, if the date and hour on which the unit commences operation is not during a control period.

(2) The owner or operator of a NOX Budget unit under paragraph (b)(3) or (b)(4) of this section shall determine, record and report NOX mass emissions, heat input rate, and any other values required to determine NOX mass emissions (e.g., NOX emission rate and heat input rate, or NOX concentration and stack flow rate) and electric and thermal output in accordance with §75.70(g) of this chapter, beginning on

(i) The date and hour on which the unit commences operation, if the date and hour on which the unit commences operation is during a control period; or

(ii) The first hour on May 1 of the first control period after the date and hour on which the unit commences operation, if the date and hour on which the unit commences operation is not during a control period.

(3) Notwithstanding paragraphs (c)(2)(i) and (c)(2)(ii) of this section, the owner or operator may begin reporting NOX mass emission data and heat input data before the date and hour under paragraph (c)(2)(i) or (c)(2)(ii) of this section if the unit reports on an annual basis and if the required monitoring systems are certified before the applicable date and hour under paragraph (c)(1) or (c)(2) of this section.
(d) Prohibitions. (1) No owner or operator of a NO\textsubscript{X} Budget unit shall use any alternative monitoring system, alternative reference method, or any other alternative for the required continuous emission monitoring system without having obtained prior written approval in accordance with §97.75.

(2) No owner or operator of a NO\textsubscript{X} Budget unit shall operate the unit so as to discharge, or allow to be discharged, NO\textsubscript{X} emissions to the atmosphere without accounting for all such emissions in accordance with the applicable provisions of this subpart and part 75 of this chapter, except as provided in §75.74 of this chapter.

(3) No owner or operator of a NO\textsubscript{X} Budget unit shall disrupt the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording NO\textsubscript{X} mass emissions discharged into the atmosphere, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the applicable provisions of this subpart and part 75 of this chapter, or except as provided in §75.74 of this chapter.

(4) No owner or operator of a NO\textsubscript{X} Budget unit shall retire or permanently discontinue use of the continuous emission monitoring system, any component thereof, or any other approved emission monitoring system under this subpart, except under any one of the following circumstances:

(i) During the period that the unit is covered by an exemption under §97.4(b) or §97.5 that is in effect;

(ii) The owner or operator is monitoring emissions from the unit with another certified monitoring system approved, in accordance with the applicable provisions of this subpart and part 75 of this chapter, by the permitting authority for use at that unit that provides emission data for the same pollutant or parameter as the retired or discontinued monitoring system; or

(iii) The NO\textsubscript{X} authorized account representative submits notification of the date of certification testing of a replacement monitoring system for the retired or discontinued monitoring system in accordance with §97.71(b)(2).

§97.71 Initial certification and recertification procedures.

(a) The owner or operator of a NO\textsubscript{X} Budget unit that is subject to an Acid Rain emissions limitation shall comply with the initial certification and recertification procedures of part 75 of this chapter for NO\textsubscript{X}-diluent CEMS, flow monitors, NO\textsubscript{X} concentration CEMS, or excepted monitoring systems under appendix E of part 75 of this chapter for NO\textsubscript{X} under appendix D for heat input, or under §75.19 for NO\textsubscript{X} and heat input, except that:

(1) If, prior to January 1, 1998, the Administrator approved a petition under §75.17(a) or (b) of this chapter for apportioning the NO\textsubscript{X} emission rate measured in a common stack or a petition under §75.66 of this chapter for an alternative to a requirement in §75.17 of this chapter, the NO\textsubscript{X} authorized account representative shall resubmit the petition to the Administrator under §97.75(a) to determine if the approval applies under the NO\textsubscript{X} Budget Trading Program.

(2) For any additional CEMS required under the common stack provisions in §75.72 of this chapter or for any NO\textsubscript{X} concentration CEMS used under the provisions of §75.71(a)(2) of this chapter, the owner or operator shall meet the requirements of paragraph (b) of this section.

(b) The owner or operator of a NO\textsubscript{X} Budget unit that is not subject to an Acid Rain emissions limitation shall comply with the following initial certification and recertification procedures. The owner or operator of such a unit that qualifies to use the low mass emissions excepted monitoring methodology under §75.19 of this chapter or that qualifies to use an alternative monitoring system under subpart E of part 75 of this chapter shall comply with the following procedures, as modified by paragraph (c) or (d) of this section. The owner or operator of a NO\textsubscript{X} Budget unit that is subject to an Acid...
Rain emissions limitation and that requires additional CEMS under the common stack provisions in §75.72 of this chapter or uses a NO\textsubscript{X} concentration CEMS under §75.71(a)(2) of this chapter shall comply with the following procedures.

(1) Requirements for initial certification. The owner or operator shall ensure that each emission monitoring system required by subpart H of part 75 of this chapter (which includes the automated data acquisition and handling system) successfully completes all of the initial certification testing required under §75.20 of this chapter by the applicable deadline in §97.70(b). In addition, whenever the owner or operator installs an emission monitoring system in order to meet the requirements of this part in a location where no such emission monitoring system was previously installed, initial certification in accordance with §75.20 of this chapter is required.

(2) Requirements for recertification. Whenever the owner or operator makes a replacement, modification, or change in a certified emission monitoring system that may significantly affect the ability of the system to accurately measure or record NO\textsubscript{X} mass emissions or heat input rate or to meet the requirements of §75.21 of this chapter or appendix B to part 75 of this chapter, the owner or operator shall recertify the emission monitoring system in accordance with §75.20(b) of this chapter. Furthermore, whenever the owner or operator makes a replacement, modification, or change to the flue gas handling system or the unit’s operation that may significantly change the stack flow or concentration profile, the owner or operator shall recertify the continuous emissions monitoring system in accordance with §75.20(b) of this chapter. Examples of changes that require recertification include: replacement of the analyzer, complete replacement of an existing continuous emission monitoring system, or change in location or orientation of the sampling probe or site.

(3) Certification approval process for initial certification and recertification—(i) Notification of certification. The NO\textsubscript{X} authorized account representative shall submit to the Administrator, the appropriate EPA Regional Office and the permitting authority a certification application for each emission monitoring system required under subpart H of part 75 of this chapter. A complete certification application shall include the information specified in subpart H of part 75 of this chapter. (ii) Certification application. The NO\textsubscript{X} authorized account representative shall submit to the Administrator, the appropriate EPA Regional Office and the permitting authority a certification application for each emission monitoring system required under subpart H of part 75 of this chapter. A complete certification application shall include the information specified in subpart H of part 75 of this chapter. A provisionally certified monitor may be used under the NO\textsubscript{X} Budget Trading Program for a period not to exceed 120 days after receipt by the Administrator of the complete certification application for the monitoring system under paragraph (b)(3)(ii) of this section. Data measured and recorded by the provisionally certified monitoring system, in accordance with the requirements of part 75 of this chapter, will be considered valid quality-assured data (retroactive to the date and time of provisional certification), provided that the Administrator does not invalidate the provisional certification by issuing a notice of disapproval within 120 days of receipt of the complete certification application by the Administrator. (iv) Certification application formal approval process. The Administrator will issue a written notice of approval or disapproval of the certification application to the owner or operator within 120 days of receipt of the complete certification application under paragraph (b)(3)(ii) of this section. In the event the Administrator does not issue such a notice within such 120-day period, each monitoring system that meets the applicable performance requirements of part 75 of this chapter and is included in the certification application will be deemed certified for use under the NO\textsubscript{X} Budget Trading Program.

(A) Approval notice. If the certification application is complete and shows that each monitoring system
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meets the applicable performance requirements of part 75 of this chapter, then the Administrator will issue a written notice of approval of the certification application within 120 days of receipt.

(B) Incomplete application notice. A certification application will be considered complete when all of the applicable information required to be submitted under paragraph (b)(3)(ii) of this section has been received by the Administrator. If the certification application is not complete, then the Administrator will issue a written notice of incompleteness that sets a reasonable date by which the NOX authorized account representative must submit the additional information required to complete the certification application. If the NOX authorized account representative does not comply with the notice of incompleteness by the specified date, then the Administrator may issue a notice of disapproval under paragraph (b)(3)(iv)(C) of this section.

The 120-day review period shall not begin prior to receipt of a complete certification application.

(C) Disapproval notice. If the certification application shows that any monitoring system or component thereof does not meet the performance requirements of this part, or if the certification application is incomplete and the requirement for disapproval under paragraph (b)(3)(iv)(B) of this section has been met, then the Administrator will issue a written notice of disapproval of the certification application. Upon issuance of such notice of disapproval, the provisional certification is invalidated by the Administrator and the data measured and recorded by each uncertified monitoring system shall not be considered valid quality-assured data beginning with the date and hour of provisional certification (as defined under §75.20(a)(3) of this chapter). The owner or operator shall follow the procedures for loss of certification in accordance with §75.20(a)(3) of this chapter.

(D) Audit decertification. The Administrator may issue a notice of disapproval of the certification status of a monitor in accordance with §97.72(b).

(v) Procedures for loss of certification. If the Administrator issues a notice of disapproval of a certification application under paragraph (b)(3)(iv)(C) of this section or a notice of disapproval of certification status under paragraph (b)(3)(iv)(D) of this section, then:

(A) The owner or operator shall substitute the following values, for each hour of unit operation during the period of invalid data specified under §75.20(a)(4)(iii), §75.20(b)(5), §75.20(h)(4), or §75.21(e) and continuing until the date and hour specified under §75.20(a)(5)(i) of this chapter:

(1) For units that the owner or operator intends to monitor or monitors for NOX emission rate and heat input rate or intends to determine or determines NOX mass emissions using the low mass emission excepted methodology under §75.19 of this chapter, the maximum potential NOX emission rate and the maximum potential hourly heat input of the unit; and

(2) For units that the owner or operator intends to monitor or monitors for NOX mass emissions using a NOX pollutant concentration monitor and a flow monitor, the maximum potential concentration of NOX and the maximum potential flow rate of the unit under section 2 of appendix A of part 75 of this chapter.

(B) The NOX authorized account representative shall submit a notification of certification retest dates and a new certification application in accordance with paragraphs (b)(3)(i) and (ii) of this section.

(C) The owner or operator shall repeat all certification tests or other requirements that were failed by the monitoring system, as indicated in the Administrator’s notice of disapproval, no later than 30 unit operating days after the date of issuance of the notice of disapproval.

(c) Initial certification and recertification procedures for low mass emission units using the excepted methodologies under §75.19 of this chapter. The owner or operator of a gas-fired or oil-fired unit using the low mass emissions excepted methodology under §75.19 of this chapter and not subject to an Acid Rain emissions limitation shall meet the applicable general operating requirements of §75.10 of this chapter and
§ 97.72 Out of control periods. (a) Whenever any emission monitoring system fails to meet the quality assurance or data validation requirements of part 75 of this chapter, data shall be substituted using the applicable procedures in subpart D, subpart H, appendix D, or appendix E of part 75 of this chapter.

(b) Audit decertification. Whenever both an audit of an emission monitoring system and a review of the initial certification or recertification application reveal that any system should not have been certified or recertified because it did not meet a particular performance specification or other requirement under §97.71 or the applicable provisions of part 75 of this chapter, both at the time of the initial certification or recertification application submission and at the time of the audit, the Administrator will issue a notice of disapproval of the certification status of such system. For the purposes of this paragraph, an audit shall be either a field audit or an audit of any information submitted to the permitting authority or the Administrator. By issuing the notice of disapproval, the Administrator revokes prospectively the certification status of the system. The data measured and recorded by the system shall not be considered valid quality-assured data from the date of issuance of the notification of the revoked certification status until the date and time that the owner or operator completes subsequently approved initial certification or recertification tests for the system. The owner or operator shall follow the initial certification or recertification procedures in §97.71 for each disapproved system.

[65 FR 2727, Jan. 18, 2000, as amended at 69 FR 21648, Apr. 21, 2004]

§ 97.74 Recordkeeping and reporting. (a) General provisions. (1) The NOx authorized account representative shall comply with all recordkeeping and reporting requirements in this section, with the recordkeeping and reporting requirements under §75.73 of this chapter, and with the requirements of §97.10(e)(1).
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(2) If the NOₓ authorized account representative for a NOₓ Budget unit subject to an Acid Rain emission limitation who signed and certified any submission that is made under subpart F or G of part 75 of this chapter and that includes data and information required under this subpart or subpart H of part 75 of this chapter is not the same person as the designated representative or the alternative designated representative for the unit under part 72 of this chapter, then the submission must also be signed by the designated representative or the alternative designated representative.

(b) Monitoring plans. (1) The owner or operator of a unit subject to an Acid Rain emissions limitation shall comply with requirements of §75.62 of this chapter, except that the monitoring plan shall also include all of the information required by subpart H of part 75 of this chapter.

(2) The owner or operator of a unit that is not subject to an Acid Rain emissions limitation shall comply with requirements of §75.62 of this chapter, except that the monitoring plan is only required to include the information required by subpart H of part 75 of this chapter.

(c) Certification applications. The NOₓ authorized account representative shall submit an application to the Administrator, the appropriate EPA Regional Office, and the permitting authority within 45 days after completing all initial certification or recertification tests required under §97.71 including the information required under subpart H of part 75 of this chapter.

(d) Quarterly reports. The NOₓ authorized account representative shall submit quarterly reports, as follows:

(1) If a unit is subject to an Acid Rain emission limitation or if the owner or operator of the NOₓ budget unit chooses to meet the annual reporting requirements of this subpart H, the NOₓ authorized account representative shall submit a quarterly report for each calendar quarter beginning with:

(i) For a unit for which the owner or operator intends to apply or applies for the early reduction credits under §97.43, the calendar quarter that covers May 1, 2000 through June 30, 2000. The NOₓ mass emission data shall be recorded and reported from the first hour on May 1, 2000; or

(ii) For a unit that commences operation before January 1, 2003 and that is not subject to paragraph (d)(1)(i) of this section, the calendar quarter covering May 1, 2003 through June 30, 2003. The NOₓ mass emission data shall be recorded and reported from the first hour on May 1, 2003; or

(iii) For a unit that commences operation on or after January 1, 2003:

(A) The calendar quarter in which the unit commences operation, if unit operation commences during a control period. The NOₓ mass emission data shall be recorded and reported from the date and hour when the unit commences operation; or

(B) The calendar quarter which includes May 1 through June 30 of the first control period following the date on which the unit commences operation, if the unit does not commence operation during a control period. The NOₓ mass emission data shall be recorded and reported from the first hour on May 1 of that control period; or

(iv) A calendar quarter before the quarter specified in paragraph (d)(1)(i), (d)(1)(ii), or (d)(1)(iii)(B) of this section, if the owner or operator elects to begin reporting early under §97.70(c)(3).

(2) If a NOₓ budget unit is not subject to an Acid Rain emission limitation, then the NOₓ authorized account representative shall either:

(i) Meet all of the requirements of part 75 related to monitoring and reporting NOₓ mass emissions during the entire year and meet the deadlines specified in paragraph (d)(1) of this section; or

(ii) Submit quarterly reports, documenting NOₓ mass emissions from the unit, only for the period from May 1 through September 30 of each year and including the data described in §75.74(c)(6) of this chapter. The NOₓ authorized account representative shall submit such quarterly reports, beginning with:

(A) For a unit for which the owner or operator intends to apply or applies for the early reduction credits under §97.43, the calendar quarter that covers May 1, 2000 through June 30, 2000. The
§ 97.75  NO\textsubscript{X} mass emission data shall be recorded and reported from the first hour on May 1, 2000; or  

(B) For a unit that commences operation before January 1, 2003 and that is not subject to paragraph (d)(2)(ii)(A) of this section, the calendar quarter covering May 1, 2003 through June 30, 2003. The NO\textsubscript{X} mass emission data shall be recorded and reported from the first hour on May 1, 2003; or  

(C) For a unit that commences operation on or after January 1, 2003 and during a control period, the calendar quarter in which the unit commences operation. The NO\textsubscript{X} mass emission data shall be recorded and reported from the date and hour when the unit commences operation; or  

(D) For a unit that commences operation on or after January 1, 2003 and not during a control period, the calendar quarter which includes May 1 through June 30 of the first control period following the date on which the unit commences operation. The NO\textsubscript{X} mass emission data shall be recorded and reported from the first hour on May 1 of that control period.

(3) The NO\textsubscript{X} authorized account representative shall submit each quarterly report to the Administrator within 30 days following the end of the calendar quarter covered by the report. Quarterly reports shall be submitted in the manner specified in subpart H of part 75 of this chapter and § 75.64 of this chapter.

(ii) For a unit with add-on NO\textsubscript{X} emission controls and for all hours where data are substituted in accordance with § 75.34(a)(1) of this chapter, the add-on emission controls were operating within the range of parameters listed in the quality assurance/quality control program under appendix B of part 75 of this chapter and the substitute values do not systematically underestimate NO\textsubscript{X} emissions; and

(iii) For a unit that is reporting on a control period basis under paragraph (d)(2)(ii) of this section, the NO\textsubscript{X} emission rate and NO\textsubscript{X} concentration values substituted for missing data under subpart D of part 75 of this chapter are calculated using only values from a control period and do not systematically underestimate NO\textsubscript{X} emissions.


§ 97.75 Petitions.  

(a) The NO\textsubscript{X} authorized account representative of a NO\textsubscript{X} Budget unit may submit a petition under § 75.66 of this chapter to the Administrator requesting approval to apply an alternative to any requirement of this subpart.

(b) Application of an alternative to any requirement of this subpart is in accordance with this subpart only to the extent that the petition is approved by the Administrator under § 75.66 of this chapter.

§ 97.76 Additional requirements to provide heat input data.  

The owner or operator of a NO\textsubscript{X} Budget unit that monitors and reports NO\textsubscript{X} mass emissions using a NO\textsubscript{X} concentration system and a flow system shall also monitor and report heat input rate at the unit level using the procedures set forth in part 75 of this chapter.
Subpart I—Individual Unit Opt-ins.

§ 97.80 Applicability.

A unit that is in a State (as defined in §97.2), is not a NO\textsubscript{X} Budget unit under §97.4(a), is not a unit exempt under §97.4(b), vents all of its emissions to a stack, and is operating, may qualify to be a NO\textsubscript{X} Budget opt-in unit under this subpart. A unit that is a NO\textsubscript{X} Budget unit under §97.4(a), is covered by an exemption under §97.4(b) or §97.5 that is in effect, or is not operating is not eligible to be a NO\textsubscript{X} Budget opt-in unit.

§ 97.81 General.

Except otherwise as provided in this part, a NO\textsubscript{X} Budget opt-in unit shall be treated as a NO\textsubscript{X} Budget unit for purposes of applying subparts A through H of this part.

§ 97.82 NO\textsubscript{X} authorized account representative.

A unit for which an application for a NO\textsubscript{X} Budget opt-in permit is submitted, or a NO\textsubscript{X} Budget opt-in unit, located at the same source as one or more NO\textsubscript{X} Budget units, shall have the same NO\textsubscript{X} authorized account representative as such NO\textsubscript{X} Budget units.

§ 97.83 Applying for NO\textsubscript{X} Budget opt-in permit.

(a) Applying for initial NO\textsubscript{X} Budget opt-in permit. In order to apply for an initial NO\textsubscript{X} Budget opt-in permit, the NO\textsubscript{X} authorized account representative of a unit qualified under §97.80 may submit to the Administrator and the permitting authority at any time, except as provided under §97.86(g):

1. A complete NO\textsubscript{X} Budget permit application under §97.22;
2. A monitoring plan submitted in accordance with subpart H of this part; and
3. A complete account certificate of representation under §97.13, if no NO\textsubscript{X} authorized account representative has been previously designated for the unit.

(b) Duty to reapply. Unless the NO\textsubscript{X} Budget opt-in permit is terminated or revised under §97.86(c) or §97.87(b)(1)(i), the NO\textsubscript{X} authorized account representative of a NO\textsubscript{X} Budget opt-in unit shall submit to the Administrator and permitting authority a complete NO\textsubscript{X} Budget permit application under §97.22 to renew the NO\textsubscript{X} Budget opt-in permit in accordance with §97.21(c) and, if applicable, an updated monitoring plan in accordance with subpart H of this part.

§ 97.84 Opt-in process.

The permitting authority will issue or deny an initial NO\textsubscript{X} Budget opt-in permit for a unit for which an application for a NO\textsubscript{X} Budget opt-in permit under §97.83 is submitted, in accordance with §97.20 and the following:

(a) Interim review of monitoring plan. The Administrator will determine, on an interim basis, the sufficiency of the monitoring plan accompanying the initial application for a NO\textsubscript{X} Budget opt-in permit under §97.83. A monitoring plan is sufficient, for purposes of interim review, if the plan appears to contain information demonstrating that the NO\textsubscript{X} emissions rate and heat input rate of the unit are monitored and reported in accordance with subpart H of this part. A determination of sufficiency shall not be construed as acceptance or approval of the unit’s monitoring plan.

(b) If the Administrator determines that the unit’s monitoring plan is sufficient under paragraph (a) of this section and after completion of monitoring system certification under subpart H of this part, the NO\textsubscript{X} emissions rate and the heat input of the unit shall be monitored and reported in accordance with subpart H of this part for one full control period during which percent monitor data availability is not less than 90 percent and during which the unit is in full compliance with any applicable State or Federal emissions or emissions-related requirements. Solely for purposes of applying the requirements in the prior sentence, the unit shall be treated as a “NO\textsubscript{X} Budget unit” prior to issuance of a NO\textsubscript{X} Budget opt-in permit covering the unit.

(c) Based on the information monitored and reported under paragraph (b) of this section, the Administrator will calculate the unit’s baseline heat input, which will equal the unit’s total heat input (in mmBtu) for the control period, and the unit’s baseline NO\textsubscript{X} emissions rate, which will equal the unit’s total NO\textsubscript{X} mass emissions (in lb)
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for the control period divided by the unit’s baseline heat input.

(d) Issuance of draft NOx Budget opt-in permit for public comment. The permitting authority will issue a draft NOx Budget opt-in permit for public comment in accordance with §97.20.

(e) Notwithstanding paragraphs (a) through (d) of this section, if at any time before issuance of a draft NOx Budget opt-in permit for public comment for the unit, the Administrator or the permitting authority determines that the unit does not qualify as a NOx Budget opt-in unit under §97.80, the permitting authority will issue a draft denial of a NOx Budget opt-in permit for public comment for the unit in accordance with §97.20.

(f) Withdrawal of application for NOx Budget opt-in permit. A NOx authorized account representative of a unit may withdraw its application for an initial NOx Budget opt-in permit under §97.83 at any time prior to the issuance of the initial NOx Budget opt-in permit. Once the application for a NOx Budget opt-in permit is withdrawn, a NOx authorized account representative wanting to reapply must submit a new application for an initial NOx Budget permit under §97.83.

(g) The unit shall be a NOx Budget opt-in unit and a NOx Budget unit starting May 1 of the first control period starting after the issuance of the initial NOx Budget opt-in permit by the permitting authority.

§ 97.86 NOx Budget opt-in permit contents.

(a) Each NOx Budget opt-in permit will contain all elements required for a complete NOx Budget opt-in permit application under §97.22.

(b) Each NOx Budget opt-in permit is deemed to incorporate automatically the definitions of terms under §97.2 and, upon recordation by the Administrator under subpart F or G of this part, every allocation, transfer, or deduction of NOx allowances to or from the compliance accounts of each NOx Budget opt-in unit covered by the NOx Budget opt-in permit or the overdraft account of the NOx Budget source where the NOx Budget opt-in unit is located.

§ 97.86 Withdrawal from NOx Budget Trading Program.

(a) Requesting withdrawal. To withdraw from the NOx Budget Trading Program, the NOx authorized account representative of a NOx Budget opt-in unit shall submit to the Administrator and the permitting authority a request to withdraw effective as of a specified date prior to May 1 or after September 30. The submission shall be made no later than 90 days prior to the requested effective date of withdrawal.

(b) Conditions for withdrawal. Before a NOx Budget opt-in unit covered by a request under paragraph (a) of this section may withdraw from the NOx Budget Trading Program and the NOx Budget opt-in permit may be terminated under paragraph (e) of this section, the following conditions must be met:

1. For the control period immediately before the withdrawal is to be effective, the NOx authorized account representative must submit or must have submitted to the Administrator and the permitting authority an annual compliance certification report in accordance with §97.30.

2. If the NOx Budget opt-in unit has excess emissions for the control period immediately before the withdrawal is to be effective, the Administrator will deduct or has deducted from the NOx Budget opt-in unit’s compliance account, or the overdraft account of the NOx Budget source where the NOx Budget opt-in unit is located, the full amount required under §97.54(d) for the control period.

3. After the requirements for withdrawal under paragraphs (b)(1) and (2) of this section are met, the Administrator will deduct from the NOx Budget opt-in unit’s compliance account, or the overdraft account of the NOx Budget source where the NOx Budget opt-in unit is located, NOx allowances equal in number to and allocated for the same or a prior control period as any NOx allowances allocated to that source under §97.86 for any control period for which the withdrawal is to be effective. The Administrator will close the NOx Budget opt-in unit’s compliance account and transfer any remaining allowances to a general account specified by the owners and operators of the NOx Budget opt-in unit.
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(c) A NOX Budget opt-in unit that withdraws from the NOX Budget Trading Program shall comply with all requirements under the NOX Budget Trading Program concerning all years for which such NOX Budget opt-in unit was a NOX Budget opt-in unit, even if such requirements arise or must be complied with after the withdrawal takes effect.

(d) Notification. (1) After the requirements for withdrawal under paragraphs (a) and (b) of this section are met (including deduction of the full amount of NOX allowances required), the Administrator will issue a notification to the permitting authority and the NOX authorized account representative of the NOX Budget opt-in unit of the acceptance of the withdrawal of the NOX Budget opt-in unit as of a specified effective date that is after such requirements have been met and that is prior to May 1 or after September 30.

(2) If the requirements for withdrawal under paragraphs (a) and (b) of this section are not met, the Administrator will issue a notification to the permitting authority and the NOX authorized account representative of the NOX Budget opt-in unit that the request to withdraw is denied. If the NOX Budget opt-in unit’s request to withdraw is denied, the NOX Budget opt-in unit shall remain subject to the requirements for a NOX Budget opt-in unit.

(e) Permit revision. After the Administrator issues a notification under paragraph (d)(1) of this section that the requirements for withdrawal have been met, the permitting authority will revise the NOX Budget permit covering the NOX Budget opt-in unit to terminate the NOX Budget opt-in permit as of the effective date specified under paragraph (d)(1) of this section. A NOX Budget opt-in unit shall continue to be a NOX Budget opt-in unit until the effective date of the termination.

(f) Reapplication upon failure to meet conditions of withdrawal. If the Administrator denies the request to withdraw the NOX Budget opt-in unit, the NOX authorized account representative may submit another request to withdraw in accordance with paragraphs (a) and (b) of this section.

(g) Ability to return to the NOX Budget Trading Program. Once a NOX Budget opt-in unit withdraws from the NOX Budget Trading Program and its NOX Budget opt-in permit is terminated under paragraph (e) of this section, the NOX authorized account representative may not submit another application for a NOX Budget opt-in permit under §97.83 for the unit prior to the date that is 4 years after the date on which the terminated NOX Budget opt-in permit became effective.

§ 97.87 Change in regulatory status.

(a) Notification. When a NOX Budget opt-in unit becomes a NOX Budget unit under §97.4(a), the NOX authorized account representative shall notify in writing the permitting authority and the Administrator of such change in the NOX Budget opt-in unit’s regulatory status, within 30 days of such change.

(b) Permitting authority’s and Administrator’s action. (1)(i) When the NOX Budget opt-in unit becomes a NOX Budget unit under §97.4(a), the permitting authority will revise the NOX Budget opt-in unit’s NOX Budget opt-in permit to meet the requirements of a NOX Budget permit under §97.23 as of an effective date that is the date on which such NOX Budget opt-in unit becomes a NOX Budget unit under §97.4(a).

(ii)(A) The Administrator will deduct from the compliance account for the NOX Budget unit under paragraph (b)(1)(i) of this section, or the overdraft account of the NOX Budget source where the unit is located, NOX allowances equal in number to and allocated for the same or a prior control period as:

(1) Any NOX allowances allocated to the NOX Budget unit (as a NOX Budget opt-in unit) under §97.88 for any control period after the last control period during which the unit’s NOX Budget opt-in permit was effective; and

(2) If the effective date of the NOX Budget permit revision under paragraph (b)(1)(i) of this section is during a control period, the NOX allowances allocated to the NOX Budget unit (as a NOX Budget opt-in unit) under §97.88 for the control period multiplied by the number of days in the control period.
starting with the effective date of the
permit revision under paragraph
(b)(1)(i) of this section, divided by the
total number of days in the control pe-
riod, and rounded to the nearest whole
number of NOX allowances as appro-
priate.

(B) The NOX authorized account rep-
resentative shall ensure that the com-
pliance account of the NOX Budget unit
under paragraph (b)(1)(i) of this sec-
tion, or the overdraft account of the
NOX Budget source where the unit is
located, contains the NOX allowances
necessary for completion of the deduc-
tion under paragraph (b)(1)(i)(A) of
this section. If the compliance account
or overdraft account does not contain
the necessary NOX allowances, the Ad-
ministrator will deduct the required
number of NOX allowances, regardless
of the control period for which they
were allocated, whenever NOX allow-
ances are recorded in either account.

(iii)(A) For every control period dur-
ing which the NOX Budget permit re-
vised under paragraph (b)(1)(i) of
this section is in effect, the NOX Budget
unit under paragraph (b)(1)(i) of
this section will be treated, solely for pur-
poses of NOX allowance allocations
under §97.42, as a unit that commenced
operation on the effective date of the
NOX Budget permit revision under
paragraph (b)(1)(i) of this section and
will be allocated NOX allowances under
§97.42. The unit’s deadline under
§97.84(b) for meeting monitoring re-
quirements in accordance with subpart
H of this part shall not be changed by
the change in the unit’s regulatory sta-
tus or by the revision of the NOX Bud-
get permit under paragraph (b)(1)(i)
of this section.

(B) Notwithstanding paragraph
(b)(1)(iii)(A) of this section, if the effec-
tive date of the NOX Budget permit re-
vision under paragraph (b)(1)(i) of
this section is during a control period,
the following number of NOX allowances
will be allocated to the NOX Budget
unit under paragraph (b)(1)(i) of this
section under §97.42 for the control pe-
riod: the number of NOX allowances
otherwise allocated to the NOX Budget
unit under §97.42 for the control period
multiplied by the number of days in
the control period starting with the ef-
fective date of the permit revision
under paragraph (b)(1)(i) of this section,
divided by the total number of days in
the control period, and rounded
to the nearest whole number of NOX al-
lowances as appropriate.

(2)(i) When the NOX authorized ac-
count representative of a NOX Budget
opt-in unit does not renew its NOX
Budget opt-in permit under §97.83(b),
the Administrator will deduct from the
NOX Budget opt-in unit’s compliance
account, or the overdraft account of
the NOX Budget source where the NOX
Budget opt-in unit is located, NOX al-
lowances equal in number to and allo-
cated for the same or a prior control
period as any NOX allowances allocated
to the NOX Budget opt-in unit under
§97.88 for any control period after the
last control period for which the NOX
Budget opt-in permit is effective. The
NOX authorized account representative
shall ensure that the NOX Budget opt-
in unit’s compliance account or the
overdraft account of the NOX Budget
source where the NOX Budget opt-in
unit is located contains the NOX allow-
ances necessary for completion of such
deduction. If the compliance account
or overdraft account does not contain
the necessary NOX allowances, the Ad-
ministrator will deduct the required
number of NOX allowances, regardless
of the control period for which they
were allocated, whenever NOX allow-
ances are recorded in either account.

(ii) After the deduction under para-
graph (b)(2)(i) of this section is com-
pleted, the Administrator will close the
NOX Budget opt-in unit’s compliance
account. If any NOX allowances remain
in the compliance account after com-
pletion of such deduction and any de-
duction under §97.54, the Adminis-
trator will close the NOX Budget opt-in
unit’s compliance account and transfer
any remaining allowances to a general
account specified by the owners and op-
erators of the NOX Budget opt-in unit.

[65 FR 2727, Jan. 18, 2000, as amended at 69
FR 21648, Apr. 21, 2004]

§97.88 NOX allowance allocations to
opt-in units.

(a) NOX allotment allocation. (1) By
April 1 immediately before the first
control period for which the NOX Bud-
get opt-in permit is effective, the Ad-
ministrator will determine by order
the NO\textsubscript{X} allowance allocations for the NO\textsubscript{X} Budget opt-in unit for the control period in accordance with paragraph (b) of this section.

(2) By no later than April 1, after the first control period for which the NO\textsubscript{X} Budget opt-in permit is in effect, and April 1 of each year thereafter, the Administrator will determine by order the NO\textsubscript{X} allowance allocations for the NO\textsubscript{X} Budget opt-in unit for the next control period, in accordance with paragraph (b) of this section.

(3) The Administrator will make available to the public each determination of NO\textsubscript{X} allowance allocations under paragraph (a)(1) or (2) of this section and will provide an opportunity for submission of objections to the determination. Objections shall be limited to addressing whether the determination is in accordance with paragraph (b) of this section. Based on any such objections, the Administrator will adjust each determination to the extent necessary to ensure that it is in accordance with paragraph (b) of this section.

(b) For each control period for which the NO\textsubscript{X} Budget opt-in unit has an approved NO\textsubscript{X} Budget opt-in permit, the NO\textsubscript{X} Budget opt-in unit will be allocated NO\textsubscript{X} allowances in accordance with the following procedures:

(1) The heat input (in mmBtu) used for calculating NO\textsubscript{X} allowance allocations will be the lesser of:
   (i) The unit’s baseline heat input determined pursuant to § 97.84(c); or
   (ii) The unit’s heat input, as determined in accordance with part 75 of this chapter for the control period in the year prior to the year of the control period for which the NO\textsubscript{X} allocations are being calculated.

(2) The Administrator will allocate NO\textsubscript{X} allowances to the unit in an amount equaling the heat input determined under paragraph (b)(1) of this section multiplied by the lesser of the unit’s baseline NO\textsubscript{X} emissions rate determined under § 97.84(c) or the most stringent State or federal NO\textsubscript{X} emissions limitation applicable to the unit during the control period, divided by 2,000 lb/ton, and rounded to the nearest whole number of NO\textsubscript{X} allowances as appropriate.

Subpart J—Appeal Procedures

§ 97.90 Appeal procedures.

The appeal procedures for the NO\textsubscript{X} Budget Trading Program are set forth in part 78 of this chapter.

[69 FR 21648, Apr. 21, 2004]

Subpart AA—CAIR NO\textsubscript{X} Annual Trading Program General Provisions

§ 97.101 Purpose.

This subpart and subparts BB through II set forth the general provisions and the designated representative, permitting, allowance, monitoring, and opt-in provisions for the Federal Clean Air Interstate Rule (CAIR) NO\textsubscript{X} Annual Trading Program, under section 110 of the Clean Air Act and §52.35 of this chapter, as a means of mitigating interstate transport of fine particulates and nitrogen oxides.

§ 97.102 Definitions.

The terms used in this subpart and subparts BB through II shall have the meanings set forth in this section as follows:

Account number means the identification number given by the Administrator to each CAIR NO\textsubscript{X} Allowance Tracking System account.

Acid Rain emissions limitation means a limitation on emissions of sulfur dioxide or nitrogen oxides under the Acid Rain Program.

Acid Rain Program means a multi-state sulfur dioxide and nitrogen oxides air pollution control and emission reduction program established by the Administrator under title IV of the CAA and parts 72 through 78 of this chapter.

Actual weighted average NO\textsubscript{X} emission rate means, for a NO\textsubscript{X} averaging plan under §76.11 of this chapter and for a year:

(1) The sum of the products of the actual annual average NO\textsubscript{X} emission rate and actual annual heat input (as determined in accordance with part 75 of this chapter) for all units in the NO\textsubscript{X} averaging plan for the year; divided by

(2) The sum of the actual annual heat input (as determined in accordance with part 75 of this chapter) for all
units in the NO\textsubscript{X} averaging plan for the year.

Administrator means the Administrator of the United States Environmental Protection Agency or the Administrator's duly authorized representative.

Allocate or allocation means, with regard to CAIR NO\textsubscript{X} allowances, the determination by a permitting authority or the Administrator of the amount of such CAIR NO\textsubscript{X} allowances to be initially credited to a CAIR NO\textsubscript{X} unit, a new unit set-aside, or other entity.

Allowance transfer deadline means, for a control period, midnight of March 1 (if it is a business day), or midnight of the first business day thereafter (if March 1 is not a business day), immediately following the control period and is the deadline by which a CAIR NO\textsubscript{X} allowance transfer must be submitted for recordation in a CAIR NO\textsubscript{X} source's compliance account in order to be used to meet the source's CAIR NO\textsubscript{X} emissions limitation for such control period in accordance with §97.154.

Alternate CAIR designated representative means, for a CAIR NO\textsubscript{X} source and each CAIR NO\textsubscript{X} unit at the source, the natural person who is authorized by the owners and operators of the source and all such units at the source, in accordance with subparts BB and II of this part, to act on behalf of the CAIR designated representative in matters pertaining to the CAIR NO\textsubscript{X} Annual Trading Program. If the CAIR NO\textsubscript{X} source is also a CAIR NO\textsubscript{X} Ozone Season source, then this natural person shall be the same person as the alternate CAIR designated representative under the CAIR NO\textsubscript{X} Ozone Season Trading Program. If the CAIR NO\textsubscript{X} source is also subject to the Acid Rain Program, then this natural person shall be the same person as the alternate designated representative under the Acid Rain Program. If the CAIR NO\textsubscript{X} source is also subject to the Hg Budget Trading Program, then this natural person shall be the same person as the alternate Hg designated representative under the Hg Budget Trading Program.

Automated data acquisition and handling system or DAHS means that component of the continuous emission monitoring system, or other emissions monitoring system approved for use under subpart HH of this part, designed to interpret and convert individual output signals from pollutant concentration monitors, flow monitors, diluent gas monitors, and other component parts of the monitoring system to produce a continuous record of the measured parameters in the measurement units required by subpart HH of this part.

Biomass means—

(1) Any organic material grown for the purpose of being converted to energy;

(2) Any organic byproduct of agriculture that can be converted into energy; or

(3) Any material that can be converted into energy and is nonmerchantable for other purposes, that is segregated from other nonmerchantable material, and that is:

(i) A forest-related organic resource, including mill residues, precommercial thinnings, slash, brush, or byproduct from conversion of trees to merchantable material; or

(ii) A wood material, including pallets, crates, dunnage, manufacturing and construction materials (other than pressure-treated, chemically-treated, or painted wood products), and landscape or right-of-way tree trimmings.

Boiler means an enclosed fossil- or other-fuel-fired combustion device used to produce heat and to transfer heat to recirculating water, steam, or other medium.

Bottoming-cycle cogeneration unit means a cogeneration unit in which the energy input to the unit is first used to produce useful thermal energy and at least some of the reject heat from the useful thermal energy application or process is then used for electricity production.

CAIR authorized account representative means, with regard to a general account, a responsible natural person who is authorized, in accordance with subparts BB, FF, and II of this part, to transfer and otherwise dispose of CAIR...
NO\(_X\) allowances held in the general account and, with regard to a compliance account, the CAIR designated representative of the source.

CAIR designated representative means, for a CAIR NO\(_X\) source and each CAIR NO\(_X\) unit at the source, the natural person who is authorized by the owners and operators of the source and all such units at the source, in accordance with subparts BB and II of this part, to represent and legally bind each owner and operator in matters pertaining to the CAIR NO\(_X\) Annual Trading Program. If the CAIR NO\(_X\) source is also a CAIR SO\(_2\) source, then this natural person shall be the same person as the CAIR designated representative under the CAIR SO\(_2\) Trading Program. If the CAIR NO\(_X\) source is also a CAIR NO\(_X\) Ozone Season source, then this natural person shall be the same person as the CAIR designated representative under the CAIR NO\(_X\) Ozone Season Trading Program. If the CAIR NO\(_X\) source is also subject to the Acid Rain Program, then this natural person shall be the same person as the CAIR designated representative under the Acid Rain Program. If the CAIR NO\(_X\) source is also a CAIR NO\(_X\) Ozone Season source, then this natural person shall be the same person as the CAIR designated representative under the Acid Rain Program. If the CAIR NO\(_X\) source is also subject to the Hg Budget Trading Program, then this natural person shall be the same person as the Hg designated representative under the Hg Budget Trading Program.

CAIR NO\(_X\) allowance means a limited authorization issued by a permitting authority or the Administrator under subpart EE of this part or §97.188, or under provisions of a State implementation plan that are approved under §51.123(o)(1) or (2) or (p) of this chapter, to emit one ton of nitrogen oxides during a control period of the specified calendar year for which the authorization is allocated or of any calendar year thereafter under the CAIR NO\(_X\) Program. An authorization to emit nitrogen oxides that is not issued under subpart EE of this part, §97.188, or provisions of a State implementation plan that are approved under §51.123(o)(1) or (2) or (p) of this chapter shall not be a CAIR NO\(_X\) allowance.

CAIR NO\(_X\) allowance deduction or deduct CAIR NO\(_X\) allowances means the permanent withdrawal of CAIR NO\(_X\) allowances by the Administrator from a compliance account, e.g., in order to account for a specified number of tons of total nitrogen oxides emissions from all CAIR NO\(_X\) units at a CAIR NO\(_X\) source for a control period, determined in accordance with subpart HH of this part, or to account for excess emissions.

CAIR NO\(_X\) Allowance Tracking System means the system by which the Administrator records allocations, deductions, and transfers of CAIR NO\(_X\) allowances under the CAIR NO\(_X\) Annual Trading Program. Such allowances will be allocated, held, deducted, or transferred only as whole allowances.

CAIR NO\(_X\) Allowance Tracking System account means an account in the CAIR NO\(_X\) Allowance Tracking System established by the Administrator for purposes of recording the allocation, holding, transferring, or deducting of CAIR NO\(_X\) allowances.

CAIR NO\(_X\) allowances held or hold CAIR NO\(_X\) allowances means the CAIR NO\(_X\) allowances recorded by the Administrator, or submitted to the Administrator for recordation, in accordance with subparts FF, GG, and II of this part, in a CAIR NO\(_X\) Allowance Tracking System account.

CAIR NO\(_X\) Annual Trading Program means a multi-state nitrogen oxides air pollution control and emission reduction program established by the Administrator in accordance with subparts AA through II of this part and §§51.123(p) and 52.35 of this chapter or approved and administered by the Administrator in accordance with subparts AA through II of part 96 of this chapter and §51.123(o)(1) or (2) of this chapter, as a means of mitigating interstate transport of fine particulates and nitrogen oxides.

CAIR NO\(_X\) emissions limitation means, for a CAIR NO\(_X\) source, the tonnage equivalent, in NO\(_X\) emissions in a control period, of the CAIR NO\(_X\) allowances available for deduction for the source under §97.154(a) and (b) for the control period.

CAIR NO\(_X\) Ozone Season source means a source that is subject to the CAIR NO\(_X\) Ozone Season Trading Program.

CAIR NO\(_X\) Ozone Season Trading Program means a multi-state nitrogen oxides air pollution control and emission reduction program established by the Environmental Protection Agency § 97.102
Administrator in accordance with subparts AAAA through IIII of this part and §§51.123(ee) and 52.35 of this chapter or approved and administered by the Administrator in accordance with subparts AAAA through IIII of part 96 and §§51.123(aa)(1) or (2) (and (bb)(1), (bb)(2), or (dd) of this chapter, as a means of mitigating interstate transport of ozone and nitrogen oxides.

CAIR NOX source means a source that includes one or more CAIR NOX units.

CAIR NOX unit means a unit that is subject to the CAIR NOX Annual Trading Program under §97.104 and, except for purposes of §97.105 and subpart EE of this part, a CAIR NOX opt-in unit under subpart II of this part.

CAIR permit means the legally binding and federally enforceable written document, or portion of such document, issued by the permitting authority under subpart CC of this part, including any permit revisions, specifying the CAIR NOX Annual Trading Program requirements applicable to a CAIR NOX source, to each CAIR NOX unit at the source, and to the owners and operators and the CAIR designated representative of the source and each such unit.

CAIR SO2 source means a source that is subject to the CAIR SO2 Trading Program.

CAIR SO2 Trading Program means a multi-state sulfur dioxide air pollution control and emission reduction program established by the Administrator in accordance with subparts AAA through III of this part and §§51.124(r) and 52.36 of this chapter or approved and administered by the Administrator in accordance with subparts AAA through III of part 96 of this chapter and §§51.124(o)(1) or (2) of this chapter, as a means of mitigating interstate transport of fine particulates and sulfur dioxide.

Certifying official means:

(1) For a corporation, a president, secretary, treasurer, or vice-president or the corporation in charge of a principal business function or any other person who performs similar policy or decision-making functions for the corporation;

(2) For a partnership or sole proprietorship, a general partner or the proprietor respectively; or

(3) For a local government entity or State, Federal, or other public agency, a principal executive officer or ranking elected official.

Clean Air Act or CAA means the Clean Air Act, 42 U.S.C. 7401, et seq.

Coal means any solid fuel classified as anthracite, bituminous, subbituminous, or lignite.

Coal-derived fuel means any fuel (whether in a solid, liquid, or gaseous state) produced by the mechanical, thermal, or chemical processing of coal.

Coal-fired means:

(1) Except for purposes of subpart EE of this part, combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of any other fuel, during any year; or

(2) For purposes of subpart EE of this part, combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of any other fuel, during a specified year.

Cogeneration unit means a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine:

(1) Having equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy; and

(2) Producing during the 12-month period starting on the date the unit first produces electricity and during any calendar year after the calendar year in which the unit first produces electricity—

(i) For a topping-cycle cogeneration unit, (A) Useful thermal energy not less than 5 percent of total energy output; and

(B) Useful power that, when added to one-half of useful thermal energy produced, is not less than 42.5 percent of total energy input, if useful thermal energy produced is 15 percent or more of total energy input, or not less than 45 percent of total energy input, if useful thermal energy produced is less than 15 percent of total energy output.

(ii) For a bottoming-cycle cogeneration unit, useful power not less than 45 percent of total energy input;

(3) Provided that the total energy input under paragraphs (2)(i) and (2)(ii) of this definition shall equal the
unit’s total energy input from all fuel except biomass if the unit is a boiler.

Combustion turbine means:

(1) An enclosed device comprising a compressor, a combustor, and a turbine and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine; and

(2) If the enclosed device under paragraph (1) of this definition is combined cycle, any associated duct burner, heat recovery steam generator, and steam turbine.

Commence commercial operation means, with regard to a unit:

(1) To have begun to produce steam, gas, or other heated medium used to generate electricity for sale or use, including test generation, except as provided in §97.105 and §97.184(h).

(i) For a unit that is a CAIR NOₓ unit under §97.104 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the replaced unit’s date of commencement of commercial operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of commercial operation as defined in paragraph (1) or (2) of this definition as appropriate.

(ii) For a unit that is a CAIR NOₓ unit under §97.104 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition, such date shall remain the date of commencement of operation of the unit, which shall continue to be treated as the same unit.

(ii) For a unit that undergoes a physical change (other than replacement of the unit by a unit at the same source) after the date the unit commences operation as defined in paragraph (1) of this definition, such date shall remain the date of commencement of operation of the unit, which shall continue to be treated as the same unit.

(2) Notwithstanding paragraph (1) of this definition and except as provided in §97.105, for a unit that is not a CAIR NOₓ unit under §97.104 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition, the unit’s date for commencement of commercial operation shall be the date on which the unit becomes a CAIR NOₓ unit under §97.104.

(i) For a unit with a date for commencement of commercial operation as defined in paragraph (2) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the date of commencement of commercial operation of the unit, which shall continue to be treated as the same unit.

Common stack means a single flue through which emissions from 2 or more units are exhausted.

Compliance account means a CAIR NOₓ Allowance Tracking System account, established by the Administrator for a CAIR NOₓ source under subpart FF or II of this part, in which
any CAIR NO\textsubscript{X} allowance allocations for the CAIR NO\textsubscript{X} units at the source are initially recorded and in which are held any CAIR NO\textsubscript{X} allowances available for use for a control period in order to meet the source’s CAIR NO\textsubscript{X} emissions limitation in accordance with §97.154.

Continuous emission monitoring system or CEMS means the equipment required under subpart HH of this part to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of nitrogen oxides emissions, stack gas volumetric flow rate, stack gas moisture content, and oxygen or carbon dioxide concentration (as applicable), in a manner consistent with part 75 of this chapter. The following systems are the principal types of continuous emission monitoring systems required under subpart HH of this part:

(1) A flow monitoring system, consisting of a stack flow rate monitor and an automated data acquisition and handling system and providing a permanent, continuous record of stack gas volumetric flow rate, in standard cubic feet per hour (scfh);

(2) A nitrogen oxides concentration monitoring system, consisting of a NO\textsubscript{X} pollutant concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of NO\textsubscript{X} emissions, in parts per million (ppm);

(3) A nitrogen oxides emission rate (or NO\textsubscript{X}-diluent) monitoring system, consisting of a NO\textsubscript{X} pollutant concentration monitor, a diluent gas (CO\textsubscript{2} or O\textsubscript{2}) monitor, and an automated data acquisition and handling system and providing a permanent, continuous record of NO\textsubscript{X} concentration, in parts per million (ppm), diluent gas concentration, in percent CO\textsubscript{2} or O\textsubscript{2}, and NO\textsubscript{X} emission rate, in pounds per million British thermal units (lb/mmBtu);

(4) A moisture monitoring system, as defined in §75.11(b)(2) of this chapter and providing a permanent, continuous record of the stack gas moisture content, in percent H\textsubscript{2}O.

(5) A carbon dioxide monitoring system, consisting of a CO\textsubscript{2} pollutant concentration monitor (or an oxygen monitor plus suitable mathematical equations from which the CO\textsubscript{2} concentration is derived) and an automated data acquisition and handling system and providing a permanent, continuous record of CO\textsubscript{2} emissions, in percent CO\textsubscript{2}; and

(6) An oxygen monitoring system, consisting of an O\textsubscript{2} concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of O\textsubscript{2}, in percent O\textsubscript{2}.

Control period means the period beginning January 1 of a calendar year, except as provided in §97.106(c)(2), and ending on December 31 of the same year, inclusive.

Emissions means air pollutants exhausted from a unit or source into the atmosphere, as measured, recorded, and reported to the Administrator by the CAIR designated representative and as determined by the Administrator in accordance with subpart HH of this part.

Excess emissions means any ton of nitrogen oxides emitted by the CAIR NO\textsubscript{X} units at a CAIR NO\textsubscript{X} source during a control period that exceeds the CAIR NO\textsubscript{X} emissions limitation for the source.

Fossil fuel means natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material.

Fossil-fuel-fired means, with regard to a unit, combusting any amount of fossil fuel in any calendar year.

Fuel oil means any petroleum-based fuel (including diesel fuel or petroleum derivatives such as oil tar) and any recycled or blended petroleum products or petroleum by-products used as a fuel whether in a liquid, solid, or gaseous state.

General account means a CAIR NO\textsubscript{X} Allowance Tracking System account, established under subpart FF of this part, that is not a compliance account.

Generator means a device that produces electricity.

Gross electrical output means, with regard to a cogeneration unit, electricity made available for use, including any such electricity used in the power production process (which process includes, but is not limited to, any onsite processing or treatment of fuel
Heat input means, with regard to a specified period of time, the product (in mmBtu/time) of the gross calorific value of the fuel (in Btu/lb) divided by 1,000,000 Btu/mmBtu and multiplied by the fuel feed rate into a combustion device (in lb of fuel/time), as measured, recorded, and reported to the Administrator by the CAIR designated representative and determined by the Administrator in accordance with subpart HH of this part and excluding the heat derived from preheated combustion air, recirculated flue gases, or exhaust from other sources.

Heat input rate means the amount of heat input (in mmBtu) divided by unit operating time (in hr) or, with regard to a specific fuel, the amount of heat input attributed to the fuel (in mmBtu) divided by the unit operating time (in hr) during which the unit combusts the fuel.

Hg Budget Trading Program means a multi-state Hg air pollution control and emission reduction program approved and administered by the Administrator in accordance with subpart HHHH of part 60 of this chapter and § 60.24(h)(6), or established by the Administrator under section 111 of the Clean Air Act, as a means of reducing national Hg emissions.

Life-of-the-unit, firm power contractual arrangement means a unit participation power sales agreement under which a utility or industrial customer reserves, or is entitled to receive, a specified amount or percentage of nameplate capacity and associated energy generated by any specified unit and pays its proportional amount of such unit’s total costs, pursuant to a contract:

1. For the life of the unit;
2. For a cumulative term of no less than 30 years, including contracts that permit an election for early termination; or
3. For a period no less than 25 years or 70 percent of the economic useful life of the unit determined as of the time the unit is built, with option rights to purchase or release some portion of the nameplate capacity and associated energy generated by the unit at the end of the period.

Maximum design heat input means the maximum amount of fuel per hour (in Btu/hr) that a unit is capable of combusting on a steady state basis as of the initial installation of the unit as specified by the manufacturer of the unit.

Monitoring system means any monitoring system that meets the requirements of subpart HH of this part, including a continuous emissions monitoring system, an alternative monitoring system, or an excepted monitoring system under part 75 of this chapter.

Most stringent State or Federal NO\textsubscript{X} emissions limitation means, with regard to a unit, the lowest NO\textsubscript{X} emissions limitation (in terms of lb/mmBtu) that is applicable to the unit under State or Federal law, regardless of the averaging period to which the emissions limitation applies.

Nameplate capacity means, starting from the initial installation of a generator, the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady state basis and during continuous operation (when not restricted by seasonal or other deratings) as specified by the manufacturer of the generator or, starting from the completion of any subsequent physical change in the generator resulting in an increase in the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady state basis and during continuous operation (when not restricted by seasonal or other deratings), such increased maximum amount as of such completion as specified by the person conducting the physical change.

Oil-fired means, for purposes of subpart EE of this part, combusting fuel oil for more than 15.0 percent of the annual heat input in a specified year and not qualifying as coal-fired.

Operator means any person who operates, controls, or supervises a CAIR NO\textsubscript{X} unit or a CAIR NO\textsubscript{X} source and shall include, but not be limited to, any holding company, utility system, or plant manager of such a unit or source.

Owner means any of the following persons:
(1) With regard to a CAIR NOₓ source or a CAIR NOₓ unit at a source, respectively:

(i) Any holder of any portion of the legal or equitable title in a CAIR NOₓ unit at the source or the CAIR NOₓ unit;

(ii) Any holder of a leasehold interest in a CAIR NOₓ unit at the source or the CAIR NOₓ unit; or

(iii) Any purchaser of power from a CAIR NOₓ unit at the source or the CAIR NOₓ unit under a life-of-the-unit, firm power contractual arrangement; provided that, unless expressly provided for in a leasehold agreement, owner shall not include a passive lessee, or a person who has an equitable interest through such lessee, whose rental payments are not based (either directly or indirectly) on the revenues or income from such CAIR NOₓ unit; or

(2) With regard to any general account, any person who has an ownership interest with respect to the CAIR NOₓ allowances held in the general account and who is subject to the binding agreement for the CAIR authorized account representative to represent the person’s ownership interest with respect to CAIR NOₓ allowances.

Permitting authority means the State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to issue or revise permits to meet the requirements of the CAIR NOₓ Annual Trading Program or, if no such agency has been so authorized, the Administrator.

Potential electrical output capacity means 33 percent of a unit’s maximum design heat input, divided by 3,413 Btu/kWh, divided by 1,000 kWh/MWh, and multiplied by 8,760 hr/yr.

Receive or receipt of means, when referring to the permitting authority or the Administrator, to come into possession of a document, information, or correspondence (whether sent in hard copy or by authorized electronic transmission), as indicated in an official log, or by a notation made on the document, information, or correspondence, by the permitting authority or the Administrator in the regular course of business.

Recordation, record, or recorded means, with regard to CAIR NOₓ allowances, the movement of CAIR NOₓ allowances by the Administrator into or between CAIR NOₓ Allowance Tracking System accounts, for purposes of allocation, transfer, or deduction.

Reference method means any direct test method of sampling and analyzing for an air pollutant as specified in §75.22 of this chapter.

Replacement, replace, or replaced means, with regard to a unit, the demolishing of a unit, or the permanent shutdown and permanent disabling of a unit, and the construction of another unit (the replacement unit) to be used instead of the demolished or shutdown unit (the replaced unit).

Repowered means, with regard to a unit, replacement of a coal-fired boiler with one of the following coal-fired technologies at the same source as the coal-fired boiler:

(1) Atmospheric or pressurized fluidized bed combustion;

(2) Integrated gasification combined cycle;

(3) Magnetohydrodynamics;

(4) Direct and indirect coal-fired turbines;

(5) Integrated gasification fuel cells; or

(6) As determined by the Administrator in consultation with the Secretary of Energy, a derivative of one or more of the technologies under paragraphs (1) through (5) of this definition and any other coal-fired technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of January 1, 2005.

Sequential use of energy means:

(1) For a topping-cycle cogeneration unit, the use of reject heat from electricity production in a useful thermal energy application or process; or

(2) For a bottoming-cycle cogeneration unit, the use of reject heat from useful thermal energy application or process in electricity production.

Serial number means, for a CAIR NOₓ allowance, the unique identification number assigned to each CAIR NOₓ allowance by the Administrator.

Solid waste incineration unit means a stationary, fossil-fuel-fired boiler or
stationary, fossil-fuel-fired combustion turbine that is a “solid waste incineration unit” as defined in section 129(g)(1) of the Clean Air Act.

*Source* means all buildings, structures, or installations located in one or more contiguous or adjacent properties under common control of the same person or persons. For purposes of section 502(c) of the Clean Air Act, a “source,” including a “source” with multiple units, shall be considered a single “facility.”

*State* means one of the States or the District of Columbia that is subject to the CAIR NOX Annual Trading Program pursuant to §52.35 of this chapter.

*Submit or serve* means to send or transmit a document, information, or correspondence to the person specified in accordance with the applicable regulation:

1. In person;
2. By United States Postal Service; or
3. By other means of dispatch or transmission and delivery. Compliance with any “submission” or “service” deadline shall be determined by the date of dispatch, transmission, or mailing and not the date of receipt.

*Title V operating permit* means a permit issued under title V of the Clean Air Act and part 70 or part 71 of this chapter.

*Title V operating permit regulations* means the regulations that the Administrator has approved or issued as meeting the requirements of title V of the Clean Air Act and part 70 or 71 of this chapter.

*Ton* means 2,000 pounds. For the purpose of determining compliance with the CAIR NOX emissions limitation, total tons of nitrogen oxides emissions for a control period shall be calculated as the sum of all recorded hourly emissions (or the mass equivalent of the recorded hourly emission rates) in accordance with subpart HH of this part, but with any remaining fraction of a ton equal to or greater than 0.50 tons deemed to equal one ton and any remaining fraction of a ton less than 0.50 tons deemed to equal zero tons.

*Topping-cycle cogeneration unit* means a cogeneration unit in which the energy input to the unit is first used to produce useful power, including electricity, and at least some of the reject heat from the electricity production is then used to provide useful thermal energy.

*Total energy input* means, with regard to a cogeneration unit, total energy of all forms supplied to the cogeneration unit, excluding energy produced by the cogeneration unit itself. Each form of energy supplied shall be measured by the lower heating value of that form of energy calculated as follows:

\[
LHV = HHV - 10.55(W + 9H)
\]

Where:

- \( LHV \) = lower heating value of fuel in Btu/lb,
- \( HHV \) = higher heating value of fuel in Btu/lb,
- \( W \) = Weight % of moisture in fuel, and
- \( H \) = Weight % of hydrogen in fuel.

*Total energy output* means, with regard to a cogeneration unit, the sum of useful power and useful thermal energy produced by the cogeneration unit.

*Unit* means a stationary, fossil-fuel-fired boiler or combustion turbine or other stationary, fossil-fuel-fired combustion device.

*Unit operating day* means a calendar day in which a unit combusts any fuel.

*Unit operating hour* or *hour of unit operation* means an hour in which a unit combusts any fuel.

*Useful power* means, with regard to a cogeneration unit, electricity or mechanical energy made available for use, excluding any such energy used in the power production process (which process includes, but is not limited to, any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls).

*Useful thermal energy* means, with regard to a cogeneration unit, thermal energy that is:

1. Made available to an industrial or commercial process (not a power production process), excluding any heat contained in condensate return or makeup water;
2. Used in a heating application (e.g., space heating or domestic hot water heating); or
3. Used in a space cooling application (i.e., thermal energy used by an absorption chiller).

*Utility power distribution system* means the portion of an electricity grid owned
§ 97.103 Measurements, abbreviations, and acronyms.

Measurements, abbreviations, and acronyms used in this subpart and subparts BB through II are defined as follows:

Btu—British thermal unit
CO$_2$—carbon dioxide
H$_2$O—water
Hg—mercury
hr—hour
kW—kilowatt electrical
kWh—kilowatt hour
lb—pound
mmBtu—million Btu
MWe—megawatt electrical
MWh—megawatt hour
NO$_X$—nitrogen oxides
O$_2$—oxygen
ppm—parts per million
scfh—standard cubic feet per hour
SO$_2$—sulfur dioxide
yr—year

§ 97.104 Applicability

(a) Except as provided in paragraph (b) of this section:

(1) The following units in a State shall be CAIR NO$_X$ units, and any source that includes one or more such units shall be a CAIR NO$_X$ source, subject to the requirements of this subpart and subparts BB through HH of this part: any stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine serving at any time, since the later of November 15, 1990 or the start-up of the unit’s combustion chamber, a generator with nameplate capacity of more than 25 MWe producing electricity for sale.

(2) If a stationary boiler or stationary combustion turbine that, under paragraph (a)(1) of this section, is not a CAIR NO$_X$ unit begins to combust fossil fuel or to serve a generator with nameplate capacity of more than 25 MWe producing electricity for sale, the unit shall become a CAIR NO$_X$ unit as provided in paragraph (a)(1) of this section on the first date on which it both combusts fossil fuel and serves such generator.

(b) The units in a State that meet the requirements set forth in paragraph (b)(1)(i), (b)(2)(i), or (b)(2)(ii) of this section shall not be CAIR NO$_X$ units:

(1)(i) Any unit that is a CAIR NO$_X$ unit under paragraph (a)(1) or (2) of this section:

(A) Qualifying as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and continuing to qualify as a cogeneration unit; and

(B) Not serving at any time, since the later of November 15, 1990 or the start-up of the unit’s combustion chamber, a generator with nameplate capacity of more than 25 MWe supplying in any calendar year more than one-third of the unit’s potential electric output capacity or 219,000 MWh, whichever is greater, to any utility power distribution system for sale.

(ii) If a unit qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and meets the requirements of paragraphs (b)(1)(i) of this section for at least one calendar year, but subsequently no longer meets all such requirements, the unit shall become a CAIR NO$_X$ unit starting on the earlier of January 1 after the first calendar year during which the unit first no longer qualifies as a cogeneration unit or January 1 after the first calendar year during which the unit no longer meets the requirements of paragraph (b)(1)(i)(B) of this section.

(2)(i) Any unit that is a CAIR NO$_X$ unit under paragraph (a)(1) or (2) of this section commencing operation before January 1, 1985:

(A) Qualifying as a solid waste incineration unit; and

(B) With an average annual fuel consumption of non-fossil fuel for 1985–1987 exceeding 80 percent (on a Btu basis) and an average annual fuel consumption of non-fossil fuel for any 3 consecutive calendar years after 1990 exceeding 80 percent (on a Btu basis).

(ii) Any unit that is a CAIR NO$_X$ unit under paragraph (a)(1) or (2) of this section commencing operation on or after January 1, 1985:

(A) Qualifying as a solid waste incineration unit; and
(B) With an average annual fuel consumption of non-fossil fuel for the first 3 calendar years of operation exceeding 80 percent (on a Btu basis) and an average annual fuel consumption of non-fossil fuel for any 3 consecutive calendar years after 1990 exceeding 80 percent (on a Btu basis).

(iii) If a unit qualifies as a solid waste incineration unit and meets the requirements of paragraph (b)(2)(i) or (ii) of this section for at least 3 consecutive calendar years, but subsequently no longer meets all such requirements, the unit shall become a CAIR NO\textsubscript{X} unit starting on the earlier of January 1 after the first calendar year during which the unit first no longer qualifies as a solid waste incineration unit or January 1 after the first 3 consecutive calendar years after 1990 for which the unit has an average annual fuel consumption of fossil fuel of 20 percent or more.

(c) A certifying official of an owner or operator of any unit may petition the Administrator at any time for a determination concerning the applicability, under paragraphs (a) and (b) of this section, of the CAIR NO\textsubscript{X} Annual Trading Program to the unit.

(1) Petition content. The petition shall be in writing and include the identification of the unit and the relevant facts about the unit. The petition and any other documents provided to the Administrator in connection with the petition shall include the following certification statement, signed by the certifying official: “I am authorized to make this submission on behalf of the owners and operators of the unit for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(2) Submission. The petition and any other documents provided in connection with the petition shall be submitted to the Director of the Clean Air Markets Division (or its successor), U.S. Environmental Protection Agency, who will act on the petition as the Administrator’s duly authorized representative.

(3) Response. The Administrator will issue a written response to the petition and may request supplemental information relevant to such petition. The Administrator’s determination concerning the applicability, under paragraphs (a) and (b) of this section, of the CAIR NO\textsubscript{X} Annual Trading Program to the unit shall be binding on the permitting authority unless the petition or other information or documents provided in connection with the petition are found to have contained significant, relevant errors or omissions.

§ 97.105 Retired unit exemption.

(a)(1) Any CAIR NO\textsubscript{X} unit that is permanently retired and is not a CAIR NO\textsubscript{X} opt-in unit under subpart II of this part shall be exempt from the CAIR NO\textsubscript{X} Annual Trading Program, except for the provisions of this section, §§97.102, 97.103, 97.104, 97.106(c)(4) through (7), 97.107, 97.108, and subparts BB and EE through GG of this part.

(2) The exemption under paragraph (a)(1) of this section shall become effective the day on which the CAIR NO\textsubscript{X} unit is permanently retired. Within 30 days of the unit’s permanent retirement, the CAIR designated representative shall submit a statement to the permitting authority otherwise responsible for administering any CAIR permit for the unit and shall submit a copy of the statement to the Administrator. The statement shall state, in a format prescribed by the permitting authority, that the unit was permanently retired on a specific date and will comply with the requirements of paragraph (b) of this section.

(3) After receipt of the statement under paragraph (a)(2) of this section, the permitting authority will amend any permit under subpart CC of this part covering the source at which the unit is located to add the provisions and requirements of the exemption.
under paragraphs (a)(1) and (b) of this section.

(b) Special provisions. (1) A unit exempt under paragraph (a) of this section shall not emit any nitrogen oxides, starting on the date that the exemption takes effect.

(2) The Administrator or the permitting authority will allocate CAIR NO\textsubscript{X} allowances under subpart EE of this part to a unit exempt under paragraph (a) of this section.

(3) For a period of 5 years from the date the records are created, the owners and operators of a unit exempt under paragraph (a) of this section shall retain, at the source that includes the unit, records demonstrating that the unit is permanently retired. The 5-year period for keeping records may be extended for cause, at any time before the end of the period, in writing by the permitting authority or the Administrator. The owners and operators bear the burden of proof that the unit is permanently retired.

(4) The owners and operators and, to the extent applicable, the CAIR designated representative of a unit exempt under paragraph (a) of this section shall comply with the requirements of the CAIR NO\textsubscript{X} Annual Trading Program concerning all periods for which the exemption is not in effect, even if such requirements arise, or must be complied with, after the exemption takes effect.

(5) A unit exempt under paragraph (a) of this section and located at a source that is required, or but for this exemption would be required, to have a title V operating permit shall not resume operation unless the CAIR designated representative of the source submits a complete CAIR permit application under §97.122 for the unit no less than 18 months (or such lesser time provided by the permitting authority) before the later of January 1, 2009 or the date on which the unit resumes operation.

(6) On the earlier of the following dates, a unit exempt under paragraph (a) of this section shall lose its exemption:

(i) The date on which the CAIR designated representative submits a CAIR permit application for the unit under paragraph (b)(5) of this section;

(ii) The date on which the CAIR designated representative is required under paragraph (b)(5) of this section to submit a CAIR permit application for the unit; or

(iii) The date on which the unit resumes operation, if the CAIR designated representative is not required to submit a CAIR permit application for the unit.

(7) For the purpose of applying monitoring, reporting, and recordkeeping requirements under subpart HH of this part, a unit that loses its exemption under paragraph (a) of this section shall be treated as a unit that commences commercial operation on the first date on which the unit resumes operation.

§97.106 Standard requirements.

(a) Permit requirements. (1) The CAIR designated representative of each CAIR NO\textsubscript{X} source required to have a title V operating permit and each CAIR NO\textsubscript{X} unit required to have a title V operating permit at the source shall:

(i) Submit to the permitting authority a complete CAIR permit application under §97.122 in accordance with the deadlines specified in §97.121; and

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review a CAIR permit application and issue or deny a CAIR permit.

(2) The owners and operators of each CAIR NO\textsubscript{X} source required to have a title V operating permit and each CAIR NO\textsubscript{X} unit required to have a title V operating permit at the source shall:

(i) Submit to the permitting authority a complete CAIR permit application under §97.122 in accordance with the deadlines specified in §97.121; and

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review a CAIR permit application and issue or deny a CAIR permit.

(3) Except as provided in subpart II of this part, the owners and operators of a CAIR NO\textsubscript{X} source that is not otherwise required to have a title V operating permit and each CAIR NO\textsubscript{X} unit that is not otherwise required to have a title V operating permit are not required to submit a CAIR permit application, and to have a CAIR permit, under subpart CC of this part for such CAIR NO\textsubscript{X} source and such CAIR NO\textsubscript{X} unit.
(b) Monitoring, reporting, and recordkeeping requirements. (1) The owners and operators, and the CAIR designated representative, of each CAIR NO\textsubscript{X} source and each CAIR NO\textsubscript{X} unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of subpart HH of this part.

(2) The emissions measurements recorded and reported in accordance with subpart HH of this part shall be used to determine compliance by each CAIR NO\textsubscript{X} source with the CAIR NO\textsubscript{X} limitations under paragraph (c) of this section.

(c) Nitrogen oxides emission requirements. (1) As of the allowance transfer deadline for a control period, the owners and operators of each CAIR NO\textsubscript{X} source and each CAIR NO\textsubscript{X} unit at the source shall hold, in the source’s compliance account, CAIR NO\textsubscript{X} allowances available for compliance deductions for the control period under §97.154(a) in an amount not less than the tons of total nitrogen oxides emissions for the control period from all CAIR NO\textsubscript{X} units at the source, as determined in accordance with subpart HH of this part.

(2) A CAIR NO\textsubscript{X} unit shall be subject to the requirements under paragraph (c)(1) of this section for the control period starting on the later of January 1, 2009 or the deadline for meeting the unit’s monitor certification requirements under §97.170(b)(1), (2), or (5) and for each control period thereafter.

(3) A CAIR NO\textsubscript{X} allowance shall not be deducted, for compliance with the requirements under paragraph (c)(1) of this section, for a control period in a calendar year before the year for which the CAIR NO\textsubscript{X} allowance was allocated.

(4) CAIR NO\textsubscript{X} allowances shall be held in, deducted from, or transferred into or among CAIR NO\textsubscript{X} Allowance Tracking System accounts in accordance with subparts EE, FF, GG, and II of this part.

(5) A CAIR NO\textsubscript{X} allowance is a limited authorization to emit one ton of nitrogen oxides in accordance with the CAIR NO\textsubscript{X} Annual Trading Program. No provision of the CAIR NO\textsubscript{X} Annual Trading Program, the CAIR permit application, the CAIR permit, or an exemption under §97.165 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.

(6) A CAIR NO\textsubscript{X} allowance does not constitute a property right.

(7) Upon recordation by the Administrator under subpart EE, FF, GG, or II of this part, every allocation, transfer, or deduction of a CAIR NO\textsubscript{X} allowance to or from a CAIR NO\textsubscript{X} source’s compliance account is incorporated automatically in any CAIR permit of the source.

(d) Excess emissions requirements. If a CAIR NO\textsubscript{X} source emits nitrogen oxides during any control period in excess of the CAIR NO\textsubscript{X} emissions limitation, then:

(1) The owners and operators of the source and each CAIR NO\textsubscript{X} unit at the source shall surrender the CAIR NO\textsubscript{X} allowances required for deduction under §97.154(d)(1) and pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act or applicable State law; and

(2) Each ton of such excess emissions and each day of such control period shall constitute a separate violation of this subpart, the Clean Air Act, and applicable State law.

(e) Recordkeeping and reporting requirements. (1) Unless otherwise provided, the owners and operators of the CAIR NO\textsubscript{X} source and each CAIR NO\textsubscript{X} unit at the source shall keep on site at the source each of the following documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation under §97.113 changing the CAIR designated representative.

(i) The certificate of representation under §97.113 for the CAIR designated representative for the source and each CAIR NO\textsubscript{X} unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation under §97.113 changing the CAIR designated representative.

(ii) All emissions monitoring information, in accordance with subpart HH.
§ 97.107 Computation of time.

(a) Unless otherwise stated, any time period scheduled, under the CAIR NO\textsubscript{X} Annual Trading Program, to begin on the occurrence of an act or event shall begin on the day the act or event occurs.

(b) Unless otherwise stated, any time period scheduled, under the CAIR NO\textsubscript{X} Annual Trading Program, to begin before the occurrence of an act or event shall be computed so that the period ends the day before the act or event occurs.

(c) Unless otherwise stated, if the final day of any time period, under the CAIR NO\textsubscript{X} Annual Trading Program, falls on a weekend or a State or Federal holiday, the time period shall be extended to the next business day.

§ 97.108 Appeal procedures.

The appeal procedures for decisions of the Administrator under the CAIR NO\textsubscript{X} Annual Trading Program are set forth in part 78 of this chapter.

Subpart BB—CAIR Designated Representative for CAIR NO\textsubscript{X} Sources

§ 97.110 Authorization and responsibilities of CAIR designated representative.

(a) Except as provided under §97.111, each CAIR NO\textsubscript{X} source, including all CAIR NO\textsubscript{X} units at the source, shall have one and only one CAIR designated representative, with regard to all matters under the CAIR NO\textsubscript{X} Annual Trading Program concerning the source or any CAIR NO\textsubscript{X} unit at the source.

(b) The CAIR designated representative of the CAIR NO\textsubscript{X} source shall be selected by an agreement binding on the owners and operators of the source and all CAIR NO\textsubscript{X} units at the source.

(c) Upon receipt by the Administrator of a complete certificate of representation under §97.113, the CAIR designated representative of the source shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each owner and operator of the CAIR NO\textsubscript{X} source represented and each CAIR NO\textsubscript{X} unit at the source in all matters pertaining to the CAIR NO\textsubscript{X} Annual Trading Program, notwithstanding any agreement
between the CAIR designated representative and such owners and operators. The owners and operators shall be bound by any decision or order issued to the CAIR designated representative by the permitting authority, the Administrator, or a court regarding the source or unit.

d) No CAIR permit will be issued, no emissions data reports will be accepted, and no CAIR NO\textsubscript{X} Allowance Tracking System account will be established for a CAIR NO\textsubscript{X} unit at a source, until the Administrator has received a complete certificate of representation under §97.113 for a CAIR designated representative of the source and the CAIR NO\textsubscript{X} units at the source.

(e)(1) Each submission under the CAIR NO\textsubscript{X} Annual Trading Program shall be submitted, signed, and certified by the CAIR designated representative for each CAIR NO\textsubscript{X} source on behalf of which the submission is made. Each such submission shall include the following certification statement by the CAIR designated representative: “I am authorized to make this submission on behalf of the owners and operators of the source or units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(2) The permitting authority and the Administrator will accept or act on a submission made on behalf of owner or operators of a CAIR NO\textsubscript{X} source or a CAIR NO\textsubscript{X} unit only if the submission has been made, signed, and certified in accordance with paragraph (e)(1) of this section.

§97.111 Alternate CAIR designated representative.

(a) A certificate of representation under §97.113 may designate one and only one alternate CAIR designated representative, who may act on behalf of the CAIR designated representative. The agreement by which the alternate CAIR designated representative is selected shall include a procedure for authorizing the alternate CAIR designated representative to act in lieu of the CAIR designated representative.

(b) Upon receipt by the Administrator of a complete certificate of representation under §97.113, any representation, action, inaction, or submission by the alternate CAIR designated representative shall be deemed to be a representation, action, inaction, or submission by the CAIR designated representative.

(c) Except in this section and §§97.102, 97.110(a) and (d), 97.112, 97.113, 97.115, 97.151 and 97.182, whenever the term “CAIR designated representative” is used in subparts AA through II of this part, the term shall be construed to include the CAIR designated representative or any alternate CAIR designated representative.

§97.112 Changing CAIR designated representative and alternate CAIR designated representative; changes in owners and operators.

(a) Changing CAIR designated representative. The CAIR designated representative may be changed at any time upon receipt by the Administrator of a superseding complete certificate of representation under §97.113. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CAIR designated representative before the time and date when the Administrator receives the superseding certificate of representation shall be binding on the new CAIR designated representative and the owners and operators of the CAIR NO\textsubscript{X} source and the CAIR NO\textsubscript{X} units at the source.

(b) Changing alternate CAIR designated representative. The alternate CAIR designated representative may be changed at any time upon receipt by the Administrator of a superseding complete certificate of representation under
§ 97.113 Certificate of representation.

(a) A complete certificate of representation for a CAIR designated representative or an alternate CAIR designated representative shall include the following elements in a format prescribed by the Administrator:

(1) Identification of the CAIR NO\textsubscript{X} source, and each CAIR NO\textsubscript{X} unit at the source, for which the certificate of representation is submitted, including identification and nameplate capacity of each generator served by each such unit.

(2) The name, address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the CAIR designated representative and any alternate CAIR designated representative.

(3) A list of the owners and operators of the CAIR NO\textsubscript{X} source and of each CAIR NO\textsubscript{X} unit at the source.

(4) The following certification statements by the CAIR designated representative and any alternate CAIR designated representative—

(i) “I certify that I was selected as the CAIR designated representative or alternate CAIR designated representative, as applicable, by an agreement binding on the owners and operators of the source and each CAIR NO\textsubscript{X} unit at the source.”

(ii) “I certify that I have all the necessary authority to carry out my duties and responsibilities under the CAIR NO\textsubscript{X} Annual Trading Program on behalf of the owners and operators of the source and each CAIR NO\textsubscript{X} unit at the source and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions.”

(iii) “I certify that the owners and operators of the source and of each CAIR NO\textsubscript{X} unit at the source shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.”

(iv) Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, a CAIR NO\textsubscript{X} unit, or where a utility or industrial customer purchases power from a CAIR NO\textsubscript{X} unit under a life-of-the-unit, firm power contractual arrangement, I certify that: I have given a written notice of my selection as the ‘CAIR designated representative’ or ‘alternate CAIR designated representative’, as applicable, and of the agreement by which I was selected to each owner and operator of the source and of each CAIR NO\textsubscript{X} unit at the source; and CAIR NO\textsubscript{X} allowances and proceeds of transactions involving CAIR NO\textsubscript{X} allowances will be deemed to be held or distributed in proportion to each holder’s legal, equitable, leasehold, or contractual reservation or entitlement, except that, if such multiple holders have expressly provided for a different distribution of CAIR NO\textsubscript{X} allowances by contract, CAIR NO\textsubscript{X} allowances and proceeds of ...
transactions involving CAIR NO\textsubscript{X} allowances will be deemed to be held or distributed in accordance with the contract.”

(5) The signature of the CAIR designated representative and any alternate CAIR designated representative and the dates signed.

(b) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the certificate of representation shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

[65 FR 2727, Jan. 18, 2000, as amended at 71 FR 74795, Dec. 13, 2006]

§97.115 Delegation by CAIR designated representative and alternate CAIR designated representative.

(a) A CAIR designated representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under this part.

(b) An alternate CAIR designated representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under this part.

(c) In order to delegate authority to make an electronic submission to the Administrator in accordance with paragraph (a) or (b) of this section, the CAIR designated representative or alternate CAIR designated representative, as appropriate, must submit to the Administrator a notice of delegation, in a format prescribed by the Administrator, that includes the following elements:

(1) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of such CAIR designated representative or alternate CAIR designated representative;

(2) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of each such natural person (referred to as an “agent”);

(3) For each such natural person, a list of the type or types of electronic submissions under paragraph (a) or (b) of this section for which authority is delegated to him or her; and

(4) The following certification statements by such CAIR designated representative or alternate CAIR designated representative:

(i) “I agree that any electronic submission to the Administrator that is by an agent identified in this notice of delegation and of a type listed for such agent in this notice of delegation and that is made when I am a CAIR designated representative or alternate CAIR designated representative, as appropriate, and before this notice of delegation is superseded by another notice of delegation under 40 CFR 97.115(d) shall be deemed to be an electronic submission by me.”
(ii) “Until this notice of delegation is superseded by another notice of delegation under 40 CFR 97.115(d), I agree to maintain an e-mail account and to notify the Administrator immediately of any change in my e-mail address unless all delegation of authority by me under 40 CFR 97.115 is terminated.”

(d) A notice of delegation submitted under paragraph (c) of this section shall be effective, with regard to the CAIR designated representative or alternate CAIR designated representative identified in such notice, upon receipt of such notice by the Administrator and until receipt by the Administrator of a superseding notice of delegation submitted by such CAIR designated representative or alternate CAIR designated representative, as appropriate. The superseding notice of delegation may replace any previously identified agent, add a new agent, or eliminate entirely any delegation of authority.

(e) Any electronic submission covered by the certification in paragraph (c)(4)(i) of this section and made in accordance with a notice of delegation effective under paragraph (d) of this section shall be deemed to be an electronic submission by the CAIR designated representative or alternate CAIR designated representative submitting such notice of delegation.

Subpart CC—Permits

§ 97.120 General CAIR NOX Annual Trading Program permit requirements.

(a) For each CAIR NOX source required to have a title V operating permit or required, under subpart II of this part, to have a title V operating permit or other federally enforceable permit, such permit shall include a CAIR permit administered by the permitting authority for the title V operating permit or the federally enforceable permit as applicable. The CAIR portion of the title V permit or other federally enforceable permit as applicable shall be administered in accordance with the permitting authority’s title V operating permits regulations promulgated under part 70 or 71 of this chapter or the permitting authority’s regulations for other federally enforceable permits as applicable, except as provided otherwise by §97.105, this subpart, and subpart II of this part.

(b) Each CAIR permit shall contain, with regard to the CAIR NOX source and the CAIR NOX units at the source covered by the CAIR permit, all applicable CAIR NOX Annual Trading Program, CAIR NOX Ozone Season Trading Program, and CAIR SO2 Trading Program requirements and shall be a complete and separable portion of the title V operating permit or other federally enforceable permit under paragraph (a) of this section.

§ 97.121 Submission of CAIR permit applications.

(a) Duty to apply. The CAIR designated representative of any CAIR NOX source required to have a title V operating permit shall submit to the permitting authority a complete CAIR permit application under §97.122 for the source covering each CAIR NOX unit at the source at least 18 months (or such lesser time provided by the permitting authority) before the later of January 1, 2009 or the date on which the CAIR NOX unit commences commercial operation, except as provided in §97.183(a).

(b) Duty to reapply. For a CAIR NOX source required to have a title V operating permit, the CAIR designated representative shall submit a complete CAIR permit application under §97.122 for the source covering each CAIR NOX unit at the source to renew the CAIR permit in accordance with the permitting authority’s title V operating permits regulations addressing permit renewal, except as provided in §97.183(b).

§ 97.122 Information requirements for CAIR permit applications.

A complete CAIR permit application shall include the following elements concerning the CAIR NOX source for which the application is submitted, in a format prescribed by the permitting authority:

(a) Identification of the CAIR NOX source;

(b) Identification of each CAIR NOX unit at the CAIR NOX source; and

(c) The standard requirements under §97.106.
§ 97.123 CAIR permit contents and term.

(a) Each CAIR permit will contain, in a format prescribed by the permitting authority, all elements required for a complete CAIR permit application under §97.122.

(b) Each CAIR permit is deemed to incorporate automatically the definitions of terms under §97.102 and, upon recordation by the Administrator under subpart EE, FF, GG, or II of this part, every allocation, transfer, or deduction of a CAIR NO\textsubscript{X} allowance to or from the compliance account of the CAIR NO\textsubscript{X} source covered by the permit.

(c) The term of the CAIR permit will be set by the permitting authority, as necessary to facilitate coordination of the renewal of the CAIR permit with issuance, revision, or renewal of the CAIR NO\textsubscript{X} source’s title V operating permit or other federally enforceable permit as applicable.

§ 97.124 CAIR permit revisions.

Except as provided in §97.123(b), the permitting authority will revise the CAIR permit, as necessary, in accordance with the permitting authority’s title V operating permits regulations or the permitting authority’s regulations for other federally enforceable permits as applicable addressing permit revisions.

Subpart DD [Reserved]

Subpart EE—CAIR NO\textsubscript{X} Allowance Allocations

§ 97.140 State trading budgets.

The State trading budgets for annual allocations of CAIR NO\textsubscript{X} allowances for the control periods in 2009 through 2014 and in 2015 and thereafter are respectively as follows:

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<tr>
<th>State</th>
<th>State trading budget for 2009–2014 (tons)</th>
<th>State trading budget for 2015 and thereafter (tons)</th>
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<td>99,049</td>
<td>82,541</td>
</tr>
<tr>
<td>South Carolina</td>
<td>32,662</td>
<td>27,218</td>
</tr>
<tr>
<td>Tennessee</td>
<td>50,973</td>
<td>42,478</td>
</tr>
<tr>
<td>Texas</td>
<td>181,014</td>
<td>150,845</td>
</tr>
<tr>
<td>Virginia</td>
<td>36,074</td>
<td>30,062</td>
</tr>
<tr>
<td>West Virginia</td>
<td>74,220</td>
<td>61,850</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>40,759</td>
<td>33,966</td>
</tr>
<tr>
<td>Total</td>
<td>1,521,707</td>
<td>1,268,091</td>
</tr>
</tbody>
</table>

§ 97.141 Timing requirements for CAIR NO\textsubscript{X} allowance allocations.

(a) The Administrator will determine by order the CAIR NO\textsubscript{X} allowance allocations, in accordance with §97.142(a) and (b), for the control periods in 2009, 2010, 2011, 2012, 2013, and 2014.

(b) By July 31, 2011 and July 31 of each year thereafter, the Administrator will determine by order the CAIR NO\textsubscript{X} allowance allocations, in accordance with §97.142(a) and (b), for the control period in the fourth year after the year of the applicable deadline for determination under this paragraph.

(c) By July 31, 2009 and July 31 of each year thereafter, the Administrator will determine by order the CAIR NO\textsubscript{X} allowance allocations, in accordance with §97.142(a) and (c), and (d), for the control period in the year of the applicable deadline for determination under this paragraph.

(d) The Administrator will make available to the public each determination of CAIR NO\textsubscript{X} allowances under paragraph (a), (b), or (c) of this section and will provide an opportunity for submission of objections to the determination. Objections shall be limited to addressing whether the determination is in accordance with §97.142. Based on any such objections, the Administrator will adjust each determination to the extent necessary to ensure that it is in accordance with §97.142.
§ 97.142 CAIR NO\textsubscript{X} allowance allocations.

(a)(1) The baseline heat input (in mmBtu) used with respect to CAIR NO\textsubscript{X} allowance allocations under paragraph (b) of this section for each CAIR NO\textsubscript{X} unit will be:

(i) For units commencing operation before January 1, 2001 the average of the 3 highest amounts of the unit’s adjusted control period heat input for 2000 through 2004, with the adjusted control period heat input for each year calculated as follows:

(A) If the unit is coal-fired during the year, the unit’s control period heat input for such year is multiplied by 100 percent;

(B) If the unit is oil-fired during the year, the unit’s control period heat input for such year is multiplied by 60 percent; and

(C) If the unit is not subject to paragraph (a)(1)(i)(A) or (B) of this section, the unit’s control period heat input for such year is multiplied by 40 percent.

(ii) For units commencing operation on or after January 1, 2001 and operating each calendar year during a period of 5 or more consecutive calendar years, the average of the 3 highest amounts of the unit’s total converted control period heat input over the first such 5 years.

(2)(i) A unit’s control period heat input, and a unit’s status as coal-fired or oil-fired, for a calendar year under paragraph (a)(1)(i) of this section, and a unit’s total tons of NO\textsubscript{X} emissions during a calendar year under paragraph (c)(3) of this section, will be determined in accordance with part 75 of this chapter, to the extent the unit was otherwise subject to the requirements of part 75 of this chapter for the year, or will be based on the best available data reported to the Administrator for the unit (in a format prescribed by the Administrator), to the extent the unit was not otherwise subject to the requirements of part 75 of this chapter for the year.

(ii) A unit’s converted control period heat input for a calendar year specified under paragraph (a)(1)(ii) of this section equals:

(A) Except as provided in paragraph (a)(2)(ii)(B) or (C) of this section, the control period gross electrical output of the generator or generators served by the unit multiplied by 7,900 Btu/kWh, if the unit is coal-fired for the year, or 6,675 Btu/kWh, if the unit is not coal-fired for the year, and divided by 1,000,000 Btu/mmBtu, provided that if a generator is served by 2 or more units, then the gross electrical output of the generator will be attributed to each unit in proportion to the unit’s share of the total control period heat input of such units for the year;

(B) For a unit that is a boiler and has equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy, the total heat energy (in Btu) of the steam produced by the boiler during the control period divided by 0.8 and by 1,000,000 Btu/mmBtu; or

(C) For a unit that is a combustion turbine and has equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy, the control period gross electrical output of the enclosed device comprising the compressor, combustor, and turbine multiplied by 3,413 Btu/kWh, plus the total heat energy (in Btu) of the steam produced by any associated heat recovery steam generator during the control period divided by 0.8, and with the sum divided by 1,000,000 Btu/mmBtu.

(iii) Gross electrical output and total heat energy under paragraph (a)(2)(ii) of this section will be determined based on the best available data reported to the Administrator for the unit (in a format prescribed by the Administrator).

(3) The Administrator will determine what data are the best available data under paragraph (a)(2) of this section by weighing the likelihood that data are accurate and reliable and giving greater weight to data submitted to a governmental entity in compliance with legal requirements or substantiated by an independent entity.

(b)(1) For each control period in 2009 and thereafter, the Administrator will allocate to all CAIR NO\textsubscript{X} units in a State that have a baseline heat input (as determined under paragraph (a) of this section) a total amount of CAIR NO\textsubscript{X} allowances equal to 95 percent for
Environmental Protection Agency

§ 97.142

a control period during 2009 through 2014, and 97 percent for a control period during 2015 and thereafter, of the tons of NOX emissions in the applicable State trading budget under §97.140 (except as provided in paragraphs (d) and (e) of this section).

(2) The Administrator will allocate CAIR NOX allowances to each CAIR NOX unit under paragraph (b)(1) of this section in an amount determined by multiplying the total amount of CAIR NOX allowances allocated under paragraph (b)(1) of this section by the ratio of the baseline heat input of such CAIR NOX unit to the total amount of baseline heat input of all such CAIR NOX units in the State and rounding to the nearest whole allowance as appropriate.

(c) For each control period in 2009 and thereafter, the Administrator will allocate CAIR NOX allowances to CAIR NOX units in a State that are not allocated CAIR NOX allowances under paragraph (b) of this section because the units do not yet have a baseline heat input under paragraph (a) of this section or because the units have a baseline heat input but all CAIR NOX allowances available under paragraph (b) of this section for the control period are already allocated, in accordance with the following procedures:

(1) The Administrator will establish a separate new unit set-aside for each control period. Each new unit set-aside will be allocated CAIR NOX allowances equal to 5 percent for a control period in 2009 through 2014, and 3 percent for a control period in 2015 and thereafter, of the amount of tons of NOX emissions in the applicable State trading budget under §97.140.

(2) The CAIR designated representative of such a CAIR NOX unit may submit to the Administrator a request, in a format specified by the Administrator, to be allocated CAIR NOX allowances equal to the later of the control period in 2009 or the first control period after the control period in which the CAIR NOX unit commences commercial operation and until the first control period for which the unit is allocated CAIR NOX allowances under paragraph (b) of this section. A separate CAIR NOX allowance allocation request for each control period for which CAIR NOX allowances are sought must be submitted on or before May 1 of such control period and after the date on which the CAIR NOX unit commences commercial operation.

(3) In a CAIR NOX allowance allocation request under paragraph (c)(2) of this section, the CAIR designated representative may request for a control period CAIR NOX allowances in an amount not exceeding the CAIR NOX unit’s total tons of NOX emissions during the calendar year immediately before such control period.

(4) The Administrator will review each CAIR NOX allowance allocation request under paragraph (c)(2) of this section and will allocate CAIR NOX allowances for each control period pursuant to such request as follows:

(i) The Administrator will accept an allowance allocation request only if the request meets, or is adjusted by the Administrator as necessary to meet, the requirements of paragraphs (c)(2) and (3) of this section.

(ii) On or after May 1 of the control period, the Administrator will determine the sum of the CAIR NOX allowances requested (as adjusted under paragraph (c)(4)(i) of this section) in all allowance allocation requests accepted under paragraph (c)(4)(i) of this section for the control period.

(iii) If the amount of CAIR NOX allowances in the new unit set-aside for the control period is greater than or equal to the sum under paragraph (c)(4)(ii) of this section, then the Administrator will allocate the amount of CAIR NOX allowances requested (as adjusted under paragraph (c)(4)(i) of this section) to each CAIR NOX unit covered by an allowance allocation request accepted under paragraph (c)(4)(i) of this section.

(iv) If the amount of CAIR NOX allowances in the new unit set-aside for the control period is less than the sum under paragraph (c)(4)(ii) of this section, then the Administrator will allocate by an allowance allocation request accepted under paragraph (c)(4)(i) of this section the amount of the CAIR NOX allowances requested (as adjusted under paragraph (c)(4)(i) of this section), multiplied by the amount of CAIR NOX allowances in the new unit set-aside for
the control period, divided by the sum determined under paragraph (c)(4)(ii) of this section, and rounded to the nearest whole allowance as appropriate.

(v) The Administrator will notify each CAIR designated representative that submitted an allowance allocation request of the amount of CAIR NOx allowances (if any) allocated for the control period to the CAIR NOx unit covered by the request.

(d) If, after completion of the procedures under paragraph (c)(4) of this section for a control period, any unallocated CAIR NOx allowances remain in the new unit set-aside under paragraph (c) of this section for a State for the control period, the Administrator will allocate to each CAIR NOx unit that was allocated CAIR NOx allowances under paragraph (b) of this section in the State an amount of CAIR NOx allowances equal to the total amount of such remaining unallocated CAIR NOx allowances, multiplied by the unit’s allocation under paragraph (b) of this section, divided by 95 percent for a control period during 2009 through 2014, and 97 percent for a control period during 2015 and thereafter, of the amount of tons of NOx emissions in the applicable State trading budget under §97.140, and rounded to the nearest whole allowance as appropriate.

(e) If the Administrator determines that CAIR NOx allowances were allocated under paragraphs (a) and (b) of this section, paragraphs (a) and (c) of this section, or paragraph (d) of this section for a control period and that the recipient of the allocation is not actually a CAIR NOx unit under §97.104 in such control period, then the Administrator will notify the CAIR designated representative and will act in accordance with the following procedures:

(1) Except as provided in paragraph (e)(2) or (3) of this section, the Administrator will not record such CAIR NOx allowances under §97.153.

(2) If the Administrator already recorded such CAIR NOx allowances under §97.153 and if the Administrator makes such determination after making deductions for the source that includes such recipient under §97.154(b) for the control period, then the Administrator will apply paragraph (e)(1) or (2) of this section, as appropriate, to any subsequent control period for which CAIR NOx allowances were allocated to such recipient.

(3) If the Administrator already recorded such CAIR NOx allowances under §97.153 and if the Administrator makes such determination after making deductions for the source that includes such recipient under §97.154(b) for the control period, then the Administrator will apply paragraph (e)(1) or (2) of this section, as appropriate, to any subsequent control period for which CAIR NOx allowances were allocated to such recipient.

(4) The Administrator will transfer the CAIR NOx allowances that are not recorded, or that are deducted, in accordance with paragraphs (e)(1), (2), and (3) of this section to a new unit set-aside for the State in which such recipient is located.

§97.143 Compliance supplement pool.

(a) In addition to the CAIR NOx allowances allocated under §97.142, the Administrator may allocate for the control period in 2009 up to the following amount of CAIR NOx allowances to CAIR NOx units in the respective State:

<table>
<thead>
<tr>
<th>State</th>
<th>Compliance supplement pool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>10,166</td>
</tr>
<tr>
<td>Delaware</td>
<td>843</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>0</td>
</tr>
<tr>
<td>Florida</td>
<td>8,335</td>
</tr>
<tr>
<td>Georgia</td>
<td>12,397</td>
</tr>
<tr>
<td>Illinois</td>
<td>11,299</td>
</tr>
<tr>
<td>Indiana</td>
<td>20,155</td>
</tr>
<tr>
<td>Iowa</td>
<td>6,978</td>
</tr>
<tr>
<td>Kentucky</td>
<td>14,935</td>
</tr>
<tr>
<td>Louisiana</td>
<td>2,251</td>
</tr>
<tr>
<td>Maryland</td>
<td>4,870</td>
</tr>
<tr>
<td>Michigan</td>
<td>8,347</td>
</tr>
<tr>
<td>Minnesota</td>
<td>6,528</td>
</tr>
<tr>
<td>Mississippi</td>
<td>3,066</td>
</tr>
<tr>
<td>Missouri</td>
<td>9,044</td>
</tr>
<tr>
<td>New Jersey</td>
<td>660</td>
</tr>
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<td>New York</td>
<td>0</td>
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<tr>
<td>North Carolina</td>
<td>0</td>
</tr>
<tr>
<td>Ohio</td>
<td>25,037</td>
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<tr>
<td>Pennsylvania</td>
<td>16,009</td>
</tr>
<tr>
<td>South Carolina</td>
<td>2,600</td>
</tr>
</tbody>
</table>
(b) For any CAIR NO\textsubscript{x} unit in a State, if the unit’s average annual NO\textsubscript{x} emission rate for 2007 or 2008 is less than 0.25 lb/mmBtu and, where such unit is included in a NO\textsubscript{x} averaging plan under §76.11 of this chapter under the Acid Rain Program for such year, the unit’s NO\textsubscript{x} averaging plan has an actual weighted average NO\textsubscript{x} emission rate for such year equal to or less than the actual weighted average NO\textsubscript{x} emission rate for the year before such year and if the unit achieves NO\textsubscript{x} emission reductions in 2007 and 2008, the CAIR designated representative of the unit may request early reduction credits, and allocation of CAIR NO\textsubscript{x} allowances from the compliance supplement pool under paragraph (a) of this section, in accordance with the following:

(1) The owners and operators of such CAIR NO\textsubscript{x} unit shall monitor and report the NO\textsubscript{x} emissions rate and the heat input of the unit in accordance with subpart HH of this part in each control period for which early reduction credit is requested.

(2) The CAIR designated representative of such CAIR NO\textsubscript{x} unit shall submit to the Administrator by May 1, 2009 a request, in a format specified by the Administrator, for allocation of an amount of CAIR NO\textsubscript{x} allowances from the compliance supplement pool not exceeding the sum of the unit’s heat input for the control period in 2007 multiplied by the difference (if any greater than zero) between 0.25 lb/mmBtu and the unit’s NO\textsubscript{x} emission rate for the control period in 2007 plus the unit’s heat input for the control period in 2008 multiplied by the difference (if any greater than zero) between 0.25 lb/mmBtu and the unit’s NO\textsubscript{x} emission rate for the control period in 2008, determined in accordance with subpart HH of this part and with the sum divided by 2,000 lb/ton and rounded to the nearest whole number of tons as appropriate.

(c) For any CAIR NO\textsubscript{x} unit in a State whose compliance with the CAIR NO\textsubscript{x} emissions limitation for the control period in 2009 would create an undue risk to the reliability of electricity supply during such control period, the CAIR designated representative of the unit may request the allocation of CAIR NO\textsubscript{x} allowances from the compliance supplement pool under paragraph (a) of this section, in accordance with the following:

(1) The CAIR designated representative of such CAIR NO\textsubscript{x} unit shall submit to the Administrator by May 1, 2009 a request, in a format specified by the Administrator, for allocation of an amount of CAIR NO\textsubscript{x} allowances from the compliance supplement pool not exceeding the minimum amount of CAIR NO\textsubscript{x} allowances necessary to remove such undue risk to the reliability of electricity supply.

(2) In the request under paragraph (c)(1) of this section, the CAIR designated representative of such CAIR NO\textsubscript{x} unit shall demonstrate that, in the absence of allocation to the unit of the amount of CAIR NO\textsubscript{x} allowances requested, the unit’s compliance with the CAIR NO\textsubscript{x} emissions limitation for the control period in 2009 would create an undue risk to the reliability of electricity supply during such control period. This demonstration must include a showing that it would not be feasible for the owners and operators of the unit to:

(i) Obtain a sufficient amount of electricity from other electricity generation facilities, during the installation of control technology at the unit for compliance with the CAIR NO\textsubscript{x} emissions limitation, to prevent such undue risk; or

(ii) Obtain under paragraphs (b) and (d) of this section, or otherwise obtain, a sufficient amount of CAIR NO\textsubscript{x} allowances to prevent such undue risk.

(d) The Administrator will review each request under paragraph (b) or (c) of this section submitted by May 1, 2009 and will allocate CAIR NO\textsubscript{x} allowances for the control period in 2009 to CAIR NO\textsubscript{x} units in a State and covered by such request as follows:

<table>
<thead>
<tr>
<th>State</th>
<th>Compliance supplement pool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tennessee</td>
<td>8,944</td>
</tr>
<tr>
<td>Texas</td>
<td>772</td>
</tr>
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<td>Virginia</td>
<td>5,134</td>
</tr>
<tr>
<td>West Virginia</td>
<td>16,929</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>4,898</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>199,997</strong></td>
</tr>
</tbody>
</table>
§ 97.144 Alternative of allocation of CAIR NO\textsubscript{X} allowances and compliance supplement pool by permitting authority.

(a) Notwithstanding §§97.141, 97.142, and 97.153 if a State submits, and the Administrator approves, a State implementation plan revision in accordance with §51.123(p)(1) of this chapter providing for allocation of CAIR NO\textsubscript{X} allowances by the permitting authority, then the permitting authority shall make such allocations in accordance with such approved State implementation plan revision, the Administrator will not make allocations under §§97.141 and 97.142 for the CAIR NO\textsubscript{X} units in the State, and under §97.153, the Administrator will record the allocations made under such approved State implementation plan revision instead of allocations made under §§97.141 and 97.142.

(b) Notwithstanding §97.143, if a State submits, and the Administrator approves, a State implementation plan revision in accordance with §51.123(p)(2) of this chapter providing for allocation of the State’s compliance supplement pool by the permitting authority, then the permitting authority shall make such allocations in accordance with such approved State implementation plan revision, the Administrator will not make allocations under §97.143(d)(4) for the CAIR NO\textsubscript{X} units in the State, and under §97.143(d)(5), the Administrator will record the allocations of the State’s compliance supplement pool made under such paragraph and will provide an opportunity for submission of objections to the determination. Objections shall be limited to addressing whether the determination is in accordance with paragraph (b) or (c) of this section and paragraph (d)(2) or (3) of this section, as appropriate. Based on any such objections, the Administrator will adjust each determination to the extent necessary to ensure that it is in accordance with such paragraphs.

(5) By January 1, 2010, the Administrator will record the allocations under paragraph (d)(4) of this section. 

[65 FR 2727, Jan. 18, 2000, as amended at 71 FR 74795, Dec. 13, 2006]
under such approved State implementation plan revision instead of allocations made under §97.143(d)(4).

(c)(1) In implementing paragraph (a) of this section and §§97.141, 97.142, and 97.153, the Administrator will ensure that the total amount of CAIR NO\textsubscript{X} allowances allocated, under such provisions and under a State’s State implementation plan revision approved in accordance with §51.123(p)(1) of this chapter, for a control period for CAIR NO\textsubscript{X} sources in the State or for other entities specified by the permitting authority will not exceed the State’s State trading budget for the year of the control period.

(2) In implementing paragraph (b) of this section and §97.143, the Administrator will ensure that the total amount of CAIR NO\textsubscript{X} allowances allocated, under such provisions and under a State’s State implementation plan revision approved in accordance with §51.123(p)(2), for CAIR NO\textsubscript{X} sources in the State will not exceed the State’s compliance supplement pool.

[65 FR 2727, Jan. 18, 2000, as amended at 71 FR 74795, Dec. 13, 2006]

APPENDIX A TO SUBPART EE OF PART 97—STATES WITH APPROVED STATE IMPLEMENTATION PLAN REVISIONS CONCERNING ALLOCATIONS

1. The following States have State Implementation Plan revisions under §51.123(p)(1) of this chapter approved by the Administrator and providing for allocation of CAIR NO\textsubscript{X} allowances by the permitting authority under §97.144(a):

   Indiana
   Louisiana
   Michigan
   New Jersey
   North Carolina
   Ohio
   South Carolina
   Tennessee
   Texas (for control periods 2009–2014)
   West Virginia (for control periods 2009–2014)
   Wisconsin

2. The following States have State Implementation Plan revisions under §51.123(p)(2) of this chapter approved by the Administrator and providing for allocation of the Compliance Supplement Pool by the permitting authority under §97.144(b):

   Indiana
   Michigan
   New Jersey
   Ohio
   South Carolina
   Texas


Subpart FF—CAIR NO\textsubscript{X} Allowance Tracking System

§97.150 [Reserved]

§97.151 Establishment of accounts.

(a) Compliance accounts. Except as provided in §97.184(e), upon receipt of a complete certificate of representation under §97.113, the Administrator will establish a compliance account for the CAIR NO\textsubscript{X} source for which the certificate of representation was submitted, unless the source already has a compliance account.

(b) General accounts—(1) Application for general account. (i) Any person may apply to open a general account for the purpose of holding and transferring CAIR NO\textsubscript{X} allowances. An application for a general account may designate one and only one CAIR authorized account representative and one and only one alternate CAIR authorized account representative who may act on behalf of the CAIR authorized account representative. The agreement by which the alternate CAIR authorized account representative is selected shall include a procedure for authorizing the alternate CAIR authorized account representative to act in lieu of the CAIR authorized account representative.

(ii) A complete application for a general account shall be submitted to the Administrator and shall include the following elements in a format prescribed by the Administrator:

(A) Name, mailing address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the CAIR authorized account representative and any alternate CAIR authorized account representative; 

(B) Organization name and type of organization, if applicable;

(C) A list of all persons subject to a binding agreement for the CAIR authorized account representative and
any alternate CAIR authorized account representative to represent their ownership interest with respect to the CAIR NOx allowances held in the general account;

(D) The following certification statement by the CAIR authorized account representative and any alternate CAIR authorized account representative: “I certify that I was selected as the CAIR authorized account representative or the alternate CAIR authorized account representative, as applicable, by an agreement that is binding on all persons who have an ownership interest with respect to CAIR NOx allowances held in the general account. I certify that I have all the necessary authority to carry out my duties and responsibilities under the CAIR NOx Annual Trading Program on behalf of such persons and that each such person shall be fully bound by my representations, actions, inactions, or submissions and by any order or decision issued to me by the Administrator or a court regarding the general account.”

(E) The signature of the CAIR authorized account representative and any alternate CAIR authorized account representative and the dates signed.

(iii) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the application for a general account shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

(2) Authorization of CAIR authorized account representative and alternate CAIR authorized account representative.

(i) Upon receipt by the Administrator of a complete application for a general account under paragraph (b)(1) of this section:

(A) The Administrator will establish a general account for the person or persons for whom the application is submitted.

(B) The CAIR authorized account representative and any alternate CAIR authorized account representative for the general account shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each person who has an ownership interest with respect to CAIR NOx allowances held in the general account in all matters pertaining to the CAIR NOx Annual Trading Program, notwithstanding any agreement between the CAIR authorized account representative or any alternate CAIR authorized account representative and such person. Any such person shall be bound by any order or decision issued to the CAIR authorized account representative or any alternate CAIR authorized account representative by the Administrator or a court regarding the general account.

(C) Any representation, action, inaction, or submission by any alternate CAIR authorized account representative shall be deemed to be a representation, action, inaction, or submission by the CAIR authorized account representative.

(ii) Each submission concerning the general account shall be submitted, signed, and certified by the CAIR authorized account representative or any alternate CAIR authorized account representative for the persons having an ownership interest with respect to CAIR NOx allowances held in the general account. Each such submission shall include the following certification statement by the CAIR authorized account representative or any alternate CAIR authorized account representative: “I am authorized to make this submission on behalf of the persons having an ownership interest with respect to the CAIR NOx allowances held in the general account. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(iii) The Administrator will accept or act on a submission concerning the
general account only if the submission has been made, signed, and certified in accordance with paragraph (b)(2)(ii) of this section.

(3) Changing CAIR authorized account representative and alternate CAIR authorized account representative; changes in persons with ownership interest. (i) The CAIR authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CAIR authorized account representative before the time and date when the Administrator receives the superseding application for a general account shall be binding on the new CAIR authorized account representative and the persons with an ownership interest with respect to the CAIR NO\textsubscript{X} allowances in the general account.

(ii) The alternate CAIR authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate CAIR authorized account representative before the time and date when the Administrator receives the superseding application for a general account shall be binding on the new alternate CAIR authorized account representative and the persons with an ownership interest with respect to the CAIR NO\textsubscript{X} allowances in the general account.

(iii)(A) In the event a person having an ownership interest with respect to CAIR NO\textsubscript{X} allowances in the general account is not included in the list of such persons in the application for a general account, such person shall be deemed to be subject to and bound by the application for a general account, the representation, actions, inactions, and submissions of the CAIR authorized account representative and any alternate CAIR authorized account representative of the account, and the decisions and orders of the Administrator or a court, as if the person were included in such list.

(B) Within 30 days following any change in the persons having an ownership interest with respect to CAIR NO\textsubscript{X} allowances in the general account, including the addition of a new person, the CAIR authorized account representative or any alternate CAIR authorized account representative shall submit a revision to the application for a general account amending the list of persons having an ownership interest with respect to the CAIR NO\textsubscript{X} allowances in the general account to include the change.

(4) Objections concerning CAIR authorized account representative and alternate CAIR authorized account representative. (i) Once a complete application for a general account under paragraph (b)(1) of this section has been submitted and received, the Administrator will rely on the application unless and until a superseding complete application for a general account under paragraph (b)(1) of this section is received by the Administrator.

(ii) Except as provided in paragraph (b)(3)(i) or (ii) of this section, no objection or other communication submitted to the Administrator concerning the authorization, or any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative for a general account shall affect any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative or the finality of any decision or order by the Administrator under the CAIR NO\textsubscript{X} Annual Trading Program.

(iii) The Administrator will not adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative for a general account, including private legal disputes concerning the proceeds of CAIR NO\textsubscript{X} allowance transfers.

(5) Delegation by CAIR authorized account representative and alternate CAIR authorized account representative. (i) A
CAIR authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under subparts FF and GG of this part.

(ii) An alternate CAIR authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under subparts FF and GG of this part.

(iii) In order to delegate authority to make an electronic submission to the Administrator in accordance with paragraph (b)(5)(i) or (ii) of this section, the CAIR authorized account representative or alternate CAIR authorized account representative, as appropriate, must submit to the Administrator a notice of delegation, in a format prescribed by the Administrator, that includes the following elements:

(A) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of such CAIR authorized account representative or alternate CAIR authorized account representative;

(B) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of each such natural person (referred to as an “agent”);

(C) For each such natural person, a list of the type or types of electronic submissions under paragraph (b)(5)(i) or (ii) of this section for which authority is delegated to him or her;

(D) The following certification statement by such CAIR authorized account representative or alternate CAIR authorized account representative: “I agree that any electronic submission to the Administrator that is by an agent identified in this notice of delegation and of a type listed for such agent in this notice of delegation and that is made when I am a CAIR authorized account representative or alternate CAIR authorized account representative, as appropriate, and before this notice of delegation is superseded by another notice of delegation under 40 CFR 97.151(b)(5)(iv) shall be deemed to be an electronic submission by me.”; and

(E) The following certification statement by such CAIR authorized account representative or alternate CAIR authorized account representative: “Until this notice of delegation is superseded by another notice of delegation under 40 CFR 97.151(b)(5)(iv), I agree to maintain an e-mail account and to notify the Administrator immediately of any change in my e-mail address unless all delegation of authority by me under 40 CFR 97.151(b)(5) is terminated.”.

(iv) A notice of delegation submitted under paragraph (b)(5)(iii) of this section shall be effective, with regard to the CAIR authorized account representative or alternate CAIR authorized account representative identified in such notice, upon receipt of such notice by the Administrator and until receipt by the Administrator of a superseding notice of delegation submitted by such CAIR authorized account representative or alternate CAIR authorized account representative, as appropriate. The superseding notice of delegation may replace any previously identified agent, add a new agent, or eliminate entirely any delegation of authority.

(v) Any electronic submission covered by the certification in paragraph (b)(5)(iii)(D) of this section and made in accordance with a notice of delegation effective under paragraph (b)(5)(iv) of this section shall be deemed to be an electronic submission by the CAIR designated representative or alternate CAIR designated representative submitting such notice of delegation.

(c) Account identification. The Administrator will assign a unique identifying number to each account established under paragraph (a) or (b) of this section.

§ 97.152 Responsibilities of CAIR authorized account representative.

Following the establishment of a CAIR NOx Allowance Tracking System account, all submissions to the Administrator pertaining to the account, including, but not limited to, submissions concerning the deduction or transfer of CAIR NOx allowances in the account, shall be made only by the CAIR authorized account representative for the account.
§ 97.153 Recordation of CAIR NOX allowance allocations.

(a) By September 30, 2007, the Administrator will record in the CAIR NOX source’s compliance account the CAIR NOX allowances allocated for the CAIR NOX units at the source in accordance with §97.142(a) and (b) for the control period in 2007.

(b) By September 30, 2008, the Administrator will record in the CAIR NOX source’s compliance account the CAIR NOX allowances allocated for the CAIR NOX units at the source in accordance with §97.142(a) and (b) for the control period in 2008.

(c) By September 30, 2009, the Administrator will record in the CAIR NOX source’s compliance account the CAIR NOX allowances allocated for the CAIR NOX units at the source in accordance with §97.142(a) and (b) for the control period in 2009.

(d) By December 1, 2010 and December 1 of each year thereafter, the Administrator will record in the CAIR NOX source’s compliance account the CAIR NOX allowances allocated for the CAIR NOX units at the source in accordance with §97.142(a) and (b) for the control periods in 2011, 2012, and 2013.

(e) By December 1, 2009 and December 1 of each year thereafter, the Administrator will record in the CAIR NOX source’s compliance account the CAIR NOX allowances allocated for the CAIR NOX units at the source in accordance with §97.142(a) and (b) for the control period in the fourth year after the year of the applicable deadline for recordation under this paragraph.

(f) Serial numbers for allocated CAIR NOX allowances. When recording the allocation of CAIR NOX allowances for a CAIR NOX unit in a compliance account, the Administrator will assign each CAIR NOX allowance a unique identification number that will include digits identifying the year of the control period for which the CAIR NOX allowance is allocated.

§ 97.154 Compliance with CAIR NOX emissions limitation.

(a) Allowance transfer deadline. The CAIR NOX allowances are available to be deducted for compliance with a source’s CAIR NOX emissions limitation for a control period in a given calendar year only if the CAIR NOX allowances:

(1) Were allocated for the control period in the year or a prior year; and

(2) Are held in the compliance account as of the allowance transfer deadline for the control period or are transferred into the compliance account by a CAIR NOX allowance transfer correctly submitted for recordation under §§97.160 and 97.161 by the allowance transfer deadline for the control period.

(b) Deductions for compliance. Following the recordation, in accordance with §97.161, of CAIR NOX allowance transfers submitted for recordation in a source’s compliance account by the allowance transfer deadline for a control period, the Administrator will deduct from the compliance account CAIR NOX allowances available under paragraph (a) of this section in order to determine whether the source meets the CAIR NOX emissions limitation for the control period, as follows:

(1) Until the amount of CAIR NOX allowances deducted equals the number of tons of total nitrogen oxides emissions, determined in accordance with subpart HH of this part, from all CAIR NOX units at the source for the control period; or

(2) If there are insufficient CAIR NOX allowances to complete the deductions in paragraph (b)(1) of this section, until no more CAIR NOX allowances available under paragraph (a) of this section remain in the compliance account.

(c)(1) Identification of CAIR NOX allowances by serial number. The CAIR authorized account representative for a source’s compliance account may request that specific CAIR NOX allowances, identified by serial number, in the compliance account be deducted for emissions or excess emissions for a control period in accordance with paragraph (b) or (d) of this section. Such request shall be submitted to the Administrator by the allowance transfer deadline for the control period and include, in a format prescribed by the Administrator, the identification of the CAIR NOX source and the appropriate serial numbers.
(2) First-in, first-out. The Administrator will deduct CAIR NO\textsubscript{X} allowances under paragraph (b) or (d) of this section from the source's compliance account, in the absence of an identification or in the case of a partial identification of CAIR NO\textsubscript{X} allowances by serial number under paragraph (c)(1) of this section, on a first-in, first-out (FIFO) accounting basis in the following order:

(i) Any CAIR NO\textsubscript{X} allowances that were allocated to the units at the source, in the order of recordation; and then

(ii) Any CAIR NO\textsubscript{X} allowances that were allocated to any entity and transferred and recorded in the compliance account pursuant to subpart GG of this part, in the order of recordation.

(d) Deductions for excess emissions. (1) After making the deductions for compliance under paragraph (b) of this section for a control period in a calendar year in which the CAIR NO\textsubscript{X} source has excess emissions, the Administrator will deduct from the source’s compliance account an amount of CAIR NO\textsubscript{X} allowances, allocated for the control period in the immediately following calendar year, equal to 3 times the number of tons of the source’s excess emissions.

(2) Any allowance deduction required under paragraph (d)(1) of this section shall not affect the liability of the owners and operators of the CAIR NO\textsubscript{X} source or the CAIR NO\textsubscript{X} units at the source for any fine, penalty, or assessment, or their obligation to comply with any other remedy, for the same violations, as ordered under the Clean Air Act or applicable State law.

(e) Recordation of deductions. The Administrator will record in the appropriate compliance account all deductions from such an account under paragraphs (b) and (d) of this section and subpart II.

(f) Administrator's action on submissions. (1) The Administrator may review and conduct independent audits concerning any submission under the CAIR NO\textsubscript{X} Annual Trading Program and make appropriate adjustments of the information in the submissions.

(2) The Administrator may deduct CAIR NO\textsubscript{X} allowances from or transfer CAIR NO\textsubscript{X} allowances to a source’s compliance account based on the information in the submissions, as adjusted under paragraph (f)(1) of this section, and record such deductions and transfers.

§ 97.155 Banking.

(a) CAIR NO\textsubscript{X} allowances may be banked for future use or transfer in a compliance account or a general account in accordance with paragraph (b) of this section.

(b) Any CAIR NO\textsubscript{X} allowance that is held in a compliance account or a general account will remain in such account unless and until the CAIR NO\textsubscript{X} allowance is deducted or transferred under §97.142, §97.154, §97.156, or subpart GG or II of this part.

§ 97.156 Account error.

The Administrator may, at his or her sole discretion and on his or her own motion, correct any error in any CAIR NO\textsubscript{X} Allowance Tracking System account. Within 10 business days of making such correction, the Administrator will notify the CAIR authorized account representative for the account.

§ 97.157 Closing of general accounts.

(a) The CAIR authorized account representative of a general account may submit to the Administrator a request to close the account, which shall include a correctly submitted allowance transfer under §§97.160 and 97.161 for any CAIR NO\textsubscript{X} allowances in the account to one or more other CAIR NO\textsubscript{X} Allowance Tracking System accounts.

(b) If a general account has no allowance transfers in or out of the account for a 12-month period or longer and does not contain any CAIR NO\textsubscript{X} allowances, the Administrator may notify the CAIR authorized account representative for the account that the account will be closed following 20 business days after the notice is sent. The account will be closed after the 20-day period unless, before the end of the 20-day period, the Administrator receives a correctly submitted transfer of CAIR NO\textsubscript{X} allowances into the account under §§97.160 and 97.161 or a statement submitted by the CAIR authorized account representative demonstrating to the satisfaction of the Administrator good
cause as to why the account should not be closed.

Subpart GG—CAIR NOx Allowance Transfers

§ 97.160 Submission of CAIR NOx allowance transfers.

A CAIR authorized account representative seeking recordation of a CAIR NOx allowance transfer shall submit the transfer to the Administrator. To be considered correctly submitted, the CAIR NOx allowance transfer shall include the following elements, in a format specified by the Administrator:
(a) The account numbers for both the transferor and transferee accounts;
(b) The serial number of each CAIR NOx allowance that is in the transferor account and is to be transferred; and
(c) The name and signature of the CAIR authorized account representative of the transferor account and the date signed.

§ 97.161 EPA recordation.

(a) Within 5 business days (except as provided in paragraph (b) of this section) of receiving a CAIR NOx allowance transfer, the Administrator will record a CAIR NOx allowance transfer by moving each CAIR NOx allowance from the transferor account to the transferee account as specified by the request, provided that:
(1) The transfer is correctly submitted under §97.160; and
(2) The transferor account includes each CAIR NOx allowance identified by serial number in the transfer.

(b) A CAIR NOx allowance transfer that is submitted for recordation after the allowance transfer deadline for a control period and that includes any CAIR NOx allowances allocated for any control period before such allowance transfer deadline will not be recorded until after the Administrator completes the deductions under §97.154 for the control period immediately before such allowance transfer deadline.

(c) Where a CAIR NOx allowance transfer submitted for recordation fails to meet the requirements of paragraph (a) of this section, the Administrator will not record such transfer.

§ 97.162 Notification.

(a) Notification of recordation. Within 5 business days of recording a CAIR NOx allowance transfer under §97.161, the Administrator will notify the CAIR authorized account representatives of both the transferor and transferee accounts.

(b) Notification of non-recordation. Within 10 business days of receipt of a CAIR NOx allowance transfer that fails to meet the requirements of §97.161(a), the Administrator will notify the CAIR authorized account representatives of both accounts subject to the transfer of:
(1) A decision not to record the transfer, and
(2) The reasons for such non-recordation.

(c) Nothing in this section shall preclude the submission of a CAIR NOx allowance transfer for recordation following notification of non-recordation.

Subpart HH—Monitoring and Reporting

§ 97.170 General requirements.

The owners and operators, and to the extent applicable, the CAIR designated representative, of a CAIR NOx unit, shall comply with the monitoring, recordkeeping, and reporting requirements as provided in this subpart and in subpart H of part 75 of this chapter. For purposes of complying with such requirements, the definitions in §97.102 and in §72.2 of this chapter shall apply, and the terms “affected unit,” “designated representative,” and “continuous emission monitoring system” or “CEMS”) in part 75 of this chapter shall be deemed to refer to the terms “CAIR NOx unit,” “CAIR designated representative,” and “continuous emission monitoring system” (or “CEMS”) respectively, as defined in §97.102. The owner or operator of a unit that is not a CAIR NOx unit but that is monitored under §75.72(b)(2)(i) of this chapter shall comply with the same monitoring, recordkeeping, and reporting requirements as a CAIR NOx unit.

(a) Requirements for installation, certification, and data accounting. The owner or operator of each CAIR NOx unit shall:
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(1) Install all monitoring systems required under this subpart for monitoring NOX mass emissions and individual unit heat input (including all systems required to monitor NOX emission rate, NOX concentration, stack gas moisture content, stack gas flow rate, CO2 or O2 concentration, and fuel flow rate, as applicable, in accordance with §§75.71 and 75.72 of this chapter); (2) Successfully complete all certification tests required under §97.171 and meet all other requirements of this subpart and part 75 of this chapter applicable to the monitoring systems under paragraph (a)(1) of this section; and (3) Record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section.

(b) Compliance deadlines. Except as provided in paragraph (e) of this section, the owner or operator shall meet the monitoring system certification and other requirements of paragraphs (a)(1) and (2) of this section on or before the following dates. The owner or operator shall record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section on and after the following dates.

(1) For the owner or operator of a CAIR NOX unit that commences commercial operation before July 1, 2007, by January 1, 2008.

(2) For the owner or operator of a CAIR NOX unit that commences commercial operation on or after July 1, 2007, by the later of the following dates:

(i) January 1, 2008; or

(ii) 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which the unit commences commercial operation.

(3) For the owner or operator of a CAIR NOX unit for which construction of a new stack or flue or installation of add-on NOX emission controls is completed after the applicable deadline under paragraph (b)(1), (2), (4), or (5) of this section, by 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which emissions first exit to the atmosphere through the new stack or flue or add-on NOX emissions controls.

(4) Notwithstanding the dates in paragraphs (b)(1) and (2) of this section, for the owner or operator of a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart II of this part, by the date specified in §97.184(b).

(5) Notwithstanding the dates in paragraphs (b)(1) and (2) of this section, for the owner or operator of a CAIR NOX opt-in unit under subpart II of this part, by the date on which the CAIR NOX opt-in unit enters the CAIR NOX Annual Trading Program as provided in §97.184(g).

(c) Reporting data. The owner or operator of a CAIR NOX unit that does not meet the applicable compliance date set forth in paragraph (b) of this section for any monitoring system under paragraph (a)(1) of this section shall, for each such monitoring system, determine, record, and report maximum potential (or, as appropriate, minimum potential) values for NOX concentration, NOX emission rate, stack gas flow rate, stack gas moisture content, fuel flow rate, and any other parameters required to determine NOX mass emissions and heat input in accordance with §75.31(b)(2) or (c)(3) of this chapter, section 2.4 of appendix D to part 75 of this chapter, or section 2.5 of appendix E to part 75 of this chapter, as applicable.

(d) Prohibitions. (1) No owner or operator of a CAIR NOX unit shall use any alternative monitoring system, alternative reference method, or any other alternative to any requirement of this subpart without having obtained prior written approval in accordance with §97.175.

(2) No owner or operator of a CAIR NOX unit shall operate the unit so as to discharge, or allow to be discharged, NOX emissions to the atmosphere without accounting for all such emissions in accordance with the applicable provisions of this subpart and part 75 of this chapter.

(3) No owner or operator of a CAIR NOX unit shall disrupt the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording NOX mass emissions discharged.
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§ 97.171 Initial certification and recertification procedures.

(a) The owner or operator of a CAIR NO\textsubscript{X} unit shall be exempt from the initial certification requirements of this section for a monitoring system under §97.170(a)(1) if the following conditions are met:

(1) The monitoring system has been previously certified in accordance with part 75 of this chapter; and

(2) The applicable quality-assurance and quality-control requirements of §75.21 of this chapter and appendix B, appendix D, and appendix E to part 75 of this chapter are fully met for the certified monitoring system described in paragraph (a)(1) of this section.

(b) The recertification provisions of this section shall apply to a monitoring system under §97.170(a)(1) exempt from initial certification requirements under paragraph (a) of this section.

(c) If the Administrator has previously approved a petition under §75.17(a) or (b) of this chapter for apportioning the NO\textsubscript{X} emission rate measured in a common stack or a petition under §75.66 of this chapter for an alternative to a requirement in §75.12 or §75.17 of this chapter, the CAIR designated representative shall resubmit the petition to the Administrator under §97.175 to determine whether the approval applies under the CAIR NO\textsubscript{X} Annual Trading Program.

(d) Except as provided in paragraph (a) of this section, the owner or operator of a CAIR NO\textsubscript{X} unit shall comply with the following initial certification and recertification procedures for a continuous monitoring system (i.e., a continuous emission monitoring system and an excepted monitoring system under appendices D and E to part 75 of this chapter) under §97.170(a)(1). The owner or operator of a unit that qualifies to use the low mass emissions excepted monitoring methodology under §75.19 of this chapter or that qualifies to use an alternative monitoring system under subpart E of part 75 of this chapter shall comply with the procedures in paragraph (e) or (f) of this section respectively.

(1) Requirements for initial certification.

The owner or operator shall ensure that each continuous monitoring system under §97.170(a)(1) (including the automated data acquisition and handling system) successfully completes all of the initial certification testing required under §75.20 of this chapter by the applicable deadline in §97.170(b). In addition, whenever the owner or operator installs a monitoring system to meet the requirements of this subpart in a location where no such monitoring system was previously installed, initial certification in accordance with §75.20 of this chapter is required.

(2) Requirements for recertification.

Whenever the owner or operator makes a replacement, modification, or change in any certified continuous emission monitoring system under §97.170(a)(1)
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that may significantly affect the ability of the system to accurately measure or record NO\textsubscript{X} mass emissions or heat input rate or to meet the quality-assurance and quality-control requirements of §73.21 of this chapter or appendix B to part 75 of this chapter, the owner or operator shall recertify the monitoring system in accordance with §75.20(b) of this chapter. Furthermore, whenever the owner or operator makes a replacement, modification, or change to the flue gas handling system or the unit’s operation that may significantly change the stack flow or concentration profile, the owner or operator shall recertify each continuous emission monitoring system whose accuracy is potentially affected by the change, in accordance with §75.20(b) of this chapter. Examples of changes to a continuous emission monitoring system that require recertification include replacement of the analyzer, complete replacement of an existing continuous emission monitoring system, or change in location or orientation of the sampling probe or site. Any fuel flowmeter system, and any excepted NO\textsubscript{X} monitoring system under appendix E to part 75 of this chapter, under §97.170(a)(1) are subject to the recertification requirements in §75.20(g)(6) of this chapter.

(3) Approval process for initial certification and recertification. Paragraphs (d)(3)(i) through (iv) of this section apply to both initial certification and recertification of a continuous monitoring system under §97.170(a)(1). For recertifications, replace the words “certification” and “initial certification” with the word “recertification”, replace the word “certified” with the word “recertified”, and follow the procedures in §§75.20(b)(5) and (g)(7) of this chapter in lieu of the procedures in paragraph (d)(3)(v) of this section.

(i) Notification of certification. The CAIR designated representative shall submit to the appropriate EPA Regional Office and the Administrator written notice of the dates of certification testing, in accordance with §97.173.

(ii) Certification application. The CAIR designated representative shall submit to the Administrator a certification application for each monitoring system. A complete certification application shall include the information specified in §75.63 of this chapter.

(iii) Provisional certification date. The provisional certification date for a monitoring system shall be determined in accordance with §75.20(a)(3) of this chapter. A provisionally certified monitoring system may be used under the CAIR NO\textsubscript{X} Annual Trading Program for a period not to exceed 120 days after receipt by the Administrator of the complete certification application for the monitoring system under paragraph (d)(3)(ii) of this section. Data measured and recorded by the provisionally certified monitoring system, in accordance with the requirements of part 75 of this chapter, will be considered valid quality-assured data (retroactive to the date and time of provisional certification), provided that the Administrator does not invalidate the provisional certification by issuing a notice of disapproval within 120 days of the date of receipt of the complete certification application by the Administrator.

(iv) Certification application approval process. The Administrator will issue a written notice of approval or disapproval of the certification application to the owner or operator within 120 days of receipt of the complete certification application under paragraph (d)(3)(ii) of this section. In the event the Administrator does not issue such a notice within such 120-day period, each monitoring system that meets the applicable performance requirements of part 75 of this chapter and is included in the certification application will be deemed certified for use under the CAIR NO\textsubscript{X} Annual Trading Program.

(A) Approval notice. If the certification application is complete and shows that each monitoring system meets the applicable performance requirements of part 75 of this chapter, then the Administrator will issue a written notice of approval of the certification application within 120 days of receipt.

(B) Incomplete application notice. If the certification application is not complete, then the Administrator will issue a written notice of incompleteness that sets a reasonable date by
which the CAIR designated representative must submit the additional information required to complete the certification application. If the CAIR designated representative does not comply with the notice of incompleteness by the specified date, then the Administrator may issue a notice of disapproval under paragraph (d)(3)(iv)(C) of this section. The 120-day review period shall not begin before receipt of a complete certification application.

(C) Disapproval notice. If the certification application shows that any monitoring system does not meet the performance requirements of part 75 of this chapter or if the certification application is incomplete and the requirement for disapproval under paragraph (d)(3)(iv)(B) of this section is met, then the Administrator will issue a written notice of disapproval of the certification application. Upon issuance of such notice of disapproval, the provisional certification is invalidated by the Administrator and the data measured and recorded by each uncertified monitoring system shall not be considered valid quality-assured data beginning with the date and hour of provisional certification (as defined under §75.20(a)(3) of this chapter). The owner or operator shall follow the procedures for loss of certification in paragraph (d)(3)(v) of this section for each monitoring system that is disapproved for initial certification.

(D) Audit decertification. The Administrator may issue a notice of disapproval of the certification status of a monitor in accordance with §97.172(b).

(v) Procedures for loss of certification. If the Administrator issues a notice of disapproval of a certification application under paragraph (d)(3)(iv)(C) of this section or a notice of disapproval of certification status under paragraph (d)(3)(iv)(D) of this section, then:

(A) The owner or operator shall substitute the following values, for each disapproved monitoring system, for each hour of unit operation during the period of invalid data specified under §75.20(a)(4)(iii), §75.20(g)(7), or §75.21(e) of this chapter and continuing until the applicable date and hour specified under §75.20(a)(5)(i) or (g)(7) of this chapter:

1. For a disapproved NOx emission rate (i.e., NOx-diluent) system, the maximum potential NOx emission rate, as defined in §72.2 of this chapter.
2. For a disapproved NOx pollutant concentration monitor and disapproved flow monitor, respectively, the maximum potential concentration of NOx and the maximum potential flow rate, as defined in sections 2.1.2.1 and 2.1.4.1 of appendix A to part 75 of this chapter.
3. For a disapproved moisture monitoring system and disapproved diluent gas monitoring system, respectively, the minimum potential moisture percentage and either the maximum potential CO2 concentration or the minimum potential O2 concentration (as applicable), as defined in sections 2.1.5, 2.1.3.1, and 2.1.3.2 of appendix A to part 75 of this chapter.
4. For a disapproved fuel flowmeter system, the maximum potential fuel flow rate, as defined in section 2.4.2.1 of appendix D to part 75 of this chapter.
5. For a disapproved excepted NOx monitoring system under appendix E to part 75 of this chapter, the fuel-specific maximum potential NOx emission rate, as defined in §72.2 of this chapter.

(B) The CAIR designated representative shall submit a notification of certification retest dates and a new certification application in accordance with paragraphs (d)(3)(i) and (ii) of this section.

(C) The owner or operator shall repeat all certification tests or other requirements that were failed by the monitoring system, as indicated in the Administrator's notice of disapproval, no later than 30 unit operating days after the date of issuance of the notice of disapproval.

(e) Initial certification and recertification procedures for units using the low mass emission excepted methodology under §75.19 of this chapter. The owner or operator of a unit qualified to use the low mass emissions (LME) excepted methodology under §75.19 of this chapter shall meet the applicable certification and recertification requirements in §§75.19(a)(2) and 75.20(h) of this chapter. If the owner or operator of such a unit elects to certify a fuel flowmeter system for heat input determination, the owner or operator shall...
also meet the certification and recertification requirements in §97.170(g) of this chapter.

(f)  Certification/recertification procedures for alternative monitoring systems. The CAIR designated representative of each unit for which the owner or operator intends to use an alternative monitoring system approved by the Administrator under subpart E of part 75 of this chapter shall comply with the applicable notification and application procedures of §75.20(f) of this chapter.

§ 97.172  Out of control periods.

(a) Whenever any monitoring system fails to meet the quality-assurance and quality-control requirements or data validation requirements of part 75 of this chapter, data shall be substituted using the applicable missing data procedures in subpart D or subpart H of, or appendix D or appendix E to, part 75 of this chapter.

(b) Audit decertification. Whenever both an audit of a monitoring system and a review of the initial certification or recertification application reveal that any monitoring system should not have been certified or recertified because it did not meet a particular performance specification or other requirement under §97.171 or the applicable provisions of part 75 of this chapter, both at the time of the initial certification or recertification application submission and at the time of the audit, the Administrator will issue a notice of disapproval of the certification status of such monitoring system. For the purposes of this paragraph, an audit shall be either a field audit or an audit of any information submitted to the permitting authority or the Administrator. By issuing the notice of disapproval, the Administrator revokes prospectively the certification status of the monitoring system. The data measured and recorded by the monitoring system shall not be considered valid quality-assured data from the date of issuance of the notification of the certification status until the date and time that the owner or operator completes subsequently approved initial certification or recertification tests for the monitoring system. The owner or operator shall follow the applicable initial certification or recertification procedures in §97.171 for each disapproved monitoring system.

§ 97.173  Notifications.

The CAIR designated representative for a CAIR NOX unit shall submit written notice to the Administrator in accordance with §75.61 of this chapter.

§ 97.174  Recordkeeping and reporting.

(a) General provisions. The CAIR designated representative shall comply with all recordkeeping and reporting requirements in this section, the applicable recordkeeping and reporting requirements under §75.73 of this chapter, and the requirements of §97.110(e)(1).

(b) Monitoring plans. The owner or operator of a CAIR NOX unit shall comply with requirements of §75.73(c) and (e) of this chapter and, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart II of this part, §§97.183 and 97.184(a).

(c) Certification applications. The CAIR designated representative shall submit an application to the Administrator within 45 days after completing all initial certification or recertification tests required under §97.171, including the information required under §75.63 of this chapter.

(d) Quarterly reports. The CAIR designated representative shall submit quarterly reports, as follows:

1. The CAIR designated representative shall report the NOX mass emissions data and heat input data for the CAIR NOX unit, in an electronic quarterly report in a format prescribed by the Administrator, for each calendar quarter beginning with:

   (i) For a unit that commences commercial operation before July 1, 2007, the calendar quarter covering January 1, 2008 through March 31, 2008;

   (ii) For a unit that commences commercial operation on or after July 1, 2007, the calendar quarter corresponding to the earlier of the date of provisional certification or the applicable deadline for initial certification under §97.170(b), unless that quarter is the third or fourth quarter of 2007, in which case reporting shall commence...
in the quarter covering January 1, 2008 through March 31, 2008:

(iii) Notwithstanding paragraphs (d)(1)(i) and (ii) of this section, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart II of this part, the calendar quarter corresponding to the date specified in §97.184(b); and

(iv) Notwithstanding paragraphs (d)(1)(i) and (ii) of this section, for a CAIR NO\textsubscript{X} opt-in unit under subpart II of this part, the calendar quarter corresponding to the date on which the CAIR NO\textsubscript{X} opt-in unit enters the CAIR NO\textsubscript{X} Annual Trading Program as provided in §97.184(g).

(2) The CAIR designated representative shall submit each quarterly report to the Administrator within 30 days following the end of the calendar quarter covered by the report. Quarterly reports shall be submitted in the manner specified in §75.73(f) of this chapter.

(3) For CAIR NO\textsubscript{X} units that are also subject to an Acid Rain emissions limitation or the CAIR NO\textsubscript{X} Ozone Season Trading Program, CAIR SO\textsubscript{2} Trading Program, or Hg Budget Trading Program, quarterly reports shall include the applicable data and information required by subparts F through I of part 75 of this chapter as applicable, in addition to the NO\textsubscript{X} mass emission data, heat input data, and other information required by this subpart.

(e) Compliance certification. The CAIR designated representative shall submit to the Administrator a compliance certification (in a format prescribed by the Administrator) in support of each quarterly report based on reasonable inquiry of those persons with primary responsibility for ensuring that all of the unit’s emissions are correctly and fully monitored. The certification shall state that:

(1) The monitoring data submitted were recorded in accordance with the applicable requirements of this subpart and part 75 of this chapter, including the quality assurance procedures and specifications; and

(2) For a unit with add-on NO\textsubscript{X} emission controls and for all hours where NO\textsubscript{X} data are substituted in accordance with §75.34(a)(1) of this chapter, the add-on emission controls were operating within the range of parameters listed in the quality assurance/quality control program under appendix B to part 75 of this chapter and the substitute data values do not systematically underestimate NO\textsubscript{X} emissions.

§97.175 Petitions.

The CAIR designated representative of a CAIR NO\textsubscript{X} unit may submit a petition under §75.66 of this chapter to the Administrator requesting approval to apply an alternative to any requirement of this subpart. Application of an alternative to any requirement of this subpart is in accordance with this subpart only to the extent that the petition is approved in writing by the Administrator, in consultation with the permitting authority.

Subpart II—CAIR NO\textsubscript{X} Opt-In Units

§97.180 Applicability.

A CAIR NO\textsubscript{X} opt-in unit must be a unit that:

(a) Is located in a State that submits, and for which the Administrator approves, a State implementation plan revision in accordance with §51.123(p)(3)(i), (ii), or (iii) of this chapter establishing procedures concerning CAIR opt-in units;

(b) Is not a CAIR NO\textsubscript{X} unit under §97.104 and is not covered by a retired unit exemption under §97.105 that is in effect;

(c) Is not covered by a retired unit exemption under §72.8 of this chapter that is in effect;

(d) Has or is required or qualified to have a title V operating permit or other federally enforceable permit; and

(e) Vents all of its emissions to a stack and can meet the monitoring, recordkeeping, and reporting requirements of subpart HH of this part.

§97.181 General.

(a) Except as otherwise provided in §§97.101 through 97.104, §§97.106 through 97.108, and subparts BB and CC and subparts FF through HH of this part, a CAIR NO\textsubscript{X} opt-in unit shall be treated as a CAIR NO\textsubscript{X} unit for purposes of applying such sections and subparts of this part.
§ 97.182 Solely for purposes of applying, as provided in this subpart, the requirements of subpart HH of this part to a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under this subpart, such unit shall be treated as a CAIR NO\textsubscript{X} unit before issuance of a CAIR opt-in permit for such unit.

§ 97.182 CAIR designated representative.

Any CAIR NO\textsubscript{X} opt-in unit, and any unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under this subpart, located at the same source as one or more CAIR NO\textsubscript{X} units shall have the same CAIR designated representative and alternate CAIR designated representative as such CAIR NO\textsubscript{X} units.

§ 97.183 Applying for CAIR opt-in permit.

(a) Applying for initial CAIR opt-in permit. The CAIR designated representative of a unit meeting the requirements for a CAIR NO\textsubscript{X} opt-in unit in §97.180 may apply for an initial CAIR opt-in permit at any time, except as provided under §97.186(f) and (g), and, in order to apply, must submit the following:
   1. A complete CAIR permit application under §97.122;
   2. A certification, in a format specified by the permitting authority, that the unit:
      (i) Is not a CAIR NO\textsubscript{X} unit under §97.104 and is not covered by a retired unit exemption under §97.105 that is in effect;
      (ii) Is not covered by a retired unit exemption under §72.8 of this chapter that is in effect;
      (iii) Vents all of its emissions to a stack; and
      (iv) Has documented heat input for more than 876 hours during the 6 months immediately preceding submission of the CAIR permit application under §97.122;
   3. A monitoring plan in accordance with subpart HH of this part;
   4. A complete certificate of representation under §97.113 consistent with §97.182, if no CAIR designated representative has been previously designated for the source that includes the unit; and
   5. A statement, in a format specified by the permitting authority, whether the CAIR designated representative requests that the unit be allocated CAIR NO\textsubscript{X} allowances under §97.188(b) or §97.188(c) (subject to the conditions in §§97.184(h) and 97.186(g)), to the extent such allocation is provided in a State implementation plan revision submitted in accordance with §51.123(p)(3)(i), (ii), or (iii) of this chapter and approved by the Administrator.

(b) Duty to reapply. (1) The CAIR designated representative of a CAIR NO\textsubscript{X} opt-in unit shall submit a complete CAIR permit application under §97.122 to renew the CAIR opt-in unit permit in accordance with the permitting authority’s regulations for title V operating permits, or the permitting authority’s regulations for other federally enforceable permits if applicable, addressing permit renewal.

   (2) Unless the permitting authority issues a notification of acceptance of withdrawal of the CAIR NO\textsubscript{X} opt-in unit from the CAIR NO\textsubscript{X} Annual Trading Program in accordance with §97.186 or the unit becomes a CAIR NO\textsubscript{X} unit under §97.104, the CAIR NO\textsubscript{X} opt-in unit shall remain subject to the requirements for a CAIR NO\textsubscript{X} opt-in unit, even if the CAIR designated representative for the CAIR NO\textsubscript{X} opt-in unit fails to submit a CAIR permit application that is required for renewal of the CAIR opt-in permit under paragraph (b)(1) of this section.

§ 97.184 Opt-in process.

The permitting authority will issue or deny a CAIR opt-in permit for a unit for which an initial application for a CAIR opt-in permit under §97.183 is submitted in accordance with the following, to the extent provided in a State implementation plan revision submitted in accordance with §51.123(p)(3)(i), (ii), or (iii) of this chapter and approved by the Administrator:
Environmental Protection Agency § 97.184

(a) Interim review of monitoring plan. The permitting authority and the Administrator will determine, on an interim basis, the sufficiency of the monitoring plan accompanying the initial application for a CAIR opt-in permit under §97.183. A monitoring plan is sufficient, for purposes of interim review, if the plan appears to contain information demonstrating that the NOx emissions rate and heat input of the unit and all other applicable parameters are monitored and reported in accordance with subpart HH of this part. A determination of sufficiency shall not be construed as acceptance or approval of the monitoring plan.

(b) Monitoring and reporting. (1)(i) If the permitting authority and the Administrator determine that the monitoring plan is sufficient under paragraph (a) of this section, the owner or operator shall monitor and report the NOx emissions rate and the heat input of the unit and all other applicable parameters, in accordance with subpart HH of this part, starting on the date of certification of the appropriate monitoring systems under subpart HH of this part, until a CAIR NOx Annual Trading Program in accordance with §97.186.

(ii) The monitoring and reporting under paragraph (b)(1)(i) of this section shall include the entire control period immediately before the date on which the unit enters the CAIR NOx Annual Trading Program under §97.184, during which period monitoring system availability must not be less than 90 percent under subpart HH of this part and the unit is in full compliance with any applicable State or Federal emissions or emissions-related requirements and which control periods begin not more than 3 years before the unit enters the CAIR NOx Annual Trading Program under §97.184(g). Such information shall be used as provided in paragraphs (c) and (d) of this section.

(c) Baseline heat input. The unit's baseline heat input shall equal:

(1) If the unit’s NOx emissions rate and heat input are monitored and reported for only one control period, in accordance with paragraph (b)(1) of this section, the unit’s total heat input (in mmBtu) for the control period; or

(2) If the unit’s NOx emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, the average of the amounts of the unit’s total heat input (in mmBtu) for the control periods under paragraphs (b)(1)(i) and (2) of this section.

(d) Baseline NOx emission rate. The unit’s baseline NOx emission rate shall equal:

(1) If the unit’s NOx emissions rate and heat input are monitored and reported for only one control period, in accordance with paragraph (b)(1) of this section, the unit’s NOx emissions rate (in lb/mmBtu) for the control period;

(2) If the unit’s NOx emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, and the unit does not have add-on NOx emission controls during any such control periods, the average of the amounts of the unit’s NOx emission controls during any such control periods (in lb/mmBtu) for the control periods under paragraphs (b)(1)(i) and (2) of this section; or

(3) If the unit’s NOx emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, and the unit has add-on NOx emission controls during any such control periods, the average of the amounts of the unit’s NOx emissions rate (in lb/mmBtu) for such control periods during which the unit has add-on NOx emission controls.
§ 97.185

(e) Issuance of CAIR opt-in permit. After calculating the baseline heat input and the baseline NOX emissions rate for the unit under paragraphs (c) and (d) of this section and if the permitting authority determines that the CAIR designated representative shows that the unit meets the requirements for a CAIR NOX opt-in unit in §97.180 and meets the elements certified in §97.183(a)(2), the permitting authority will issue a CAIR opt-in permit. The permitting authority will provide a copy of the CAIR opt-in permit to the Administrator, who will then establish a compliance account for the source that includes the CAIR NOX opt-in unit unless the source already has a compliance account.

(f) Issuance of denial of CAIR opt-in permit. Notwithstanding paragraphs (a) through (e) of this section, if at any time before issuance of a CAIR opt-in permit for the unit, the permitting authority determines that the CAIR designated representative fails to show that the unit meets the requirements for a CAIR NOX opt-in unit in §97.180 or meets the elements certified in §97.183(a)(2), the permitting authority will issue a denial of a CAIR opt-in permit for the unit.

(g) Date of entry into CAIR NOX Annual Trading Program. A unit for which an initial CAIR opt-in permit is issued by the permitting authority shall become a CAIR NOX opt-in unit, and a CAIR NOX unit, as of the later of January 1, 2009 or January 1 of the first control period during which such CAIR opt-in permit is issued.

(h) Repowered CAIR NOX opt-in unit. If CAIR designated representative requests, and the permitting authority issues a CAIR opt-in permit providing for, allocation to a CAIR NOX opt-in unit of CAIR NOX allowances under §97.188(c) and such unit is repowered after its date of entry into the CAIR NOX Annual Trading Program under paragraph (g) of this section, the repowered unit shall be treated as a CAIR NOX opt-in unit replacing the original CAIR NOX opt-in unit, as of the date of start-up of the repowered unit’s combustion chamber.

(i) Date of start-up of CAIR NOX opt-in unit. Notwithstanding paragraphs (c) and (d) of this section, as of the date of start-up under paragraph (h)(1) of this section, the repowered unit shall be deemed to have the same date of commencement of operation, date of commencement of commercial operation, baseline heat input, and baseline NOX emission rate as the original CAIR NOX opt-in unit, and the original CAIR NOX opt-in unit shall no longer be treated as a CAIR NOX opt-in unit or a CAIR NOX unit.

§ 97.185 CAIR opt-in permit contents.

(a) Each CAIR opt-in permit will contain:

1. All elements required for a complete CAIR permit application under §97.122;
2. The certification in §97.183(a)(2);
3. The unit’s baseline heat input under §97.184(c);
4. The unit’s baseline NOX emission rate under §97.184(d);
5. A statement whether the unit is to be allocated CAIR NOX allowances under §97.188(b) or §97.188(c) (subject to the conditions in §§97.184(h) and 97.186(g));
6. A statement that the unit may withdraw from the CAIR NOX Annual Trading Program only in accordance with §97.186; and
7. A statement that the unit is subject to, and the owners and operators of the unit must comply with, the requirements of §97.187.

(b) Each CAIR opt-in permit is deemed to incorporate automatically the definitions of terms under §97.102 and, upon recordation by the Administrator under subpart FF or GG of this part or this subpart, every allocation, transfer, or deduction of CAIR NOX allowances to or from the compliance account of the source that includes a CAIR NOX opt-in unit covered by the CAIR opt-in permit.

(c) The CAIR opt-in permit shall be included, in a format specified by the permitting authority, in the CAIR permit for the source where the CAIR NOX opt-in unit is located and in a title V operating permit or other federally enforceable permit for the source.
§ 97.186 Withdrawal from CAIR NO\textsubscript{X} Annual Trading Program.

Except as provided under paragraph (g) of this section, a CAIR NO\textsubscript{X} opt-in unit may withdraw from the CAIR NO\textsubscript{X} Annual Trading Program, but only if the permitting authority issues a notification to the CAIR designated representative of the CAIR NO\textsubscript{X} opt-in unit of the acceptance of the withdrawal of the CAIR NO\textsubscript{X} opt-in unit in accordance with paragraph (d) of this section.

(a) Requesting withdrawal. In order to withdraw a CAIR NO\textsubscript{X} opt-in unit from the CAIR NO\textsubscript{X} Annual Trading Program, the CAIR designated representative of the CAIR NO\textsubscript{X} opt-in unit shall submit to the permitting authority a request to withdraw effective as of midnight of December 31 of a specified calendar year, which date must be at least 4 years after December 31 of the year of entry into the CAIR NO\textsubscript{X} Annual Trading Program under §97.184(g).

The request must be submitted no later than 90 days before the requested effective date of withdrawal.

(b) Conditions for withdrawal. Before a CAIR NO\textsubscript{X} opt-in unit covered by a request under paragraph (a) of this section may withdraw from the CAIR NO\textsubscript{X} Annual Trading Program and the CAIR opt-in permit may be terminated under paragraph (e) of this section, the following conditions must be met:

(1) For the control period ending on the date on which the withdrawal is to be effective, the source that includes the CAIR NO\textsubscript{X} opt-in unit must meet the requirement to hold CAIR NO\textsubscript{X} allowances under §97.106(c) and cannot have any excess emissions.

(2) After the requirement for withdrawal under paragraph (b)(1) of this section is met, the Administrator will deduct from the compliance account of the source that includes the CAIR NO\textsubscript{X} opt-in unit CAIR NO\textsubscript{X} allowances equal in amount to and allocated for the same or a prior control period as any CAIR NO\textsubscript{X} allowances allocated to the CAIR NO\textsubscript{X} opt-in unit under §97.188 for any control period for which the withdrawal is to be effective. If there are no remaining CAIR NO\textsubscript{X} units at the source, the Administrator will close the compliance account, and the owners and operators of the CAIR NO\textsubscript{X} opt-in unit may submit a CAIR NO\textsubscript{X} allowance transfer for any remaining CAIR NO\textsubscript{X} allowances to another CAIR NO\textsubscript{X} Allowance Tracking System in accordance with subpart GG of this part.

(c) Notification. (1) After the requirements for withdrawal under paragraphs (a) and (b) of this section are met (including deduction of the full amount of CAIR NO\textsubscript{X} allowances required), the permitting authority will issue a notification to the CAIR designated representative of the CAIR NO\textsubscript{X} opt-in unit of the acceptance of the withdrawal of the CAIR NO\textsubscript{X} opt-in unit as of midnight on December 31 of the calendar year for which the withdrawal was requested.

(2) If the requirements for withdrawal under paragraphs (a) and (b) of this section are not met, the permitting authority will issue a notification to the CAIR designated representative of the CAIR NO\textsubscript{X} opt-in unit that the CAIR NO\textsubscript{X} opt-in unit’s request to withdraw is denied. Such CAIR NO\textsubscript{X} opt-in unit shall continue to be a CAIR NO\textsubscript{X} opt-in unit.

(d) Permit amendment. After the permitting authority issues a notification under paragraph (c)(1) of this section that the requirements for withdrawal have been met, the permitting authority will revise the CAIR permit covering the CAIR NO\textsubscript{X} opt-in unit to terminate the CAIR opt-in permit for such unit as of the effective date specified under paragraph (c)(1) of this section. The unit shall continue to be a CAIR NO\textsubscript{X} opt-in unit until the effective date of the termination and shall comply with all requirements under the CAIR NO\textsubscript{X} Annual Trading Program concerning any control periods for which the unit is a CAIR NO\textsubscript{X} opt-in unit, even if such requirements arise or must be complied with after the withdrawal takes effect.

(e) Reapplication upon failure to meet conditions of withdrawal. If the permitting authority denies the CAIR NO\textsubscript{X} opt-in unit’s request to withdraw, the CAIR designated representative may submit another request to withdraw in accordance with paragraphs (a) and (b) of this section.

(f) Ability to reapply to the CAIR NO\textsubscript{X} Annual Trading Program. Once a CAIR NO\textsubscript{X} opt-in unit withdraws from the
§ 97.187 Change in regulatory status.

(a) Notification. If a CAIR NO\textsubscript{X} opt-in unit becomes a CAIR NO\textsubscript{X} unit under §97.104, then the CAIR designated representative shall notify in writing the permitting authority of such change in the CAIR NO\textsubscript{X} opt-in unit’s regulatory status, within 30 days of such change.

(b) Permitting authority’s and Administrator’s actions. (1) If a CAIR NO\textsubscript{X} opt-in unit becomes a CAIR NO\textsubscript{X} unit under §97.104, the permitting authority will revise the CAIR NO\textsubscript{X} opt-in unit’s CAIR opt-in permit to meet the requirements of a CAIR permit under §97.123, and remove the CAIR opt-in permit provisions, as of the date on which the CAIR NO\textsubscript{X} opt-in unit becomes a CAIR NO\textsubscript{X} unit under §97.104.

(2)(i) The Administrator will deduct from the compliance account of the source that includes the CAIR NO\textsubscript{X} opt-in unit that becomes a CAIR NO\textsubscript{X} unit under §97.104, the following amount of CAIR NO\textsubscript{X} allowances:

(A) The amount of CAIR NO\textsubscript{X} allowances otherwise allocated to the CAIR NO\textsubscript{X} opt-in unit (as a CAIR NO\textsubscript{X} unit) under §97.142 for the control period that includes the date on which the CAIR NO\textsubscript{X} opt-in unit becomes a CAIR NO\textsubscript{X} unit under §97.104; and

(B) If the date on which the CAIR NO\textsubscript{X} opt-in unit becomes a CAIR NO\textsubscript{X} unit under §97.104 is not December 31, the CAIR NO\textsubscript{X} allowances allocated to the CAIR NO\textsubscript{X} opt-in unit under §97.188 for the control period that includes the date on which the CAIR NO\textsubscript{X} opt-in unit becomes a CAIR NO\textsubscript{X} unit under §97.104, multiplied by the ratio of the number of days in the control period, starting with the date on which the CAIR NO\textsubscript{X} opt-in unit becomes a CAIR NO\textsubscript{X} unit under §97.104 divided by the total number of days in the control period and rounded to the nearest whole allowance as appropriate.

(ii) If the date on which the CAIR NO\textsubscript{X} opt-in unit becomes a CAIR NO\textsubscript{X} unit under §97.104 is not December 31, the following amount of CAIR NO\textsubscript{X} allowances will be allocated to the CAIR NO\textsubscript{X} opt-in unit (as a CAIR NO\textsubscript{X} unit) under §97.142 for the control period that includes the date on which the CAIR NO\textsubscript{X} opt-in unit becomes a CAIR NO\textsubscript{X} unit under §97.104:

(A) The amount of CAIR NO\textsubscript{X} allowances otherwise allocated to the CAIR NO\textsubscript{X} opt-in unit (as a CAIR NO\textsubscript{X} unit) under §97.142 for the control period multiplied by:

(B) The ratio of the number of days, in the control period, starting with the date on which the CAIR NO\textsubscript{X} opt-in unit becomes a CAIR NO\textsubscript{X} unit under §97.104, divided by the total number of days in the control period; and

(C) Rounded to the nearest whole allowance as appropriate.

§ 97.188 CAIR NOx allowance allocations to CAIR NOx opt-in units.

(a) Timing requirements. (1) When the CAIR opt-in permit is issued under §97.184(e), the permitting authority will allocate CAIR NOx allowances to the CAIR NOx opt-in unit, and submit to the Administrator the allocation for the control period in which a CAIR NOx opt-in unit enters the CAIR NOx Annual Trading Program under §97.184(g), in accordance with paragraph (b) or (c) of this section.

(2) By no later than October 31 of the control period after the control period in which a CAIR NOx opt-in unit enters the CAIR NOx Annual Trading Program under §97.184(g) and October 31 of each year thereafter, the permitting authority will allocate CAIR NOx allowances to the CAIR NOx opt-in unit, and submit to the Administrator the allocation for the control period that includes such submission deadline and in which the unit is a CAIR NOx opt-in unit, in accordance with paragraph (b) or (c) of this section.

(b) Calculation of allocation. For each control period for which a CAIR NOx opt-in unit is to be allocated CAIR NOx allowances, the permitting authority will allocate in accordance with the following procedures, if provided in a State implementation plan revision submitted in accordance with §51.123(p)(3)(i), (ii), or (iii) of this chapter and approved by the Administrator:

(1) The heat input (in mmBtu) used for calculating the CAIR NOx allowance allocation will be the lesser of:

(i) The CAIR NOx opt-in unit’s baseline heat input determined under §97.184(c); or

(ii) The CAIR NOx opt-in unit’s heat input, as determined in accordance with subpart HH of this part, for the immediately prior control period, except when the allocation is being calculated for the control period in which the CAIR NOx opt-in unit enters the CAIR NOx Annual Trading Program under §97.184(g).

(2) The NOx emission rate (in lb/mmBtu) used for calculating CAIR NOx allowance allocations will be the lesser of:

(i) The CAIR NOx opt-in unit’s baseline NOx emissions rate (in lb/mmBtu) determined under §97.184(d) and multiplied by 70 percent; or

(ii) The most stringent State or Federal NOx emissions limitation applicable to the CAIR NOx opt-in unit at any time during the control period for which CAIR NOx allowances are to be allocated.

(3) The permitting authority will allocate CAIR NOx allowances to the CAIR NOx opt-in unit in an amount equaling the heat input under paragraph (b)(1) of this section, multiplied by the NOx emission rate under paragraph (b)(2) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole allowance as appropriate.

(c) Notwithstanding paragraph (b) of this section and if the CAIR designated representative requests, and the permitting authority issues a CAIR opt-in permit (based on a demonstration of the intent to repower stated under §97.183(a)(5)) providing for, allocation to a CAIR NOx opt-in unit of CAIR NOx allowances under this paragraph (subject to the conditions in §§97.184(h) and 97.186(g)), the permitting authority will allocate to the CAIR NOx opt-in unit as follows, if provided in a State implementation plan revision submitted in accordance with ( 51.123(p)(3)(i), (ii), or (iii) of this chapter and approved by the Administrator:

(1) For each control period in 2009 through 2014 for which the CAIR NOx opt-in unit is to be allocated CAIR NOx allowances,

(i) The heat input (in mmBtu) used for calculating CAIR NOx allowance allocations will be determined as described in paragraph (b)(1) of this section.

(ii) The NOx emission rate (in lb/mmBtu) used for calculating CAIR NOx allowance allocations will be the lesser of:

(A) The CAIR NOx opt-in unit’s baseline NOx emissions rate (in lb/mmBtu) determined under §97.184(d); or

(B) The most stringent State or Federal NOx emissions limitation applicable to the CAIR NOx opt-in unit at any time during the control period in which the CAIR NOx opt-in unit enters the CAIR NOx Annual Trading Program under §97.184(g).

(iii) The permitting authority will allocate CAIR NOx allowances to the
CAIR NO\textsubscript{X} opt-in unit in an amount equaling the heat input under paragraph (c)(1)(i) of this section, multiplied by the NO\textsubscript{X} emission rate under paragraph (c)(1)(ii) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole allowance as appropriate.

(2) For each control period in 2015 and thereafter for which the CAIR NO\textsubscript{X} opt-in unit is to be allocated CAIR NO\textsubscript{X} allowances,

(i) The heat input (in mmBtu) used for calculating the CAIR NO\textsubscript{X} allowance allocations will be determined as described in paragraph (b)(1) of this section.

(ii) The NO\textsubscript{X} emission rate (in lb/mmBtu) used for calculating the CAIR NO\textsubscript{X} allowance allocation will be the lesser of:

(A) 0.15 lb/mmBtu;

(B) The CAIR NO\textsubscript{X} opt-in unit’s baseline NO\textsubscript{X} emissions rate (in lb/mmBtu) determined under §97.184(d);

(C) The most stringent State or Federal NO\textsubscript{X} emissions limitation applicable to the CAIR NO\textsubscript{X} opt-in unit at any time during the control period for which CAIR NO\textsubscript{X} allowances are to be allocated.

(iii) The permitting authority will allocate CAIR NO\textsubscript{X} allowances to the CAIR NO\textsubscript{X} opt-in unit in an amount equaling the heat input under paragraph (c)(2)(i) of this section, multiplied by the NO\textsubscript{X} emission rate under paragraph (c)(2)(ii) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole allowance as appropriate.

(d) Recordation. If provided in a State implementation plan revision submitted in accordance with §51.123(p)(3)(i), (ii), or (iii) of this chapter and approved by the Administrator:

(1) The Administrator will record, in the compliance account of the source that includes the CAIR NO\textsubscript{X} opt-in unit, the CAIR NO\textsubscript{X} allowances allocated by the permitting authority to the CAIR NO\textsubscript{X} opt-in unit under paragraph (a)(2) of this section.

APPENDIX A TO PART 97—STATES WITH APPROVED STATE IMPLEMENTATION PLAN REVISIONS CONCERNING CAIR NO\textsubscript{X} OPT-IN UNITS

1. The following States have State Implementation Plan revisions under §51.123(p)(3) of this chapter approved by the Administrator and establishing procedures providing for CAIR NO\textsubscript{X} opt-in units under subpart II of this part and allocation of CAIR NO\textsubscript{X} allowances to such units under §97.188(b):

Indiana
Michigan
North Carolina
Ohio
South Carolina
Tennessee

2. The following States have State Implementation Plan revisions under §51.123(p)(3) of this chapter approved by the Administrator and establishing procedures providing for CAIR NO\textsubscript{X} opt-in units under subpart II of this part and allocation of CAIR NO\textsubscript{X} allowances to such units under §97.188(c):

Indiana
Michigan
Ohio
North Carolina
South Carolina
Tennessee


Subpart AAA—CAIR SO\textsubscript{2} Trading Program General Provisions

§ 97.201 Purpose.

This subpart and subparts BBB through III set forth the general provisions and the designated representative, permitting, allowance, monitoring, and opt-in provisions for the Federal Clean Air Interstate Rule (CAIR) SO\textsubscript{2} Trading Program, under section 110 of the Clean Air Act and §52.36 of this chapter, as a means of mitigating interstate transport of fine particulates and sulfur dioxide.

§ 97.202 Definitions.

The terms used in this subpart and subparts BBB through III shall have
the meanings set forth in this section as follows:

Account number means the identification number given by the Administrator to each CAIR SO2 Allowance Tracking System account.

Acid Rain emissions limitation means a limitation on emissions of sulfur dioxide or nitrogen oxides under the Acid Rain Program.

Acid Rain Program means a multi-state sulfur dioxide and nitrogen oxides air pollution control and emission reduction program established by the Administrator under title IV of the CAA and parts 72 through 78 of this chapter.

Administrator means the Administrator of the United States Environmental Protection Agency or the Administrator's duly authorized representative.

Allocate or allocation means, with regard to CAIR SO2 allowances issued under the Acid Rain Program, the determination by the Administrator of the amount of such CAIR SO2 allowances to be initially credited to a CAIR SO2 unit or other entity and, with regard to CAIR SO2 allowances issued under §97.288 or provisions of a State implementation plan that are approved under §51.124(o)(1) or (2) or (r) of this chapter, the determination by a permitting authority of the amount of such CAIR SO2 allowances to be initially credited to a CAIR SO2 unit or other entity.

Allowance transfer deadline means, for a control period, midnight of March 1 (if it is a business day), or midnight of the first business day thereafter (if March 1 is not a business day), immediately following the control period and is the deadline by which a CAIR SO2 allowance transfer must be submitted for recordation in a CAIR SO2 source's compliance account in order to be used to meet the source's CAIR SO2 emissions limitation for such control period in accordance with §97.254.

Alternate CAIR designated representative means, for a CAIR SO2 source and each CAIR SO2 unit at the source, the natural person who is authorized by the owners and operators of the source and all such units at the source, in accordance with subparts BBB and III of this part, to act on behalf of the CAIR designated representative in matters pertaining to the CAIR SO2 Trading Program. If the CAIR SO2 source is also a CAIR NOx source, then this natural person shall be the same person as the alternate CAIR designated representative under the CAIR NOx Annual Trading Program. If the CAIR SO2 source is also a CAIR NOX Ozone Season source, then this natural person shall be the same person as the alternate CAIR designated representative under the CAIR NOx Ozone Season Trading Program. If the CAIR SO2 source is also subject to the Acid Rain Program, then this natural person shall be the same person as the alternate designated representative under the Acid Rain Program. If the CAIR SO2 source is also subject to the Hg Budget Trading Program, then this natural person shall be the same person as the alternate Hg designated representative under the Hg Budget Trading Program.

Automated data acquisition and handling system or DAHS means that component of the continuous emission monitoring system, or other emissions monitoring system approved for use under subpart HHH of this part, designed to interpret and convert individual output signals from pollutant concentration monitors, flow monitors, diluent gas monitors, and other component parts of the monitoring system to produce a continuous record of the measured parameters in the measurement units required by subpart HHH of this part.

Biomass means—

(1) Any organic material grown for the purpose of being converted to energy;

(2) Any organic byproduct of agriculture that can be converted into energy; or

(3) Any material that can be converted into energy and is nonmerchantable for other purposes, that is segregated from other nonmerchantable material, and that is:

(i) A forest-related organic resource, including mill residues, precommercial thinnings, slash, brush, or byproduct from conversion of trees to merchantable material; or

(ii) A wood material, including pallets, crates, dunnage, manufacturing and construction materials (other than

pressure-treated, chemically-treated, or painted wood products), and landscape or right-of-way tree trimmings. **Boiler** means an enclosed fossil- or other-fuel-fired combustion device used to produce heat and to transfer heat to recirculating water, steam, or other medium.

**Bottoming-cycle cogeneration unit** means a cogeneration unit in which the energy input to the unit is first used to produce useful thermal energy and at least some of the reject heat from the useful thermal energy application or process is then used for electricity production.

**CAIR authorized account representative** means, with regard to a general account, a responsible natural person who is authorized, in accordance with subparts BBB, FFF, and III of this part, to transfer and otherwise dispose of CAIR SO₂ allowances held in the general account and, with regard to a compliance account, the CAIR designated representative of the source.

**CAIR designated representative** means, for a CAIR SO₂ source and each CAIR SO₂ unit at the source, the natural person who is authorized by the owners and operators of the source and all such units at the source, in accordance with subparts BBB and III of this part, to represent and legally bind each owner and operator in matters pertaining to the CAIR SO₂ Trading Program. If the CAIR SO₂ source is also a CAIR NOₓ source, then this natural person shall be the same person as the CAIR designated representative under the CAIR NOₓ Annual Trading Program. If the CAIR SO₂ source is also a CAIR NOₓ Ozone Season source, this natural person shall be the same person as the CAIR designated representative under the CAIR NOₓ Ozone Season Trading Program. If the CAIR SO₂ source is also subject to the Acid Rain Program, then this natural person shall be the same person as the designated representative under the Acid Rain Program.

**CAIR NOₓ Annual Trading Program** means a multi-state nitrogen oxides air pollution control and emission reduction program established by the Administrator in accordance with subparts AA through II of this part and §§ 51.123(p) and 52.35 of this chapter or approved and administered by the Administrator in accordance with subparts AA through II of part 96 of this chapter and §§ 51.123(o)(1) or (2) of this chapter, as a means of mitigating interstate transport of fine particulates and nitrogen oxides.

**CAIR NOₓ Ozone Season source** means a source that is subject to the CAIR NOₓ Ozone Season Trading Program.

**CAIR NOₓ Ozone Season Trading Program** means a multi-state nitrogen oxides air pollution control and emission reduction program established by the Administrator in accordance with subparts AAAA through IIII of this part and §§ 51.123(ee) and 52.35 of this chapter or approved and administered by the Administrator in accordance with subparts AAAA through IIII of part 96 and §§ 51.123(aa)(1) or (2) (and (bb)(1)), (bb)(2), or (dd) of this chapter, as a means of mitigating interstate transport of ozone and nitrogen oxides.

**CAIR NOₓ source** means a source that is subject to the CAIR NOₓ Annual Trading Program.

**CAIR permit** means the legally binding and federally enforceable written document, or portion of such document, issued by the permitting authority under subpart CCC of this part, including any permit revisions, specifying the CAIR SO₂ Trading Program requirements applicable to a CAIR SO₂ source, to each CAIR SO₂ unit at the source, and to the owners and operators and the CAIR designated representative of the source and each such unit.

**CAIR SO₂ allowance** means a limited authorization issued by the Administrator under the Acid Rain Program, by a permitting authority under § 97.288, or by a permitting authority under provisions of a State implementation plan that are approved under §§ 51.124(o)(1) or (2) or (r) of this chapter, to emit sulfur dioxide during the control period of the specified calendar year for which the authorization is allocated or of any calendar year thereafter under the CAIR SO₂ Trading Program as follows:
(1) For one CAIR SO₂ allowance allocated for a control period in a year before 2010, one ton of sulfur dioxide, except as provided in §97.254(b);

(2) For one CAIR SO₂ allowance allocated for a control period in 2010 through 2014, 0.50 ton of sulfur dioxide, except as provided in §97.254(b); and

(3) For one CAIR SO₂ allowance allocated for a control period in 2015 or later, 0.35 ton of sulfur dioxide, except as provided in §97.254(b).

(4) An authorization to emit sulfur dioxide that is not issued under the Acid Rain Program, §97.288, or provisions of a State implementation plan that are approved under §51.124(o)(1) or (2) or (r) of this chapter shall not be a CAIR SO₂ allowance.

CAIR SO₂ allowance deduction or deduction CAIR SO₂ allowances means the permanent withdrawal of CAIR SO₂ allowances by the Administrator from a compliance account, e.g., in order to account for a specified number of tons of sulfur dioxide emissions from all CAIR SO₂ units at a CAIR SO₂ source for a control period, determined in accordance with subpart HHH of this part, or to account for excess emissions.

CAIR SO₂ Allowance Tracking System means the system by which the Administrator records allocations, deductions, and transfers of CAIR SO₂ allowances under the CAIR SO₂ Trading Program. This is the same system as the Allowance Tracking System under §72.2 of this chapter by which the Administrator records allocations, deductions, and transfers of Acid Rain SO₂ allowances under the Acid Rain Program.

CAIR SO₂ Allowance Tracking System established by the Administrator for purposes of recording the allocation, holding, transferring, or deducting of CAIR SO₂ allowances. Such allowances will be allocated, held, deducted, or transferred only as whole allowances.

CAIR SO₂ allowances held or hold CAIR SO₂ allowances means the CAIR SO₂ allowances recorded by the Administrator, or submitted to the Administrator for recordation, in accordance with subparts FFF, GGG, and III of this part or part 73 of this chapter, in a CAIR SO₂ Allowance Tracking System account.

CAIR SO₂ emissions limitation means, for a CAIR SO₂ source, the tonnage equivalent, in SO₂ emissions in a control period, of the CAIR SO₂ allowances available for deduction for the source under §97.254(a) and (b) for the control period.

CAIR SO₂ source means a source that includes one or more CAIR SO₂ units.

CAIR SO₂ Trading Program means a multi-state sulfur dioxide air pollution control and emission reduction program established by the Administrator in accordance with subparts AAA through III of this part and §§51.124(r) and 52.36 of this chapter or approved and administered by the Administrator in accordance with subparts AAA through III of part 96 of this chapter and §51.124(o) (1) or (2) of this chapter, as a means of mitigating interstate transport of fine particulates and sulfur dioxide.

CAIR SO₂ unit means a unit that is subject to the CAIR SO₂ Trading Program under §97.204 and, except for purposes of §97.205, a CAIR SO₂ opt-in unit under subpart III of this part.

Certifying official means:

(1) For a corporation, a president, secretary, treasurer, or vice-president or the corporation in charge of a principal business function or any other person who performs similar policy or decision-making functions for the corporation;

(2) For a partnership or sole proprietorship, a general partner or the proprietor respectively; or

(3) For a local government entity or State, Federal, or other public agency, a principal executive officer or ranking elected official.

Clean Air Act or CAA means the Clean Air Act, 42 U.S.C. 7401, et seq.

Coal means any solid fuel classified as anthracite, bituminous, subbituminous, or lignite.

Coal-derived fuel means any fuel (whether in a solid, liquid, or gaseous state) produced by the mechanical, thermal, or chemical processing of coal.

Coal-fired means combusting any amount of coal or coal-derived fuel, alone, or in combination with any amount of any other fuel.
Cogeneration unit means a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine:

(1) Having equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy; and

(2) Producing during the 12-month period starting on the date the unit first produces electricity and during any calendar year after the calendar year in which the unit first produces electricity—

(i) For a topping-cycle cogeneration unit, useful thermal energy not less than 5 percent of total energy output; and

(ii) For a bottoming-cycle cogeneration unit, useful power not less than 45 percent of total energy input;

(3) Provided that the total energy input under paragraphs (2)(i)(B) and (2)(ii) of this definition shall equal the unit’s total energy input from all fuel except biomass if the unit is a boiler.

Combustion turbine means:

(1) An enclosed device comprising a compressor, a combustor, and a turbine and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine; and

(2) If the enclosed device under paragraph (1) of this definition is combined cycle, any associated duct burner, heat recovery steam generator, and steam turbine.

Commence commercial operation means, with regard to a unit:

(1) To have begun to produce steam, gas, or other heated medium used to generate electricity for sale or use, including test generation, except as provided in §97.205 and §97.284(h).

(1) For a unit that is a CAIR SO₂ unit under §97.204 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the date of commencement of commercial operation of the unit, which shall continue to be treated as the same unit.

(ii) For a unit that is a CAIR SO₂ unit under §97.204 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), such date shall remain the replaced unit’s date of commencement of commercial operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of commercial operation as defined in paragraph (1) or (2) of this definition as appropriate.

(2) Notwithstanding paragraph (1) of this definition and except as provided in §97.205, for a unit that is not a CAIR SO₂ unit under §97.204 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition, the unit’s date for commencement of commercial operation shall be the date on which the unit becomes a CAIR SO₂ unit under §97.204.

(i) For a unit with a date for commencement of commercial operation as defined in paragraph (2) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the date of commencement of commercial operation of the unit, which shall continue to be treated as the same unit.

(ii) For a unit with a date for commencement of commercial operation as defined in paragraph (2) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), such date shall remain the replaced unit’s date of commencement of commercial operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of commercial operation as defined in paragraph (1) or (2) of this definition as appropriate.

Commence operation means:
(1) To have begun any mechanical, chemical, or electronic process, including, with regard to a unit, start-up of a unit’s combustion chamber, except as provided in § 97.284(h).

(2) For a unit that undergoes a physical change (other than replacement of the unit by a unit at the same source) after the date the unit commences operation as defined in paragraph (1) of this definition, such date shall remain the date of commencement of operation of the unit, which shall continue to be treated as the same unit.

(3) For a unit that is replaced by a unit at the same source (e.g., repowered) after the date the unit commences operation as defined in paragraph (1) of this definition, such date shall remain the replaced unit’s date of commencement of operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of operation as defined in paragraph (1), (2), or (3) of this definition as appropriate, except as provided in § 97.284(h).

Common stack means a single flue through which emissions from 2 or more units are exhausted.

Compliance account means a CAIR SO₂ Allowance Tracking System account, established by the Administrator for a CAIR SO₂ source subject to an Acid Rain emissions limitations under § 73.31(a) or (b) of this chapter or for any other CAIR SO₂ source under subpart FFF or III of this part, in which any CAIR SO₂ allowance allocations for the CAIR SO₂ units at the source are initially recorded and in which are held any CAIR SO₂ allowances available for use for a control period in order to meet the source’s CAIR SO₂ emissions limitation in accordance with § 97.254.

Continuous emission monitoring system or CEMS means the equipment required under subpart HHH of this part to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of sulfur dioxide emissions, stack gas volumetric flow rate, stack gas moisture content, and oxygen or carbon dioxide concentration (as applicable), in a manner consistent with part 75 of this chapter. The following systems are the principal types of continuous emission monitoring systems required under subpart HHH of this part:

(1) A flow monitoring system, consisting of a stack flow rate monitor and an automated data acquisition and handling system and providing a permanent, continuous record of stack gas volumetric flow rate, in standard cubic feet per hour (scfh);

(2) A sulfur dioxide monitoring system, consisting of a SO₂ pollutant concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of SO₂ emissions, in parts per million (ppm);

(3) A moisture monitoring system, as defined in § 75.11(b)(2) of this chapter and providing a permanent, continuous record of the stack gas moisture content, in percent H₂O;

(4) A carbon dioxide monitoring system, consisting of a CO₂ pollutant concentration monitor (or an oxygen monitor plus suitable mathematical equations from which the CO₂ concentration is derived) and an automated data acquisition and handling system and providing a permanent, continuous record of CO₂ emissions, in percent CO₂;

(5) An oxygen monitoring system, consisting of an O₂ concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of O₂ in percent O₂.

Control period means the period beginning January 1 of a calendar year, except as provided in § 97.206(c)(2), and ending on December 31 of the same year, inclusive.

Emissions means air pollutants exhausted from a unit or source into the atmosphere, as measured, recorded, and reported to the Administrator by the CAIR designated representative and as determined by the Administrator in accordance with subpart HHH of this part.

Excess emissions means any ton, or portion of a ton, of sulfur dioxide emitted by the CAIR SO₂ units at a CAIR SO₂ source during a control period that exceeds the CAIR SO₂ emissions limitation for the source, provided that any portion of a ton of excess emissions
shall be treated as one ton of excess emissions.

Fossil fuel means natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material.

Fossil-fuel-fired means, with regard to a unit, combusting any amount of fossil fuel in any calendar year.

General account means a CAIR SO2 Allowance Tracking System account, established under subpart FFF of this part, that is not a compliance account.

Generator means a device that produces electricity.

Heat input means, with regard to a specified period of time, the product (in mmBtu/time) of the gross calorific value of the fuel (in Btu/lb) divided by 1,000,000 Btu/mmBtu and multiplied by the fuel feed rate into a combustion device (in lb of fuel/time), as measured, recorded, and reported to the Administrator by the CAIR designated representative and determined by the Administrator in accordance with subpart HHH of this part and excluding the heat derived from preheated combustion air, recirculated flue gases, or exhaust from other sources.

Heat input rate means the amount of heat input (in mmBtu) divided by unit operating time (in hr) or, with regard to a specific fuel, the amount of heat input attributed to the fuel (in mmBtu) divided by the unit operating time (in hr) during which the unit combusts the fuel.

Hg Budget Trading Program means a multi-state Hg air pollution control and emission reduction program approved and administered by the Administrator in accordance with subpart HHHH of part 60 of this chapter and §60.2(h)(6), or established by the Administrator under section 111 of the Clean Air Act, as a means of reducing national Hg emissions.

Life-of-the-unit, firm power contractual arrangement means a unit participation power sales agreement under which a utility or industrial customer reserves, or is entitled to receive, a specified amount or percentage of nameplate capacity and associated energy generated by any specified unit and pays its proportional amount of such unit's total costs, pursuant to a contract:

(1) For the life of the unit;
(2) For a cumulative term of no less than 30 years, including contracts that permit an election for early termination; or
(3) For a period no less than 25 years or 70 percent of the economic useful life of the unit determined as of the time the unit is built, with option rights to purchase or release some portion of the nameplate capacity and associated energy generated by the unit at the end of the period.

Maximum design heat input means the maximum amount of fuel per hour (in Btu/hr) that a unit is capable of combusting on a steady state basis as of the initial installation of the unit as specified by the manufacturer of the unit.

Monitoring system means any monitoring system that meets the requirements of subpart HHH of this part, including a continuous emissions monitoring system, an alternative monitoring system, or an excepted monitoring system under part 75 of this chapter.

Most stringent State or Federal SO2 emissions limitation means, with regard to a unit, the lowest SO2 emissions limitation (in terms of lb/mmBtu) that is applicable to the unit under State or Federal law, regardless of the averaging period to which the emissions limitation applies.

Nameplate capacity means, starting from the initial installation of a generator, the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady state basis and during continuous operation (when not restricted by seasonal or other deratings) as of such installation as specified by the manufacturer of the generator or, starting from the completion of any subsequent physical change in the generator resulting in an increase in the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady state basis and during continuous operation (when not restricted by seasonal or other deratings), such increased maximum amount as of such completion as specified by the person conducting the physical change.

Operator means any person who operates, controls, or supervises a CAIR
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SO₂ unit or a CAIR SO₂ source and shall include, but not be limited to, any holding company, utility system, or plant manager of such a unit or source.

Owner means any of the following persons:

(1) With regard to a CAIR SO₂ source or a CAIR SO₂ unit at a source, respectively:

(i) Any holder of any portion of the legal or equitable title in a CAIR SO₂ unit at the source or the CAIR SO₂ unit;

(ii) Any holder of a leasehold interest in a CAIR SO₂ unit at the source or the CAIR SO₂ unit; or

(iii) Any purchaser of power from a CAIR SO₂ unit at the source or the CAIR SO₂ unit under a life-of-the-unit, firm power contractual arrangement; provided that, unless expressly provided for in a leasehold agreement, owner shall not include a passive lessor, or a person who has an equitable interest through such lessor, whose rental payments are not based (either directly or indirectly) on the revenues or income from such CAIR SO₂ unit; or

(2) With regard to any general account, any person who has an ownership interest with respect to the CAIR SO₂ allowances held in the general account and who is subject to the binding agreement for the CAIR authorized account representative to represent the person’s ownership interest with respect to CAIR SO₂ allowances.

Permitting authority means the State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to issue or revise permits to meet the requirements of the CAIR SO₂ Trading Program or, if no such agency has been so authorized, the Administrator.

Potential electrical output capacity means 33 percent of a unit’s maximum design heat input, divided by 3,413 Btu/kWh, divided by 1,000 kWh/MWh, and multiplied by 8,760 hr/yr.

Receive or receipt of means, when referring to the permitting authority or the Administrator, to come into possession of a document, information, or correspondence (whether sent in hard copy or by authorized electronic transmission), as indicated in an official log, or by a notation made on the document, information, or correspondence, by the permitting authority or the Administrator in the regular course of business.

Recordation, record, or recorded means, with regard to CAIR SO₂ allowances, the movement of CAIR SO₂ allowances by the Administrator into or between CAIR SO₂ Allowance Tracking System accounts, for purposes of allocation, transfer, or deduction.

Reference method means any direct test method of sampling and analyzing for an air pollutant as specified in § 75.22 of this chapter.

Replacement, replace, or replaced means, with regard to a unit, the demolishing of a unit, or the permanent shutdown and permanent disabling of a unit, and the construction of another unit (the replacement unit) to be used instead of the demolished or shutdown unit (the replaced unit).

Repowered means, with regard to a unit, replacement of a coal-fired boiler with one of the following coal-fired technologies at the same source as the coal-fired boiler:

(1) Atmospheric or pressurized fluidized bed combustion;

(2) Integrated gasification combined cycle;

(3) Magnetohydrodynamics;

(4) Direct and indirect coal-fired turbines;

(5) Integrated gasification fuel cells; or

(6) As determined by the Administrator in consultation with the Secretary of Energy, a derivative of one or more of the technologies under paragraphs (1) through (5) of this definition and any other coal-fired technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of January 1, 2005.

Sequential use of energy means:

(1) For a topping-cycle cogeneration unit, the use of reject heat from electricity production in a useful thermal energy application or process; or

(2) For a bottoming-cycle cogeneration unit, the use of reject heat from
useful thermal energy application or process in electricity production.

Serial number means, for a CAIR SO₂ allowance, the unique identification number assigned to each CAIR SO₂ allowance by the Administrator.

Solid waste incineration unit means a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine that is a “solid waste incineration unit” as defined in section 129(g)(1) of the Clean Air Act.

Source means all buildings, structures, or installations located in one or more contiguous or adjacent properties under common control of the same person or persons. For purposes of section 502(c) of the Clean Air Act, a “source,” including a “source” with multiple units, shall be considered a single “facility.”

State means one of the States or the District of Columbia that is subject to the CAIR SO₂ Trading Program pursuant to §52.35 of this chapter.

Submit or serve means to send or transmit a document, information, or correspondence to the person specified in accordance with the applicable regulation:

(1) In person;

(2) By United States Postal Service; or

(3) By other means of dispatch or transmission and delivery. Compliance with any “submission” or “service” deadline shall be determined by the date of dispatch, transmission, or mailing and not the date of receipt.

Title V operating permit means a permit issued under title V of the Clean Air Act and part 70 or part 71 of this chapter.

Total energy input means, with regard to a cogeneration unit, total energy of all forms supplied to the cogeneration unit, excluding energy produced by the cogeneration unit itself. Each form of energy supplied shall be measured by the lower heating value of that form of energy calculated as follows:

\[
LHV = \text{HHV} - 10.55(W + 9H)
\]

Where:

- \(LHV\) = lower heating value of fuel in Btu/lb,
- \(HHV\) = higher heating value of fuel in Btu/lb,
- \(W\) = Weight % of moisture in fuel, and
- \(H\) = Weight % of hydrogen in fuel.

Total energy output means, with regard to a cogeneration unit, the sum of useful power and useful thermal energy produced by the cogeneration unit.

Unit means a stationary, fossil-fuel-fired boiler or combustion turbine or other stationary, fossil-fuel-fired combustion device. Unit operating day means a calendar day in which a unit combusts any fuel.

Unit operating hour or hour of unit operation means an hour in which a unit combusts any fuel.

Useful power means, with regard to a cogeneration unit, electricity or mechanical energy made available for use, excluding any such energy used in the power production process (which process includes, but is not limited to, any on-site processing of treatment of fuel combusted at the unit and any on-site emission controls).

Useful thermal energy means, with regard to a cogeneration unit, thermal energy that is:

(1) Made available to an industrial or commercial process (not a power production process), excluding any heat contained in condensate return or makeup water;
(2) Used in a heating application (e.g., space heating or domestic hot water heating); or
(3) Used in a space cooling application (i.e., thermal energy used by an absorption chiller).

Utility power distribution system means the portion of an electricity grid owned or operated by a utility and dedicated to delivering electricity to customers.

§ 97.203 Measurements, abbreviations, and acronyms.

Measurements, abbreviations, and acronyms used in this subpart and subparts BBB through III are defined as follows:

Btu—British thermal unit.
CO₂—carbon dioxide.
H₂O—water.
Hg—mercury.
hr—hour.
kW—kilowatt electrical.
kWh—kilowatt hour.
lb—pound.
mmBtu—million Btu.
MWe—megawatt electrical.
MWh—megawatt hour.
NOₓ—nitrogen oxides.
O₂—oxygen.
ppm—parts per million.
scfh—standard cubic feet per hour.
SO₂—sulfur dioxide.
yr—year.

§ 97.204 Applicability.

(a) Except as provided in paragraph (b) of this section:

(1) The following units in a State shall be CAIR SO₂ units, and any source that includes one or more such units shall be a CAIR SO₂ source, subject to the requirements of this subpart and subparts BBB through HHH of this part: any stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine serving at any time, since the later of November 15, 1990 or the start-up of the unit’s combustion chamber, a generator with nameplate capacity of more than 25 MWe producing electricity for sale, the unit shall become a CAIR SO₂ unit as provided in paragraph (a)(1) of this section on the first date on which it both combusts fossil fuel and serves such generator.

(b) The units in a State that meet the requirements set forth in paragraph (b)(1)(i), (b)(2)(i), or (b)(2)(ii) of this section shall not be CAIR SO₂ units:

(1)(i) Any unit that is a CAIR SO₂ unit under paragraph (a)(1) or (2) of this section:

(A) Qualifying as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and continuing to qualify as a cogeneration unit; and

(B) Not serving at any time, since the later of November 15, 1990 or the start-up of the unit’s combustion chamber, a generator with nameplate capacity of more than 25 MWe supplying in any calendar year more than one-third of the unit’s potential electric output capacity or 219,000 MWh, whichever is greater, to any utility power distribution system for sale.

(ii) If a unit qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and meets the requirements of paragraphs (b)(1)(i) of this section for at least one calendar year, but subsequently no longer meets all such requirements, the unit shall become a CAIR SO₂ unit starting on the earlier of January 1 after the first calendar year during which the unit first no longer qualifies as a cogeneration unit or January 1 after the first calendar year during which the unit no longer meets the requirements of paragraph (b)(1)(i)(B) of this section.

(2)(i) Any unit that is a CAIR SO₂ unit under paragraph (a)(1) or (2) of this section commencing operation before January 1, 1985:

(A) Qualifying as a solid waste incineration unit; and

(B) With an average annual fuel consumption of non-fossil fuel for 1985–1987 exceeding 80 percent (on a Btu basis) and an average annual fuel consumption of non-fossil fuel for any 3 consecutive calendar years after 1990 exceeding 80 percent (on a Btu basis).
§ 97.205 Retired unit exemption.

(a)(1) Any CAIR SO\textsubscript{2} unit that is permanently retired and is not a CAIR SO\textsubscript{2} opt-in unit under subpart III of this part shall be exempt from the CAIR SO\textsubscript{2} Trading Program, except for the provisions of this section, §§97.202, 97.203, 97.204, 97.206(c)(4) through (7), 97.207, 97.208, and subparts BBB, FFF, and GGG of this part.

(2) The exemption under paragraph (a)(1) of this section shall become effective the day on which the CAIR SO\textsubscript{2} unit is permanently retired. Within 30 days of the unit’s permanent retirement, the CAIR designated representative shall submit a statement to the permitting authority otherwise responsible for administering any CAIR permit for the unit and shall submit a copy of the statement to the Administrator. The statement shall state, in a format prescribed by the permitting authority, that the unit was permanently retired on a specific date and will comply with the requirements of paragraph (b) of this section.

(3) After receipt of the statement under paragraph (a)(2) of this section,
the permitting authority will amend any permit under subpart CCC of this part covering the source at which the unit is located to add the provisions and requirements of the exemption under paragraphs (a)(1) and (b) of this section.

(b) Special provisions. (1) A unit exempt under paragraph (a) of this section shall not emit any sulfur dioxide, starting on the date that the exemption takes effect.

(2) For a period of 5 years from the date the records are created, the owners and operators of a unit exempt under paragraph (a) of this section shall retain, at the source that includes the unit, records demonstrating that the unit is permanently retired. The 5-year period for keeping records may be extended for cause, at any time before the end of the period, in writing by the permitting authority or the Administrator. The owners and operators bear the burden of proof that the unit is permanently retired.

(3) The owners and operators and, to the extent applicable, the CAIR designated representative of a unit exempt under paragraph (a) of this section shall comply with the requirements of the CAIR SO\textsubscript{2} Trading Program concerning all periods for which the exemption is not in effect, even if such requirements arise, or must be complied with, after the exemption takes effect.

(4) A unit exempt under paragraph (a) of this section and located at a source that is required, or but for this exemption would be required, to have a title V operating permit and each CAIR SO\textsubscript{2} unit required to have a title V operating permit at the source shall:

(i) Submit to the permitting authority a complete CAIR permit application under §97.222 in accordance with the deadlines specified in §97.221; and

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review a CAIR permit application and issue or deny a CAIR permit.

(5) On the earlier of the following dates, a unit exempt under paragraph (a) of this section shall lose its exemption:

(i) The date on which the CAIR designated representative submits a CAIR permit application for the unit under paragraph (b)(4) of this section;

(ii) The date on which the CAIR designated representative is required under paragraph (b)(4) of this section to submit a CAIR permit application for the unit; or

(iii) The date on which the unit resumes operation, if the CAIR designated representative is not required to submit a CAIR permit application for the unit.

(6) For the purpose of applying monitoring, reporting, and recordkeeping requirements under subpart HHH of this part, a unit that loses its exemption under paragraph (a) of this section shall be treated as a unit that commences commercial operation on the first date on which the unit resumes operation.

§97.206 Standard requirements.

(a) Permit requirements. (1) The CAIR designated representative of each CAIR SO\textsubscript{2} source required to have a title V operating permit and each CAIR SO\textsubscript{2} unit required to have a title V operating permit at the source shall:

(i) Submit to the permitting authority under §97.222 in accordance with the deadlines specified in §97.221; and

(ii) Submit in a timely manner any supplemental information that the permitting authority determines is necessary in order to review a CAIR permit application and issue or deny a CAIR permit.

(2) The owners and operators of each CAIR SO\textsubscript{2} source required to have a title V operating permit and each CAIR SO\textsubscript{2} unit required to have a title V operating permit at the source shall have a CAIR permit issued by the permitting authority under subpart CCC of this part for the source and operate the source and the unit in compliance with such CAIR permit.

(3) Except as provided in subpart III of this part, the owners and operators of a CAIR SO\textsubscript{2} source that is not otherwise required to have a title V operating permit and each CAIR SO\textsubscript{2} unit that is not otherwise required to have a title V operating permit are not required to submit a CAIR permit application, and to have a CAIR permit, under subpart CCC of this part for such CAIR SO\textsubscript{2} source and such CAIR SO\textsubscript{2} unit.
§ 97.206 40 CFR Ch. I (7–1–11 Edition)

(b) Monitoring, reporting, and record-keeping requirements. (1) The owners and operators, and the CAIR designated representative, of each CAIR SO2 source and each CAIR SO2 unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of subpart HHH of this part.

(2) The emissions measurements recorded and reported in accordance with subpart HHH of this part shall be used to determine compliance by each CAIR SO2 source with the CAIR SO2 emissions limitations under paragraph (c) of this section.

(c) Sulfur dioxide emission requirements. (1) As of the allowance transfer deadline for a control period, the owners and operators of each CAIR SO2 source and each CAIR SO2 unit at the source shall hold, in the source’s compliance account, a tonnage equivalent in CAIR SO2 allowances available for compliance deductions for the control period, as determined in accordance with §97.254(a) and (b), not less than the tons of total sulfur dioxide emissions for the control period from all CAIR SO2 units at the source, as determined in accordance with subpart HHH of this part.

(2) A CAIR SO2 unit shall be subject to the requirements under paragraph (c)(1) of this section for the control period starting on the later of January 1, 2010 or the deadline for meeting the unit(s) monitor certification requirements under §97.272(b)(1), (2), or (5) and for each control period thereafter.

(3) A CAIR SO2 allowance shall not be deducted, for compliance with the requirements under paragraph (c)(1) of this section, for a control period in a calendar year before the year for which the CAIR SO2 allowance was allocated.

(4) CAIR SO2 allowances shall be held in, deducted from, or transferred into or among CAIR SO2 Allowance Tracking System accounts in accordance with subparts FFF, GGG, and III of this part.

(5) A CAIR SO2 allowance is a limited authorization to emit sulfur dioxide in accordance with the CAIR SO2 Trading Program. No provision of the CAIR SO2 Trading Program, the CAIR permit application, the CAIR permit, or an exemption under §97.205 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.

(6) A CAIR SO2 allowance does not constitute a property right.

(7) Upon recordation by the Administrator under subpart FFF, GGG, or III of this part, every allocation, transfer, or deduction of a CAIR SO2 allowance to or from a CAIR SO2 source’s compliance account is incorporated automatically in any CAIR permit of the source.

(d) Excess emissions requirements. If a CAIR SO2 source emits sulfur dioxide during any control period in excess of the CAIR SO2 emissions limitation, then:

(1) The owners and operators of the source and each CAIR SO2 unit at the source shall surrender the CAIR SO2 allowances required for deduction under §97.254(d)(1) and pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act or applicable State law; and

(2) Each ton of such excess emissions and each day of such control period shall constitute a separate violation of this subpart, the Clean Air Act, and applicable State law.

(e) Recordkeeping and reporting requirements. (1) Unless otherwise provided, the owners and operators of the CAIR SO2 source and each CAIR SO2 unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the permitting authority or the Administrator.

(1) The certificate of representation under §97.213 for the CAIR designated representative for the source and each CAIR SO2 unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation under §97.213 changing the CAIR designated representative.

(ii) All emissions monitoring information, in accordance with subpart...
HHH of this part, provided that to the extent that subpart HHH of this part provides for a 3-year period for recordkeeping, the 3-year period shall apply.

(iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the CAIR SO\textsubscript{2} Trading Program.

(iv) Copies of all documents used to complete a CAIR permit application and any other submission under the CAIR SO\textsubscript{2} Trading Program or to demonstrate compliance with the requirements of the CAIR SO\textsubscript{2} Trading Program.

(2) The CAIR designated representative of a CAIR SO\textsubscript{2} source and each CAIR SO\textsubscript{2} unit at the source shall submit the reports required under the CAIR SO\textsubscript{2} Trading Program, including those under subpart HHH of this part.

§ 97.208 Appeal procedures.

The appeal procedures for decisions of the Administrator under the CAIR SO\textsubscript{2} Trading Program are set forth in part 78 of this chapter.

Subpart BBB—CAIR Designated Representative for CAIR SO\textsubscript{2} Sources

§ 97.210 Authorization and responsibilities of CAIR designated representative.

(a) Except as provided under §97.211, each CAIR SO\textsubscript{2} source, including all CAIR SO\textsubscript{2} units at the source, shall have one and only one CAIR designated representative, with regard to all matters under the CAIR SO\textsubscript{2} Trading Program concerning the source or any CAIR SO\textsubscript{2} unit at the source.

(b) The CAIR designated representative of the CAIR SO\textsubscript{2} source shall be selected by an agreement binding on the owners and operators of the source and all CAIR SO\textsubscript{2} units at the source.

(c) Upon receipt by the Administrator of a complete certificate of representation under §97.213, the CAIR designated representative of the source shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each owner and operator of the CAIR SO\textsubscript{2} source represented and each CAIR SO\textsubscript{2} unit at the source in all matters pertaining to the CAIR SO\textsubscript{2} Trading Program, notwithstanding any agreement between the CAIR designated representative and such owners and operators.

§ 97.207 Computation of time.

(a) Unless otherwise stated, any time period scheduled, under the CAIR SO\textsubscript{2} Trading Program, to begin before the occurrence of an act or event shall be computed so that the period ends the day before the act or event occurs.

(b) Unless otherwise stated, any time period scheduled, under the CAIR SO\textsubscript{2} Trading Program, to begin before the occurrence of an act or event shall be computed so that the period ends the day before the act or event occurs.
and operators shall be bound by any decision or order issued to the CAIR designated representative by the permitting authority, the Administrator, or a court regarding the source or unit.

(d) No CAIR permit will be issued, no emissions data reports will be accepted, and no CAIR SO\textsubscript{2} Allowance Tracking System account will be established for a CAIR SO\textsubscript{2} unit at a source, until the Administrator has received a complete certificate of representation under §97.213 for a CAIR designated representative of the source and the CAIR SO\textsubscript{2} units at the source.

(e)(1) Each submission under the CAIR SO\textsubscript{2} Trading Program shall be submitted, signed, and certified by the CAIR designated representative for each CAIR SO\textsubscript{2} source on behalf of which the submission is made. Each such submission shall include the following certification statement by the CAIR designated representative: “I am authorized to make this submission on behalf of the owners and operators of the source or units for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(2) The permitting authority and the Administrator will accept or act on a submission made on behalf of owner or operators of a CAIR SO\textsubscript{2} source or a CAIR SO\textsubscript{2} unit only if the submission has been made, signed, and certified in accordance with paragraph (e)(1) of this section.

§ 97.212 Changing CAIR designated representative and alternate CAIR designated representative; changes in owners and operators.

(a) Changing CAIR designated representative. The CAIR designated representative may be changed at any time upon receipt by the Administrator of a superseding complete certificate of representation under §97.213. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CAIR designated representative before the time and date when the Administrator receives the superseding certificate of representation shall be binding on the new CAIR designated representative and the owners and operators of the CAIR SO\textsubscript{2} source and the CAIR SO\textsubscript{2} units at the source.

(b) Changing alternate CAIR designated representative. The alternate CAIR designated representative may be changed at any time upon receipt by the Administrator of a superseding complete certificate of representation under §97.213. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate CAIR designated representative before the time and date when the Administrator receives the
superseding certificate of representation shall be binding on the new alternate CAIR designated representative and the owners and operators of the CAIR SO\(_2\) source and the CAIR SO\(_2\) units at the source.

(c) Changes in owners and operators.

(1) In the event an owner or operator of a CAIR SO\(_2\) source or a CAIR SO\(_2\) unit is not included in the list of owners and operators in the certificate of representation under §97.213, such owner or operator shall be deemed to be subject to and bound by the certificate of representation, the representations, actions, inactions, and submissions of the CAIR designated representative and any alternate CAIR designated representative of the source or unit, and the decisions and orders of the permitting authority, the Administrator, or a court, as if the owner or operator were included in such list.

(2) Within 30 days following any change in the owners and operators of a CAIR SO\(_2\) source or a CAIR SO\(_2\) unit, including the addition of a new owner or operator, the CAIR designated representative or any alternate CAIR designated representative shall submit a revision to the certificate of representation under §97.213 amending the list of owners and operators to include the change.

§97.213 Certificate of representation.

(a) A complete certificate of representation for a CAIR designated representative or an alternate CAIR designated representative shall include the following elements in a format prescribed by the Administrator:

(1) Identification of the CAIR SO\(_2\) source, and each CAIR SO\(_2\) unit at the source, for which the certificate of representation is submitted, including identification and nameplate capacity of each generator served by each such unit.

(2) The name, address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the CAIR designated representative and any alternate CAIR designated representative.

(3) A list of the owners and operators of the CAIR SO\(_2\) source and of each CAIR SO\(_2\) unit at the source.

(4) The following certification statements by the CAIR designated representative and any alternate CAIR designated representative—

(i) “I certify that I was selected as the CAIR designated representative or alternate CAIR designated representative, as applicable, by an agreement binding on the owners and operators of the source and each CAIR SO\(_2\) unit at the source.”

(ii) “I certify that I have all the necessary authority to carry out my duties and responsibilities under the CAIR SO\(_2\) Trading Program on behalf of the owners and operators of the source and of each CAIR SO\(_2\) unit at the source and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions.”

(iii) “I certify that the owners and operators of the source and of each CAIR SO\(_2\) unit at the source shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.”

(iv) “Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, a CAIR SO\(_2\) unit, or where a utility or industrial customer purchases power from a CAIR SO\(_2\) unit under a life-of-the-unit, firm power contractual arrangement, I certify that: I have given a written notice of my selection as the ‘CAIR designated representative’ or ‘alternate CAIR designated representative’, as applicable, and of the agreement by which I was selected to each owner and operator of the source and of each CAIR SO\(_2\) unit at the source; and CAIR SO\(_2\) allowances and proceeds of transactions involving CAIR SO\(_2\) allowances will be deemed to be held or distributed in proportion to each holder’s legal, equitable, leasehold, or contractual reservation or entitlement, except that, if such multiple holders have expressly provided for a different distribution of CAIR SO\(_2\) allowances by contract, CAIR SO\(_2\) allowances and proceeds of transactions involving CAIR SO\(_2\) allowances will be deemed to be held or distributed in accordance with the contract.”
§ 97.214 Objections concerning CAIR designated representative.

(a) Once a complete certificate of representation under §97.213 has been submitted and received, the permitting authority and the Administrator will rely on the certificate of representation unless and until a superseding complete certificate of representation under §97.213 is received by the Administrator.

(b) Except as provided in §97.212(a) or (b), no objection or other communication submitted to the permitting authority or the Administrator concerning the authorization, or any representation, action, inaction, or submission, of the CAIR designated representative shall affect any representation, action, inaction, or submission of the CAIR designated representative or the finality of any decision or order by the permitting authority or the Administrator under the CAIR SO2 Trading Program.

(c) Neither the permitting authority nor the Administrator will adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of any CAIR designated representative, including private legal disputes concerning the proceeds of CAIR SO2 allowance transfers.

§ 97.215 Delegation by CAIR designated representative and alternate CAIR designated representative.

(a) A CAIR designated representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under this part.

(b) An alternate CAIR designated representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under this part.

(c) In order to delegate authority to make an electronic submission to the Administrator in accordance with paragraph (a) or (b) of this section, the CAIR designated representative or alternate CAIR designated representative, as appropriate, must submit to the Administrator a notice of delegation, in a format prescribed by the Administrator, that includes the following elements:

1. The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of such CAIR designated representative or alternate CAIR designated representative;

2. The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of each such natural person (referred to as an “agent”);

3. For each such natural person, a list of the type or types of electronic submissions under paragraph (a) or (b) of this section for which authority is delegated to him or her; and

4. The following certification statements by such CAIR designated representative or alternate CAIR designated representative:

   (i) “I agree that any electronic submission to the Administrator that is by an agent identified in this notice of delegation and of a type listed for such agent in this notice of delegation and that is made when I am a CAIR designated representative or alternate CAIR designated representative, as appropriate, and before this notice of delegation is superseded by another notice of delegation under 40 CFR 97.215(d) shall be deemed to be an electronic submission by me.”

   (ii) “Until this notice of delegation is superseded by another notice of delegation under 40 CFR 97.215(d), I agree to maintain an e-mail account and to notify the Administrator immediately of any change in my e-mail address unless all delegation of authority by me under 40 CFR 97.215 is terminated.”
(d) A notice of delegation submitted under paragraph (c) of this section shall be effective, with regard to the CAIR designated representative or alternate CAIR designated representative identified in such notice, upon receipt of such notice by the Administrator and until receipt by the Administrator of a superseding notice of delegation submitted by such CAIR designated representative or alternate CAIR designated representative, as appropriate. The superseding notice of delegation may replace any previously identified agent, add a new agent, or eliminate entirely any delegation of authority.

(e) Any electronic submission covered by the certification in paragraph (c)(4)(i) of this section and made in accordance with a notice of delegation effective under paragraph (d) of this section shall be deemed to be an electronic submission by the CAIR designated representative or alternate CAIR designated representative submitting such notice of delegation.

Subpart CCC—Permits

§ 97.220 General CAIR SO\textsubscript{2} Trading Program permit requirements.

(a) For each CAIR SO\textsubscript{2} source required to have a title V operating permit or required, under subpart III of this part, to have a title V operating permit or other federally enforceable permit, such permit shall include a CAIR permit administered by the permitting authority for the title V operating permit or the federally enforceable permit as applicable. The CAIR portion of the title V permit or other federally enforceable permit as applicable shall be administered in accordance with the permitting authority’s title V operating permits regulations promulgated under part 70 or 71 of this chapter or the permitting authority’s regulations for other federally enforceable permits as applicable, except as provided otherwise by §97.205, this subpart, and subpart III of this part.

(b) Each CAIR permit shall contain, with regard to the CAIR SO\textsubscript{2} source and the CAIR SO\textsubscript{2} units at the source covered by the CAIR permit, all applicable CAIR SO\textsubscript{2} Trading Program, CAIR NO\textsubscript{x} Annual Trading Program, and CAIR NO\textsubscript{x} Ozone Season Trading Program requirements and shall be a complete and separable portion of the title V operating permit or other federally enforceable permit under paragraph (a) of this section.

§ 97.221 Submission of CAIR permit applications.

(a) Duty to apply. The CAIR designated representative of any CAIR SO\textsubscript{2} source required to have a title V operating permit shall submit to the permitting authority a complete CAIR permit application under §97.222 for the source covering each CAIR SO\textsubscript{2} unit at the source at least 18 months (or such lesser time provided by the permitting authority before the later of January 1, 2010 or the date on which the CAIR SO\textsubscript{2} unit commences commercial operation, except as provided in §97.283(a).

(b) Duty to reapply. For a CAIR SO\textsubscript{2} source required to have a title V operating permit, the CAIR designated representative shall submit a complete CAIR permit application under §97.222 for the source covering each CAIR SO\textsubscript{2} unit at the source to renew the CAIR permit in accordance with the permitting authority’s title V operating permits regulations addressing permit renewal, except as provided in §97.283(b).

§ 97.222 Information requirements for CAIR permit applications.

A complete CAIR permit application shall include the following elements concerning the CAIR SO\textsubscript{2} source for which the application is submitted, in a format prescribed by the permitting authority:

(a) Identification of the CAIR SO\textsubscript{2} source;

(b) Identification of each CAIR SO\textsubscript{2} unit at the CAIR SO\textsubscript{2} source; and

(c) The standard requirements under §97.206.

§ 97.223 CAIR permit contents and term.

(a) Each CAIR permit will contain, in a format prescribed by the permitting authority, all elements required for a complete CAIR permit application under §97.222.

(b) Each CAIR permit is deemed to incorporate automatically the definitions of terms under §97.202 and, upon
recordation by the Administrator under subpart FFF, GGG, or III of this part, every allocation, transfer, or deduction of a CAIR SO\textsubscript{2} allowance to or from the compliance account of the CAIR SO\textsubscript{2} source covered by the permit.

(c) The term of the CAIR permit will be set by the permitting authority, as necessary to facilitate coordination of the renewal of the CAIR permit with issuance, revision, or renewal of the CAIR SO\textsubscript{2} source’s title V operating permit or other federally enforceable permit as applicable.

§ 97.224 CAIR permit revisions.

Except as provided in §97.223(b), the permitting authority will revise the CAIR permit, as necessary, in accordance with the permitting authority’s title V operating permits regulations or the permitting authority’s regulations for other federally enforceable permits as applicable addressing permit revisions.

Subparts DDD—EEE [Reserved]

Subpart FFF—CAIR SO\textsubscript{2} Allowance Tracking System

§ 97.250 [Reserved]

§ 97.251 Establishment of accounts.

(a) Compliance accounts. Except as provided in §97.284(e), upon receipt of a complete certificate of representation under §97.213, the Administrator will establish a compliance account for the CAIR SO\textsubscript{2} source for which the certificate of representation was submitted, unless the source already has a compliance account.

(b) General accounts—(1) Application for general account. (i) Any person may apply to open a general account for the purpose of holding and transferring CAIR SO\textsubscript{2} allowances. An application for a general account may designate one and only one CAIR authorized account representative and one and only one alternate CAIR authorized account representative who may act on behalf of the CAIR authorized account representative. The agreement by which the alternate CAIR authorized account representative is selected shall include a procedure for authorizing the alternate CAIR authorized account representative to act in lieu of the CAIR authorized account representative.

(ii) A complete application for a general account shall be submitted to the Administrator and shall include the following elements in a format prescribed by the Administrator:

(A) Name, mailing address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the CAIR authorized account representative and any alternate CAIR authorized account representative.

(B) Organization name and type of organization, if applicable;

(C) A list of all persons subject to a binding agreement for the CAIR authorized account representative and any alternate CAIR authorized account representative to represent their ownership interest with respect to the CAIR SO\textsubscript{2} allowances held in the general account;

(D) The following certification statement by the CAIR authorized account representative and any alternate CAIR authorized account representative: “I certify that I was selected as the CAIR authorized account representative or the alternate CAIR authorized account representative, as applicable, by an agreement that is binding on all persons who have an ownership interest with respect to CAIR SO\textsubscript{2} allowances held in the general account. I certify that I have all the necessary authority to carry out my duties and responsibilities under the CAIR SO\textsubscript{2} Trading Program on behalf of such persons and that each such person shall be fully bound by my representations, actions, inactions, or submissions and by any order or decision issued to me by the Administrator or a court regarding the general account.”

(E) The signature of the CAIR authorized account representative and any alternate CAIR authorized account representative and the dates signed.

(iii) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the application for a general account shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or
evaluate the sufficiency of such documents, if submitted.

(2) Authorization of CAIR authorized account representative and alternate CAIR authorized account representative.

(i) Upon receipt by the Administrator of a complete application for a general account under paragraph (b)(1) of this section:

(A) The Administrator will establish a general account for the person or persons for whom the application is submitted.

(B) The CAIR authorized account representative and any alternate CAIR authorized account representative for the general account shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each person who has an ownership interest with respect to CAIR SO\textsubscript{2} allowances held in the general account in all matters pertaining to the CAIR SO\textsubscript{2} Trading Program, notwithstanding any agreement between the CAIR authorized account representative or any alternate CAIR authorized account representative and such person. Any such person shall be bound by any order or decision issued to the CAIR authorized account representative or any alternate CAIR authorized account representative by the Administrator or a court regarding the general account.

(C) Any representation, action, inaction, or submission by any alternate CAIR authorized account representative shall be deemed to be a representation, action, inaction, or submission by the CAIR authorized account representative.

(ii) Each submission concerning the general account shall be submitted, signed, and certified by the CAIR authorized account representative or any alternate CAIR authorized account representative for the persons having an ownership interest with respect to the CAIR SO\textsubscript{2} allowances held in the general account. Each such submission shall include the following certification statement by the CAIR authorized account representative or any alternate CAIR authorized account representative: "I am authorized to make this submission on behalf of the persons having an ownership interest with respect to the CAIR SO\textsubscript{2} allowances held in the general account. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment."

(iii) The Administrator will accept or act on a submission concerning the general account only if the submission has been made, signed, and certified in accordance with paragraph (b)(2)(ii) of this section.

(3) Changing CAIR authorized account representative and alternate CAIR authorized account representative; changes in persons with ownership interest.

(i) The CAIR authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CAIR authorized account representative shall be binding on the new CAIR authorized account representative and the persons with an ownership interest with respect to the CAIR SO\textsubscript{2} allowances in the general account.

(ii) The alternate CAIR authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate CAIR authorized account representative shall be binding on the new alternate CAIR authorized account representative and the persons with an ownership interest with respect to the CAIR SO\textsubscript{2} allowances in the general account.

(ii) The alternate CAIR authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate CAIR authorized account representative shall be binding on the new alternate CAIR authorized account representative and the persons with an ownership interest with respect to the CAIR SO\textsubscript{2} allowances in the general account.
representative and the persons with an ownership interest with respect to the CAIR $SO_2$ allowances in the general account.

(iii)(A) In the event a person having an ownership interest with respect to CAIR $SO_2$ allowances in the general account is not included in the list of such persons in the application for a general account, such person shall be deemed to be subject to and bound by the application for a general account, the representation, actions, inactions, and submissions of the CAIR authorized account representative and any alternate CAIR authorized account representative of the account, and the decisions and orders of the Administrator or a court, as if the person were included in such list.

(B) Within 30 days following any change in the persons having an ownership interest with respect to CAIR $SO_2$ allowances in the general account, including the addition of a new person, the CAIR authorized account representative or any alternate CAIR authorized account representative shall submit a revision to the application for a general account amending the list of persons having an ownership interest with respect to the CAIR $SO_2$ allowances in the general account to include the change.

(4) Objections concerning CAIR authorized account representative and alternate CAIR authorized account representative.

(i) Once a complete application for a general account under paragraph (b)(1) of this section has been submitted and received, the Administrator will rely on the application unless and until a superseding complete application for a general account under paragraph (b)(1) of this section is received by the Administrator.

(ii) Except as provided in paragraph (b)(3)(i) or (ii) of this section, no objection or other communication submitted to the Administrator concerning the authorization, or any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative for a general account shall affect any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative or the finality of any decision or order by the Administrator under the CAIR $SO_2$ Trading Program.

(iii) The Administrator will not adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative for a general account, including private legal disputes concerning the proceeds of CAIR $SO_2$ allowance transfers.

(5) Delegation by CAIR authorized account representative and alternate CAIR authorized account representative.

(i) A CAIR authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under subparts FFF and GGG of this part.

(ii) An alternate CAIR authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under subparts FFF and GGG of this part.

(iii) In order to delegate authority to make an electronic submission to the Administrator in accordance with paragraph (b)(5)(i) or (ii) of this section, the CAIR authorized account representative or alternate CAIR authorized account representative, as appropriate, must submit to the Administrator a notice of delegation, in a format prescribed by the Administrator, that includes the following elements:

(A) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of each such natural person (referred to as an "agent");

(B) The name, address, e-mail address, telephone number, and, facsimile transmission number (if any) of each such natural person (referred to as an "agent");

(C) For each such natural person, a list of the type or types of electronic submissions under paragraph (b)(5)(i) or (ii) of this section for which authority is delegated to him or her;
(D) The following certification statement by such CAIR authorized account representative or alternate CAIR authorized account representative: “I agree that any electronic submission to the Administrator that is by an agent identified in this notice of delegation and of a type listed for such agent in this notice of delegation and that is made when I am a CAIR authorized account representative or alternate CAIR authorized representative, as appropriate, and before this notice of delegation is superseded by another notice of delegation under 40 CFR 97.251(b)(5)(iv) shall be deemed to be an electronic submission by me.”; and

(E) The following certification statement by such CAIR authorized account representative or alternate CAIR authorized account representative: “Until this notice of delegation is superseded by another notice of delegation under 40 CFR 97.251(b)(5)(iv), I agree to maintain an e-mail account and to notify the Administrator immediately of any change in my e-mail address, unless all delegation of authority by me under 40 CFR 97.251(b)(5) is terminated.”.

(iv) A notice of delegation submitted under paragraph (b)(5)(iii) of this section shall be effective, with regard to the CAIR authorized account representative or alternate CAIR authorized account representative identified in such notice, upon receipt of such notice by the Administrator and until receipt by the Administrator of a superseding notice of delegation submitted by such CAIR authorized account representative or alternate CAIR authorized account representative, as appropriate. The superseding notice of delegation may replace any previously identified agent, add a new agent, or eliminate entirely any delegation of authority.

(v) Any electronic submission covered by the certification in paragraph (b)(5)(iii)(D) of this section and made in accordance with a notice of delegation effective under paragraph (b)(5)(iv) of this section shall be deemed to be an electronic submission by the CAIR designated representative or alternate CAIR designated representative submitting such notice of delegation.

(c) Account identification. The Administrator will assign a unique identifying number to each account established under paragraph (a) or (b) of this section.

§ 97.252 Responsibilities of CAIR authorized account representative.

Following the establishment of a CAIR SO₂ Allowance Tracking System account, all submissions to the Administrator pertaining to the account, including, but not limited to, submissions concerning the deduction or transfer of CAIR SO₂ allowances in the account, shall be made only by the CAIR authorized account representative for the account.

§ 97.253 Recordation of CAIR SO₂ allowances.

(a)(1) After a compliance account is established under §97.251(a) or §73.31(a) or (b) of this chapter, the Administrator will record in the compliance account any CAIR SO₂ allowance allocated to any CAIR SO₂ unit at the source for each of the 30 years starting the later of 2010 or the year in which the compliance account is established and any CAIR SO₂ allowance allocated for each of the 30 years starting the later of 2010 or the year in which the compliance account is established and transferred to the source in accordance with subpart GGG of this part or subpart D of part 73 of this chapter.

(2) In 2011 and each year thereafter, after Administrator has completed all deductions under §97.254(b), the Administrator will record in the compliance account any CAIR SO₂ allowance allocated to any CAIR SO₂ unit at the source for the new 30th year (i.e., the year that is 30 years after the calendar year for which such deductions are or could be made) and any CAIR SO₂ allowance allocated for the new 30th year and transferred to the source in accordance with subpart GGG of this part or subpart D of part 73 of this chapter.

(b)(1) After a general account is established under §97.251(b) or §73.31(c) of this chapter, the Administrator will record in the general account any CAIR SO₂ allowance allocated for each of the 30 years starting the later of 2010 or the year in which the general account is established and transferred to the general account in accordance with
§ 97.254  Compliance with CAIR SO\textsubscript{2} emissions limitation.

(a) Allowance transfer deadline. The CAIR SO\textsubscript{2} allowances are available to be deducted for compliance with a source’s CAIR SO\textsubscript{2} emissions limitation for a control period in a given calendar year only if the CAIR SO\textsubscript{2} allowances:

(1) Were allocated for the control period in the year or a prior year; and

(2) Are held in the compliance account as of the allowance transfer deadline for the control period or are transferred into the compliance account by a CAIR SO\textsubscript{2} allowance transfer correctly submitted for recordation under §§97.260 and 97.261 by the allowance transfer deadline for the control period.

(b) Deductions for compliance. Following the recordation, in accordance with §97.261, of CAIR SO\textsubscript{2} allowance transfers submitted for recordation in a source’s compliance account by the allowance transfer deadline for a control period, the Administrator will deduct from the compliance account CAIR SO\textsubscript{2} allowances available under paragraph (a) of this section in order to determine whether the source meets the CAIR SO\textsubscript{2} emissions limitation for the control period as follows:

(1) For a CAIR SO\textsubscript{2} source subject to an Acid Rain emissions limitation, the Administrator will, in the following order:

(i) Deduct the amount of CAIR SO\textsubscript{2} allowances, available under paragraph (a) of this section and not issued by a permitting authority under §97.288, that is required under §§73.35(b) and (c) of this part. If there are sufficient CAIR SO\textsubscript{2} allowances to complete this deduction, the deduction will be treated as satisfying the requirements of §§73.35(b) and (c) of this chapter.

(ii) Deduct the amount of CAIR SO\textsubscript{2} allowances, not issued by a permitting authority under §97.288, that is required under §§73.35(d) and 77.5 of this part. If there are sufficient CAIR SO\textsubscript{2} allowances to complete this deduction, the deduction will be treated as satisfying the requirements of §§73.35(d) and 77.5 of this chapter.

(iii) Treating the CAIR SO\textsubscript{2} allowances deducted under paragraph (b)(1)(i) of this section as also being deducted under this paragraph (b)(1)(ii), deduct CAIR SO\textsubscript{2} allowances available under paragraph (a) of this section (including any issued by a permitting authority under §97.288) in order to determine whether the source meets the CAIR SO\textsubscript{2} emissions limitation for the control period, as follows:

(A) Until the tonnage equivalent of the CAIR SO\textsubscript{2} allowances deducted equals, or exceeds in accordance with paragraphs (c)(1) and (2) of this section, the number of tons of total sulfur dioxide emissions, determined in accordance with subpart HHH of this part, from all CAIR SO\textsubscript{2} units at the source for the control period; or

(B) If there are insufficient CAIR SO\textsubscript{2} allowances to complete the deductions in paragraph (b)(1)(i)(A) of this section, until no more CAIR SO\textsubscript{2} allowances available under paragraph (a) of this section (including any issued by a permitting authority under §97.288) remain in the compliance account.

(2) For a CAIR SO\textsubscript{2} source not subject to an Acid Rain emissions limitation, the Administrator will deduct CAIR SO\textsubscript{2} allowances available under paragraph (a) of this section (including any issued by a permitting authority under §97.288) in order to determine whether the source meets the CAIR SO\textsubscript{2} emissions limitation for the control period, as follows:
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(i) Until the tonnage equivalent of the CAIR SO\textsubscript{2} allowances deducted equals, or exceeds in accordance with paragraphs (c)(1) and (2) of this section, the number of tons of total sulfur dioxide emissions, determined in accordance with subpart HHH of this part, from all CAIR SO\textsubscript{2} units at the source for the control period; or

(ii) If there are insufficient CAIR SO\textsubscript{2} allowances to complete the deductions in paragraph (b)(2)(i) of this section, until no more CAIR SO\textsubscript{2} allowances available under paragraph (a) of this section (including any issued by a permitting authority under §97.288) remain in the compliance account.

(c)(1) Identification of CAIR SO\textsubscript{2} allowances by serial number. The CAIR authorized account representative for a source’s compliance account may request that specific CAIR SO\textsubscript{2} allowances, identified by serial number, in the compliance account be deducted for emissions or excess emissions for a control period in accordance with paragraph (b) or (d) of this section. Such request shall be submitted to the Administrator by the allowance transfer deadline for the control period and include, in a format prescribed by the Administrator, the identification of the CAIR SO\textsubscript{2} source and the appropriate serial numbers.

(2) First-in, first-out. The Administrator will deduct CAIR SO\textsubscript{2} allowances under paragraph (b) or (d) of this section from the source’s compliance account, in the absence of an identification or in the case of a partial identification of CAIR SO\textsubscript{2} allowances by serial number under paragraph (c)(1) of this section, on a first-in, first-out (FIFO) accounting basis in the following order:

(i) Any CAIR SO\textsubscript{2} allowances that were allocated to the units at the source for a control period before 2010, in the order of recordation;

(ii) Any CAIR SO\textsubscript{2} allowances that were allocated to any entity for a control period before 2010 and transferred and recorded in the compliance account pursuant to subpart GGG of this part or subpart D of part 73 of this chapter, in the order of recordation;

(iii) Any CAIR SO\textsubscript{2} allowances that were allocated to the units at the source for a control period during 2010 through 2014, in the order of recordation;

(iv) Any CAIR SO\textsubscript{2} allowances that were allocated to any entity for a control period during 2010 through 2014 and transferred and recorded in the compliance account pursuant to subpart GGG of this part or subpart D of part 73 of this chapter, in the order of recordation;

(v) Any CAIR SO\textsubscript{2} allowances that were allocated to the units at the source for a control period in 2015 or later, in the order of recordation; and

(vi) Any CAIR SO\textsubscript{2} allowances that were allocated to any entity for a control period in 2015 or later and transferred and recorded in the compliance account pursuant to subpart GGG of this part or subpart D of part 73 of this chapter, in the order of recordation.

(d) Deductions for excess emissions. (1) After making the deductions for compliance under paragraph (b) of this section for a control period in a calendar year in which the CAIR SO\textsubscript{2} source has excess emissions, the Administrator will deduct from the source’s compliance account the tonnage equivalent in CAIR SO\textsubscript{2} allowances, allocated for the control period in the immediately following calendar year (including any issued by a permitting authority under §97.288), equal to, or exceeding in accordance with paragraphs (c)(1) and (2) of this section 3 times the following amount: the number of tons of the source’s excess emissions minus, if the source is subject to an Acid Rain emissions limitation, the amount of the CAIR SO\textsubscript{2} allowances required to be deducted under paragraph (b)(1)(ii) of this section.

(2) Any allowance deduction required under paragraph (d)(1) of this section shall not affect the liability of the owners and operators of the CAIR SO\textsubscript{2} source or the CAIR SO\textsubscript{2} units at the source for any fine, penalty, or assessment, or their obligation to comply with any other remedy, for the same violations, as ordered under the Clean Air Act or applicable State law.

(e) Recordation of deductions. The Administrator will record in the appropriate compliance account all deductions from such an account under paragraphs (b) and (d) of this section and subpart III.
§ 97.255 Administrator’s action on submissions. (1) The Administrator may review and conduct independent audits concerning any submission under the CAIR SO₂ Trading Program and make appropriate adjustments of the information in the submissions.

(2) The Administrator may deduct CAIR SO₂ allowances from or transfer CAIR SO₂ allowances to a source’s compliance account based on the information in the submissions, as adjusted under paragraph (f)(1) of this section, and record such deductions and transfers.

§ 97.255 Banking.

(a) CAIR SO₂ allowances may be banked for future use or transfer in a compliance account or a general account in accordance with paragraph (b) of this section.

(b) Any CAIR SO₂ allowance that is held in a compliance account or a general account will remain in such account unless and until the CAIR SO₂ allowance is deducted or transferred under §§97.254, §97.256, or subpart GGG or III of this part.

§ 97.256 Account error.

The Administrator may, at his or her sole discretion and on his or her own motion, correct any error in any CAIR SO₂ Allowance Tracking System account. Within 10 business days of making such correction, the Administrator will notify the CAIR authorized account representative for the account.

§ 97.257 Closing of general accounts.

(a) The CAIR authorized account representative of a general account may submit to the Administrator a request to close the account, which shall include a correctly submitted allowance transfer under §§97.260 and 97.261 for any CAIR SO₂ allowances in the account to one or more other CAIR SO₂ Allowance Tracking System accounts.

(b) If a general account has no allowance transfers in or out of the account for a 12-month period or longer and does not contain any CAIR SO₂ allowances, the Administrator may notify the CAIR authorized account representative for the account that the account will be closed after the 20-day period unless, before the end of the 20-day period, the Administrator receives a correctly submitted transfer of CAIR SO₂ allowances into the account under §§97.260 and 97.261 or a statement submitted by the CAIR authorized account representative demonstrating to the satisfaction of the Administrator good cause as to why the account should not be closed.

Subpart GGG—CAIR SO₂ Allowance Transfers

§ 97.260 Submission of CAIR SO₂ allowance transfers.

(a) A CAIR authorized account representative seeking recordation of a CAIR SO₂ allowance transfer shall submit the transfer to the Administrator. To be considered correctly submitted, the CAIR SO₂ allowance transfer shall include the following elements, in a format specified by the Administrator:

(1) The account numbers of both the transferor and transferee accounts;

(2) The serial number of each CAIR SO₂ allowance that is in the transferor account and is to be transferred; and

(3) The name and signature of the CAIR authorized account representatives of the transferor and transferee accounts and the dates signed.

(b)(1) The CAIR authorized account representative for the transferee account can meet the requirements in paragraph (a)(3) of this section by submitting, in a format prescribed by the Administrator, a statement signed by the CAIR authorized account representative for the account, which shall include the

| Account numbers of both the transferor and transferee accounts; | The serial number of each CAIR SO₂ allowance that is in the transferor account and is to be transferred; and | The name and signature of the CAIR authorized account representatives of the transferor and transferee accounts and the dates signed. |
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following: “By this signature I authorize any transfer of allowances into each account listed herein, except that I do not waive any remedies under State or Federal law to obtain correction of any erroneous transfers into such accounts. This authorization shall be binding on any CAIR authorized account representative for such account unless and until a statement signed by the CAIR authorized account representative retracting this authorization for the account is received by the Administrator.”

§ 97.261 EPA recordation.

(a) Within 5 business days (except as necessary to perform a transfer in perpetuity of CAIR SO\textsubscript{2} allowances allocated to a CAIR SO\textsubscript{2} unit or as provided in paragraph (b) of this section) of receiving a CAIR SO\textsubscript{2} allowance transfer, the Administrator will record a CAIR SO\textsubscript{2} allowance transfer by moving each CAIR SO\textsubscript{2} allowance from the transferor account to the transferee account as specified by the request, provided that:

(1) The transfer is correctly submitted under §97.260;
(2) The transferor account includes each CAIR SO\textsubscript{2} allowance identified by serial number in the transfer; and
(3) The transfer is in accordance with the limitation on transfer under §74.42 of this chapter and §74.47(c) of this chapter, as applicable.

(b) A CAIR SO\textsubscript{2} allowance transfer that is submitted for recordation after the allowance transfer deadline for a control period and that includes any CAIR SO\textsubscript{2} allowances allocated for any control period before such allowance transfer deadline will not be recorded until the Administrator completes the deductions under §97.254 for the control period immediately before such allowance transfer deadline.

(c) Where a CAIR SO\textsubscript{2} allowance transfer submitted for recordation fails to meet the requirements of paragraph (a) of this section, the Administrator will not record such transfer.

§ 97.262 Notification.

(a) Notification of recordation. Within 5 business days of recordation of a CAIR SO\textsubscript{2} allowance transfer under §97.261, the Administrator will notify the CAIR authorized account representatives of both the transferor and transferee accounts.

(b) Notification of non-recordation. Within 10 business days of receipt of a CAIR SO\textsubscript{2} allowance transfer that fails to meet the requirements of §97.261(a), the Administrator will notify the CAIR authorized account representatives of both accounts subject to the transfer of:

(1) A decision not to record the transfer, and
(2) The reasons for such non-recordation.

(c) Nothing in this section shall preclude the submission of a CAIR SO\textsubscript{2} allowance transfer for recordation following notification of non-recordation.

Subpart HHH—Monitoring and Reporting

§ 97.270 General requirements.

The owners and operators, and to the extent applicable, the CAIR designated representative, of a CAIR SO\textsubscript{2} unit, shall comply with the monitoring, recordkeeping, and reporting requirements as provided in this subpart and in subparts F and G of part 75 of this chapter. For purposes of complying with such requirements, the definitions in §97.202 and in §72.2 of this chapter shall apply, and the terms “affected unit,” “designated representative,” and “continuous emission monitoring system” (or “CEMS”) in part 75 of this chapter shall be deemed to refer to the terms “CAIR SO\textsubscript{2} unit,” “CAIR designated representative,” and “continuous emission monitoring system” or (“CEMS”) respectively, as defined in §97.202. The owner or operator of a unit that is not a CAIR SO\textsubscript{2} unit but that is monitored under §75.16(b)(2) of this chapter shall comply with the same monitoring, recordkeeping, and reporting requirements as a CAIR SO\textsubscript{2} unit.

(a) Requirements for installation, certification, and data accounting. The owner or operator of each CAIR SO\textsubscript{2} unit shall:

(1) Install all monitoring systems required under this subpart for monitoring SO\textsubscript{2} mass emissions and individual unit heat input (including all
systems required to monitor SO$_2$ concentration, stack gas moisture content, stack gas flow rate, CO$_2$ or O$_2$ concentration, and fuel flow rate, as applicable, in accordance with §§75.11 and 75.16 of this chapter;

(2) Successfully complete all certification tests required under §97.271 and meet all other requirements of this subpart and part 75 of this chapter applicable to the monitoring systems under paragraph (a)(1) of this section; and

(3) Record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section.

(b) Compliance deadlines. Except as provided in paragraph (e) of this section, the owner or operator shall meet the monitoring system certification and other requirements of paragraphs (a)(1) and (2) of this section on or before the following dates. The owner or operator shall record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section on and after the following dates.

(1) For the owner or operator of a CAIR SO$_2$ unit that commences commercial operation before July 1, 2008, by January 1, 2009.

(2) For the owner or operator of a CAIR SO$_2$ unit that commences commercial operation on or after July 1, 2008, by the later of the following dates:

(i) January 1, 2009; or

(ii) 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which the unit commences commercial operation.

(3) For the owner or operator of a CAIR SO$_2$ unit for which construction of a new stack or flue or installation of add-on SO$_2$ emission controls is completed after the applicable deadline under paragraph (b)(1), (2), (4), or (5) of this section, by 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which emissions first exit to the atmosphere through the new stack or flue or add-on SO$_2$ emissions controls.

(4) Notwithstanding the dates in paragraphs (b)(1) and (2) of this section, for the owner or operator of a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, by the date specified in §97.284(b).

(5) Notwithstanding the dates in paragraphs (b)(1) and (2) of this section, for the owner or operator of a CAIR SO$_2$ opt-in unit under subpart III of this part, by the date on which the CAIR SO$_2$ opt-in unit enters the CAIR SO$_2$ Trading Program as provided in §97.284(g).

(c) Reporting data. The owner or operator of a CAIR SO$_2$ unit that does not meet the applicable compliance date set forth in paragraph (b) of this section for any monitoring system under paragraph (a)(1) of this section shall, for each such monitoring system, determine, record, and report maximum potential (or, as appropriate, minimum potential) values for SO$_2$ concentration, stack gas flow rate, stack gas moisture content, fuel flow rate, and any other parameters required to determine SO$_2$ mass emissions and heat input in accordance with §75.31(b)(2) or (c)(3) of this chapter or section 2.4 of appendix D to part 75 of this chapter, as applicable.

(d) Prohibitions. (1) No owner or operator of a CAIR SO$_2$ unit shall use any alternative monitoring system, alternative reference method, or any other alternative to any requirement of this subpart without having obtained prior written approval in accordance with §97.275.

(2) No owner or operator of a CAIR SO$_2$ unit shall operate the unit so as to discharge, or allow to be discharged, SO$_2$ emissions to the atmosphere without accounting for all such emissions in accordance with the applicable provisions of this subpart and part 75 of this chapter.

(3) No owner or operator of a CAIR SO$_2$ unit shall disrupt the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording SO$_2$ mass emissions discharged into the atmosphere or heat input, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the applicable provisions of this subpart and part 75 of this chapter.
(4) No owner or operator of a CAIR SO\textsubscript{2} unit shall retire or permanently discontinue use of the continuous emission monitoring system, any component thereof, or any other approved monitoring system under this subpart, except under any one of the following circumstances:

(i) During the period that the unit is covered by an exemption under §97.205 that is in effect;

(ii) The owner or operator is monitoring emissions from the unit with another certified monitoring system approved, in accordance with the applicable provisions of this subpart and part 75 of this chapter, by the Administrator for use at that unit that provides emission data for the same pollutant or parameter as the retired or discontinued monitoring system; or

(iii) The CAIR designated representative submits notification of the date of certification testing of a replacement monitoring system for the retired or discontinued monitoring system in accordance with §97.271(d)(3)(i).

(e) Long-term cold storage. The owner or operator of a CAIR SO\textsubscript{2} unit is subject to the applicable provisions of part 75 of this chapter concerning units in long-term cold storage.

§ 97.271 Initial certification and recertification procedures.

(a) The owner or operator of a CAIR SO\textsubscript{2} unit shall be exempt from the initial certification requirements of this section for a monitoring system under §97.270(a)(1) if the following conditions are met:

(1) The monitoring system has been previously certified in accordance with part 75 of this chapter; and

(2) The applicable quality-assurance and quality-control requirements of §75.21 of this chapter and appendix B and appendix D to part 75 of this chapter are fully met for the certified monitoring system described in paragraph (a)(1) of this section.

(b) The recertification provisions of this section shall apply to a monitoring system under §97.270(a)(1) exempt from initial certification requirements under paragraph (a) of this section.

(c) [Reserved]
profile, the owner or operator shall recertify each continuous emission monitoring system whose accuracy is potentially affected by the change, in accordance with §75.20(b) of this chapter. Examples of changes to a continuous emission monitoring system that require recertification include: replacement of the analyzer, complete replacement of an existing continuous emission monitoring system, or change in location or orientation of the sampling probe or site. Any fuel flowmeter system under §97.270(a)(1) is subject to the recertification requirements in §75.20(g)(6) of this chapter.

(3) Approval process for initial certification and recertification. Paragraphs (d)(3)(i) through (iv) of this section apply to both initial certification and recertification of a continuous monitoring system under §97.270(a)(1). For recertifications, replace the words “certification” and “initial certification” with the word “recertification”, replace the word “certified” with the word “recertified,” and follow the procedures in §§75.20(b)(5) and (g)(7) of this chapter in lieu of the procedures in paragraph (d)(3)(v) of this section.

(i) Notification of certification. The CAIR designated representative shall submit to the appropriate EPA Regional Office and the Administrator written notice of the dates of certification testing, in accordance with §97.273.

(ii) Certification application. The CAIR designated representative shall submit to the Administrator a certification application for each monitoring system. A complete certification application shall include the information specified in §75.63 of this chapter.

(iii) Provisional certification date. The provisional certification date for a monitoring system shall be determined in accordance with §75.20(a)(3) of this chapter. A provisionally certified monitoring system may be used under the CAIR SO₂ Trading Program for a period not to exceed 120 days after receipt by the Administrator of the complete certification application for the monitoring system under paragraph (d)(3)(ii) of this section. Data measured and recorded by the provisionally certified monitoring system, in accordance with the requirements of part 75 of this chapter, will be considered valid quality-assured data (retroactive to the date and time of provisional certification), provided that the Administrator does not invalidate the provisional certification by issuing a notice of disapproval within 120 days of the date of receipt of the complete certification application by the Administrator.

(iv) Certification application approval process. The Administrator will issue a written notice of approval or disapproval of the certification application to the owner or operator within 120 days of receipt of the complete certification application under paragraph (d)(3)(ii) of this section. In the event the Administrator does not issue such a notice within such 120-day period, each monitoring system that meets the applicable performance requirements of part 75 of this chapter and is included in the certification application will be deemed certified for use under the CAIR SO₂ Trading Program.

(A) Approval notice. If the certification application is complete and shows that each monitoring system meets the applicable performance requirements of part 75 of this chapter, then the Administrator will issue a written notice of approval of the certification application within 120 days of receipt.

(B) Incomplete application notice. If the certification application is not complete, then the Administrator will issue a written notice of incompleteness that sets a reasonable date by which the CAIR designated representative must submit the additional information required to complete the certification application. If the CAIR designated representative does not comply with the notice of incompleteness by the specified date, then the Administrator may issue a notice of disapproval under paragraph (d)(3)(iv)(C) of this section. The 120-day review period shall not begin before receipt of a complete certification application.

(C) Disapproval notice. If the certification application shows that any monitoring system does not meet the performance requirements of part 75 of
this chapter or if the certification application is incomplete and the requirement for disapproval under paragraph (d)(3)(iv)(B) of this section is met, then the Administrator will issue a written notice of disapproval of the certification application. Upon issuance of such notice of disapproval, the provisional certification is invalidated by the Administrator and the data measured and recorded by each uncertified monitoring system shall not be considered valid quality-assured data beginning with the date and hour of provisional certification (as defined under §75.20(a)(3) of this chapter). The owner or operator shall follow the procedures for loss of certification in paragraph (d)(3)(v) of this section for each monitoring system that is disapproved for initial certification.

(D) Audit decertification. The Administrator may issue a notice of disapproval of the certification status of a monitor in accordance with §97.272(b).

(v) Procedures for loss of certification.
If the Administrator issues a notice of disapproval of a certification application under paragraph (d)(3)(iv)(C) of this section or a notice of disapproval of certification status under paragraph (d)(3)(iv)(D) of this section, then:
(A) The owner or operator shall substitute the following values, for each disapproved monitoring system, for each hour of unit operation during the period of invalid data specified under §75.20(a)(4)(iii), §75.20(g)(7), or §75.21(e) of this chapter and continuing until the applicable date and hour specified under §75.20(a)(5)(i) or (g)(7) of this chapter:
(1) For a disapproved SO\textsubscript{2} pollutant concentration monitor and disapproved flow monitor, respectively, the maximum potential concentration of SO\textsubscript{2} and the maximum potential flow rate, as defined in sections 2.1.1.1 and 2.1.4.1 of appendix A to part 75 of this chapter.
(2) For a disapproved moisture monitoring system and disapproved diluent gas monitoring system, respectively, the minimum potential moisture percentage and either the maximum potential CO\textsubscript{2} concentration or the minimum potential O\textsubscript{2} concentration (as applicable), as defined in sections 2.1.5, 2.1.3.1, and 2.1.3.2 of appendix A to part 75 of this chapter.
(3) For a disapproved fuel flowmeter system, the maximum potential fuel flow rate, as defined in section 2.4.2.1 of appendix D to part 75 of this chapter.
(B) The CAIR designated representative shall submit a notification of certification retest dates and a new certification application in accordance with paragraphs (d)(3)(i) and (ii) of this section.
(C) The owner or operator shall repeat all certification tests or other requirements that were failed by the monitoring system, as indicated in the Administrator’s notice of disapproval, no later than 30 unit operating days after the date of issuance of the notice of disapproval.

(e) Initial certification and recertification procedures for units using the low mass emission excepted methodology under §75.19 of this chapter. The owner or operator of a unit qualified to use the low mass emissions (LME) excepted methodology under §75.19 of this chapter shall meet the applicable certification and recertification requirements in §§75.19(a)(2) and 75.20(h) of this chapter. If the owner or operator of such a unit elects to certify a fuel flowmeter system for heat input determination, the owner or operator shall also meet the certification and recertification requirements in §75.20(g) of this chapter.

(f) Certification/recertification procedures for alternative monitoring systems. The CAIR designated representative of each unit for which the owner or operator intends to use an alternative monitoring system approved by the Administrator under subpart E of part 75 of this chapter shall comply with the applicable notification and application procedures of §75.20(f) of this chapter.
that any monitoring system should not have been certified or recertified because it did not meet a particular performance specification or other requirement under §97.271 or the applicable provisions of part 75 of this chapter, both at the time of the initial certification or recertification application submission and at the time of the audit, the Administrator will issue a notice of disapproval of the certification status of such monitoring system. For the purposes of this paragraph, an audit shall be either a field audit or an audit of any information submitted to the permitting authority or the Administrator. By issuing the notice of disapproval, the Administrator revokes prospectively the certification status of the monitoring system. The data measured and recorded by the monitoring system shall not be considered valid quality-assured data from the date of issuance of the notification of the revoked certification status until the date and time that the owner or operator completes subsequently approved initial certification or recertification tests for the monitoring system. The owner or operator shall follow the applicable initial certification or recertification procedures in §97.271 for each disapproved monitoring system.

§ 97.273 Notifications.

The CAIR designated representative for a CAIR SO\textsubscript{2} unit shall submit written notice to the Administrator in accordance with §75.61 of this chapter. §97.274 Recordkeeping and reporting.

(a) General provisions. The CAIR designated representative shall comply with all recordkeeping and reporting requirements in this section, the applicable recordkeeping and reporting requirements in subparts F and G of part 75 of this chapter, and the requirements of §97.210(e)(1).

(b) Monitoring Plans. The owner or operator of a CAIR SO\textsubscript{2} unit shall comply with requirements of §75.62 of this chapter and, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, §§97.283 and 97.284(a).

(c) Certification Applications. The CAIR designated representative shall submit an application to the Administrator within 45 days after completing all initial certification or recertification tests required under §97.271, including the information required under §75.63 of this chapter.

(d) Quarterly reports. The CAIR designated representative shall submit quarterly reports, as follows:

(1) The CAIR designated representative shall report the SO\textsubscript{2} mass emissions data and heat input data for the CAIR SO\textsubscript{2} unit, in an electronic quarterly report in a format prescribed by the Administrator, for each calendar quarter beginning with:

(i) For a unit that commences commercial operation before July 1, 2008, the calendar quarter covering January 1, 2009 through March 31, 2009;

(ii) For a unit that commences commercial operation on or after July 1, 2008, the calendar quarter corresponding to the earlier of the date of provisional certification or the applicable deadline for initial certification under §97.270(b), unless that quarter is the third or fourth quarter of 2008, in which case reporting shall commence in the quarter covering January 1, 2009 through March 31, 2009;

(iii) Notwithstanding paragraphs (d)(1)(i) and (ii) of this section, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, the calendar quarter corresponding to the date specified in §97.284(b); and

(iv) Notwithstanding paragraphs (d)(1)(i) and (ii) of this section, for a CAIR SO\textsubscript{2} opt-in unit under subpart III of this part, the calendar quarter corresponding to the date on which the CAIR SO\textsubscript{2} opt-in unit enters the CAIR SO\textsubscript{2} Trading Program as provided in §97.284(g).

(2) The CAIR designated representative shall submit each quarterly report to the Administrator within 30 days following the end of the calendar quarter covered by the report. Quarterly reports shall be submitted in the manner specified in §75.64 of this chapter.
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§ 97.282—CAIR SO₂ Opt-in Units

§ 97.280 Applicability.

A CAIR SO₂ opt-in unit must be a unit that:

(a) Is located in a State that submits, and for which the Administrator approves, a State implementation plan revision in accordance with §51.124(c)(1), (2), or (3) of this chapter establishing procedures concerning CAIR opt-in units;

(b) Is not a CAIR SO₂ unit under §97.204 and is not covered by a retired unit exemption under §97.205 that is in effect;

(c) Is not covered by a retired unit exemption under §72.8 of this chapter that is in effect and is not an opt-in source under part 74 of this chapter;

(d) Has or is required or qualified to have a Title V operating permit or other federally enforceable permit; and

(e) Vents all of its emissions to a stack and can meet the monitoring, recordkeeping, and reporting requirements of subpart HH of this part.

§ 97.281 General.

(a) Except as otherwise provided in §§97.201 through 97.204, §§97.206 through 97.208, and subparts BBB and CCC and subparts FFF through HHH of this part, a CAIR SO₂ opt-in unit shall be treated as a CAIR SO₂ unit for purposes of applying such sections and subparts of this part.

(b) Solely for purposes of applying, as provided in this subpart, the requirements of subpart HHH of this part to a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under this subpart, such unit shall be treated as a CAIR SO₂ unit before issuance of a CAIR opt-in permit for such unit.

§ 97.282 CAIR designated representative.

Any CAIR SO₂ opt-in unit, and any unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under this subpart, located at the same source as one or more CAIR SO₂ units shall have the same CAIR designated representative.

§ 97.285 Petitions.

The CAIR designated representative of a CAIR SO₂ unit may submit a petition under §75.66 of this chapter to the Administrator requesting approval to apply an alternative to any requirement of this subpart. Application of an alternative to any requirement of this subpart is in accordance with this subpart only to the extent that the petition is approved in writing by the Administrator, in consultation with the permitting authority.
§ 97.283 Applying for CAIR opt-in permit.

(a) Applying for initial CAIR opt-in permit. The CAIR designated representative of a unit meeting the requirements for a CAIR SO\textsubscript{2} opt-in unit in §97.280 may apply for an initial CAIR opt-in permit at any time, except as provided under §97.286(f) and (g), and, in order to apply, must submit the following:

1. A complete CAIR permit application under §97.222;
2. A certification, in a format specified by the permitting authority, that the unit:
   (i) Is not a CAIR SO\textsubscript{2} unit under §97.204 and is not covered by a retired unit exemption under §97.205 that is in effect;
   (ii) Is not covered by a retired unit exemption under §72.8 of this chapter that is in effect;
   (iii) Is not and, so long as the unit is a CAIR SO\textsubscript{2} opt-in unit, will not become, an opt-in source under part 74 of this chapter;
   (iv) Vents all of its emissions to a stack; and
   (v) Has documented heat input for more than 876 hours during the 6 months immediately preceding submission of the CAIR permit application under §97.222;
3. A monitoring plan in accordance with subpart HHH of this part;
4. A complete certificate of representation under §97.213 consistent with §97.282, if no CAIR designated representative has been previously designated for the source that includes the unit; and
5. A statement, in a format specified by the permitting authority, whether the CAIR designated representative requests that the unit be allocated CAIR SO\textsubscript{2} allowances under §97.288(b) or §97.288(c) (subject to the conditions in §§97.284(h) and 97.286(g)), to the extent such allocation is provided in a State implementation plan revision submitted in accordance with §51.124(r)(1), (2), or (3) of this chapter and approved by the Administrator. If allocation under §97.288(c) is requested, this statement shall include a statement that the owners and operators of the unit intend to repower the unit before January 1, 2015 and that they will provide, upon request, documentation demonstrating such intent.

(b) Duty to reapply. (1) The CAIR designated representative of a CAIR SO\textsubscript{2} opt-in unit shall submit a complete CAIR permit application under §97.222 to renew the CAIR opt-in unit permit in accordance with the permitting authority’s regulations for title V operating permits, or the permitting authority’s regulations for other federally enforceable permits if applicable, addressing permit renewal.

(2) Unless the permitting authority issues a notification of acceptance of withdrawal of the CAIR SO\textsubscript{2} opt-in unit from the CAIR SO\textsubscript{2} Trading Program in accordance with §97.286 or the unit becomes a CAIR SO\textsubscript{2} unit under §97.204, the CAIR SO\textsubscript{2} opt-in unit shall remain subject to the requirements for a CAIR SO\textsubscript{2} opt-in unit, even if the CAIR designated representative for the CAIR SO\textsubscript{2} opt-in unit fails to submit a CAIR permit application that is required for renewal of the CAIR opt-in permit under paragraph (b)(1) of this section.

§ 97.284 Opt-in process.

The permitting authority will issue or deny a CAIR opt-in permit for a unit for which an initial application for a CAIR opt-in permit under §97.283 is submitted in accordance with the following, to the extent provided in a State implementation plan revision submitted in accordance with §51.124(r)(1), (2), or (3) of this chapter and approved by the Administrator:

(a) Interim review of monitoring plan. The permitting authority and the Administrator will determine, on an interim basis, the sufficiency of the monitoring plan accompanying the initial application for a CAIR opt-in permit under §97.283. A monitoring plan is sufficient, for purposes of interim review, if the plan appears to contain information demonstrating that the SO\textsubscript{2} emissions rate and heat input of the unit and all other applicable parameters are monitored and reported in accordance with subpart HHH of this part. A determination of sufficiency shall not be
construed as acceptance or approval of the monitoring plan.

(b) Monitoring and reporting. (1)(i) If the permitting authority and the Administrator determine that the monitoring plan is sufficient under paragraph (a) of this section, the owner or operator shall monitor and report the SO\(_2\) emissions rate and the heat input of the unit and all other applicable parameters, in accordance with subpart HHH of this part, starting on the date of certification of the appropriate monitoring system under subpart HHH of this part and the unit is in full compliance with any applicable State or Federal emissions or emissions-related requirements.

(ii) The monitoring and reporting under paragraph (b)(1)(i) of this section shall include the entire control period immediately before the date on which the unit enters the CAIR SO\(_2\) Trading Program in accordance with §97.286.

(2) To the extent the SO\(_2\) emissions rate and heat input are monitored and reported in accordance with subpart HHH of this part for one or more control periods, in addition to the control period under paragraph (b)(1)(ii) of this section, during which control periods monitoring system availability must not be less than 90 percent under subpart HHH of this part and the unit must be in full compliance with any applicable State or Federal emissions or emissions-related requirements.

(c) Baseline heat input. The unit’s baseline heat input shall equal:

(1) If the unit’s SO\(_2\) emissions rate and heat input are monitored and reported for only one control period, in accordance with paragraphs (b)(1) and (2) of this section, the average of the amounts of the unit’s baseline heat input (in mmBtu) for the control periods under paragraphs (b)(1)(i) and (2) of this section.

(d) Baseline SO\(_2\) emission rate. The unit’s baseline SO\(_2\) emission rate shall equal:

(1) If the unit’s SO\(_2\) emissions rate and heat input are monitored and reported for only one control period, in accordance with paragraph (b)(1) of this section, the unit’s SO\(_2\) emissions rate (in lb/mmBtu) for the control period;

(2) If the unit’s SO\(_2\) emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, the average of the amounts of the unit’s SO\(_2\) emissions rate (in lb/mmBtu) for the control periods under paragraphs (b)(1)(i) and (2) of this section.

(e) Issuance of CAIR opt-in permit. After calculating the baseline heat input and the baseline SO\(_2\) emissions rate for the unit under paragraphs (c) and (d) of this section and if the permitting authority determines that the CAIR designated representative shows that the unit meets the requirements for a CAIR SO\(_2\) opt-in unit in §97.280 and meets the elements certified in §97.283(a)(2), the permitting authority will issue a CAIR opt-in permit. The permitting authority will provide a copy of the CAIR opt-in permit to the Administrator, who will then establish a compliance account for the source that includes the CAIR SO\(_2\) opt-in unit.
unless the source already has a compliance account.

(f) Issuance of denial of CAIR opt-in permit. Notwithstanding paragraphs (a) through (e) of this section, if at any time before issuance of a CAIR opt-in permit for the unit, the permitting authority determines that the CAIR designated representative fails to show that the unit meets the requirements for a CAIR SO$_2$ opt-in unit in §97.280 or meets the elements certified in §97.283(a)(2), the permitting authority will issue a denial of a CAIR opt-in permit for the unit.

(g) Date of entry into CAIR SO$_2$ Trading Program. A unit for which an initial CAIR opt-in permit is issued by the permitting authority shall become a CAIR SO$_2$ opt-in unit, and a CAIR SO$_2$ unit, as of the later of January 1, 2010 or January 1 of the first control period during which such CAIR opt-in permit is issued.

(h) Repowered CAIR SO$_2$ opt-in unit. (1) If CAIR designated representative requests, and the permitting authority issues a CAIR opt-in permit providing for, allocation to a CAIR SO$_2$ opt-in unit of CAIR SO$_2$ allowances under §97.288(c) and such unit is repowered after its date of entry into the CAIR SO$_2$ Trading Program under paragraph (g) of this section, the repowered unit shall be treated as a CAIR SO$_2$ opt-in unit replacing the original CAIR SO$_2$ opt-in unit, as of the date of start-up of the repowered unit’s combustion chamber.

(2) Notwithstanding paragraphs (c) and (d) of this section, as of the date of start-up under paragraph (h)(1) of this section, the repowered unit shall be deemed to have the same date of commencement of operation, date of commencement of commercial operation, baseline heat input, and baseline SO$_2$ emission rate as the original CAIR SO$_2$ opt-in unit, and the original CAIR SO$_2$ opt-in unit shall no longer be treated as a CAIR SO$_2$ opt-in unit or a CAIR SO$_2$ unit.

§ 97.286 Withdrawal from CAIR SO$_2$ Trading Program.

Except as provided under paragraph (g) of this section, a CAIR SO$_2$ opt-in unit may withdraw from the CAIR SO$_2$ Trading Program, but only if the permitting authority issues a notification to the CAIR designated representative of the CAIR SO$_2$ opt-in unit of the acceptance of the withdrawal of the CAIR SO$_2$ opt-in unit in accordance with paragraph (d) of this section.

(a) Requesting withdrawal. In order to withdraw a CAIR SO$_2$ opt-in unit from the CAIR SO$_2$ Trading Program, the CAIR designated representative of the CAIR SO$_2$ opt-in unit shall submit to the permitting authority a request to withdraw effective as of midnight of

(1) All elements required for a complete CAIR permit application under §97.222;
(2) The certification in §97.283(a)(2);
(3) The unit’s baseline heat input under §97.284(c);
(4) The unit’s baseline SO$_2$ emission rate under §97.284(d);
(5) A statement whether the unit is to be allocated CAIR SO$_2$ allowances under §97.288(b) or §97.288(c) (subject to the conditions in §§97.284(h) and 97.286(g));
(6) A statement that the unit may withdraw from the CAIR SO$_2$ Trading Program only in accordance with §97.286; and
(7) A statement that the unit is subject to, and the owners and operators of the unit must comply with, the requirements of §97.287.

(b) Each CAIR opt-in permit is deemed to incorporate automatically the definitions of terms under §97.202 and, upon recordation by the Administrator under subpart FFF or GGG of this part or this subpart, every allocation, transfer, or deduction of CAIR SO$_2$ allowances to or from the compliance account of the source that includes a CAIR SO$_2$ opt-in unit covered by the CAIR opt-in permit.

§ 97.285 CAIR opt-in permit contents.

(a) Each CAIR opt-in permit will contain:

(1) All elements required for a complete CAIR permit application under §97.222;
(2) The certification in §97.283(a)(2);
(3) The unit’s baseline heat input under §97.284(c);
(4) The unit’s baseline SO$_2$ emission rate under §97.284(d);
(5) A statement whether the unit is to be allocated CAIR SO$_2$ allowances under §97.288(b) or §97.288(c) (subject to the conditions in §§97.284(h) and 97.286(g));
(6) A statement that the unit may withdraw from the CAIR SO$_2$ Trading Program only in accordance with §97.286; and
(7) A statement that the unit is subject to, and the owners and operators of the unit must comply with, the requirements of §97.287.

(b) Each CAIR opt-in permit is deemed to incorporate automatically the definitions of terms under §97.202 and, upon recordation by the Administrator under subpart FFF or GGG of this part or this subpart, every allocation, transfer, or deduction of CAIR SO$_2$ allowances to or from the compliance account of the source that includes a CAIR SO$_2$ opt-in unit covered by the CAIR opt-in permit.

(c) The CAIR opt-in permit shall be included, in a format specified by the permitting authority, in the CAIR permit for the source where the CAIR SO$_2$ opt-in unit is located and in a title V operating permit or other federally enforceable permit for the source.

§ 97.286 Withdrawal from CAIR SO$_2$ Trading Program.

Except as provided under paragraph (g) of this section, a CAIR SO$_2$ opt-in unit may withdraw from the CAIR SO$_2$ Trading Program, but only if the permitting authority issues a notification to the CAIR designated representative of the CAIR SO$_2$ opt-in unit of the acceptance of the withdrawal of the CAIR SO$_2$ opt-in unit in accordance with paragraph (d) of this section.

(a) Requesting withdrawal. In order to withdraw a CAIR SO$_2$ opt-in unit from the CAIR SO$_2$ Trading Program, the CAIR designated representative of the CAIR SO$_2$ opt-in unit shall submit to the permitting authority a request to withdraw effective as of midnight of
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December 31 of a specified calendar year, which date must be at least 4 years after December 31 of the year of entry into the CAIR SO$_2$ Trading Program under §97.284(g). The request must be submitted no later than 90 days before the requested effective date of withdrawal.

(b) Conditions for withdrawal. Before a CAIR SO$_2$ opt-in unit covered by a request under paragraph (a) of this section may withdraw from the CAIR SO$_2$ Trading Program and the CAIR opt-in permit may be terminated under paragraph (e) of this section, the following conditions must be met:

(1) For the control period ending on the date on which the withdrawal is to become effective, the source that includes the CAIR SO$_2$ opt-in unit must meet the requirement to hold CAIR SO$_2$ allowances under §97.206(c) and cannot have any excess emissions.

(2) After the requirement for withdrawal under paragraph (b)(1) of this section is met, the Administrator will deduct from the compliance account of the source that includes the CAIR SO$_2$ opt-in unit CAIR SO$_2$ allowances equal in amount to and allocated for the same or a prior control period as any CAIR SO$_2$ allowances allocated to the CAIR SO$_2$ opt-in unit under §97.288 for any control period for which the withdrawal is to be effective. If there are no remaining CAIR SO$_2$ units at the source, the Administrator will close the compliance account, and the owners and operators of the CAIR SO$_2$ opt-in unit may submit a CAIR SO$_2$ allowance transfer for any remaining CAIR SO$_2$ allowances to another CAIR SO$_2$ Allowance Tracking System in accordance with subpart GGG of this part.

(c) Notification. (1) After the requirements for withdrawal under paragraphs (a) and (b) of this section are met (including deduction of the full amount of CAIR SO$_2$ allowances required), the permitting authority will issue a notification to the CAIR designated representative of the CAIR SO$_2$ opt-in unit of the acceptance of the withdrawal of the CAIR SO$_2$ opt-in unit as of midnight on December 31 of the calendar year for which the withdrawal was requested.

(2) If the requirements for withdrawal under paragraphs (a) and (b) of this section are not met, the permitting authority will issue a notification to the CAIR designated representative of the CAIR SO$_2$ opt-in unit that the CAIR SO$_2$ opt-in unit’s request to withdraw is denied. Such CAIR SO$_2$ opt-in unit shall continue to be a CAIR SO$_2$ opt-in unit.

(d) Permit amendment. After the permitting authority issues a notification under paragraph (c)(1) of this section that the requirements for withdrawal have been met, the permitting authority will revise the CAIR permit covering the CAIR SO$_2$ opt-in unit to terminate the CAIR opt-in permit for such unit as of the effective date specified under paragraph (c)(1) of this section. The unit shall continue to be a CAIR SO$_2$ opt-in unit until the effective date of the termination and shall comply with all requirements under the CAIR SO$_2$ Trading Program concerning any control periods for which the unit is a CAIR SO$_2$ opt-in unit, even if such requirements arise or must be complied with after the withdrawal takes effect.

(e) Reapplication upon failure to meet conditions of withdrawal. If the permitting authority denies the CAIR SO$_2$ opt-in unit’s request to withdraw, the CAIR designated representative may submit another request to withdraw in accordance with paragraphs (a) and (b) of this section.

(f) Ability to reapply to the CAIR SO$_2$ Trading Program. Once a CAIR SO$_2$ opt-in unit withdraws from the CAIR SO$_2$ Trading Program and its CAIR opt-in permit is terminated under this section, the CAIR designated representative may not submit another application for a CAIR opt-in permit under §97.283 for such CAIR SO$_2$ opt-in unit before the date that is 4 years after the date on which the withdrawal became effective. Such new application for a CAIR opt-in permit will be treated as an initial application for a CAIR opt-in permit under §97.284.

(g) Inability to withdraw. Notwithstanding paragraphs (a) through (f) of this section, a CAIR SO$_2$ opt-in unit shall not be eligible to withdraw from the CAIR SO$_2$ Trading Program if the CAIR designated representative of the CAIR SO$_2$ opt-in unit requests, and the permitting authority issues a CAIR opt-in permit for allocation
§ 97.287 Change in regulatory status.

(a) Notification. If a CAIR SO_2 opt-in unit becomes a CAIR SO_2 unit under §97.204, then the CAIR designated representative shall notify in writing the permitting authority and the Administrator of such change in the CAIR SO_2 opt-in unit’s regulatory status, within 30 days of such change.

(b) Permitting authority’s and Administrator’s actions. (1) If a CAIR SO_2 opt-in unit becomes a CAIR SO_2 unit under §97.204, the permitting authority will revise the CAIR SO_2 opt-in unit’s CAIR opt-in permit to meet the requirements of a CAIR permit under §97.223, and remove the CAIR opt-in permit provisions, as of the date on which the CAIR SO_2 opt-in unit becomes a CAIR SO_2 unit under §97.204.

2. (i) The Administrator will deduct from the compliance account of the source that includes the CAIR SO_2 opt-in unit that becomes a CAIR SO_2 unit under §97.204, CAIR SO_2 allowances equal in amount to and allocated for the same or a prior control period as:

(A) Any CAIR SO_2 allowances allocated to the CAIR SO_2 opt-in unit under §97.288 for any control period after the date on which the CAIR SO_2 opt-in unit becomes a CAIR SO_2 unit under §97.204; and

(B) If the date on which the CAIR SO_2 opt-in unit becomes a CAIR SO_2 unit under §97.204 is not December 31, the CAIR SO_2 allowances allocated to the CAIR SO_2 opt-in unit under §97.288 for the control period that includes the date on which the CAIR SO_2 opt-in unit becomes a CAIR SO_2 unit under §97.204, multiplied by the ratio of the number of days, in the control period, starting with the date on which the CAIR SO_2 opt-in unit becomes a CAIR SO_2 unit under §97.204 divided by the total number of days in the control period and rounded to the nearest whole allowance as appropriate.

(ii) The CAIR designated representative shall ensure that the compliance account of the source that includes the CAIR SO_2 opt-in unit that becomes a CAIR SO_2 unit under §97.204 contains the CAIR SO_2 allowances necessary for completion of the deduction under paragraph (b)(2)(i) of this section.

[65 FR 2727, Jan. 18, 2000, as amended at 71 FR 74795, Dec. 13, 2006]

§ 97.288 CAIR SO_2 allowance allocations to CAIR SO_2 opt-in units.

(a) Timing requirements. (1) When the CAIR opt-in permit issued under §97.204(e), the permitting authority will allocate CAIR SO_2 allowances to the CAIR SO_2 opt-in unit, and submit to the Administrator the allocation for the control period in which a CAIR SO_2 opt-in unit enters the CAIR SO_2 Trading Program under §97.284(g), in accordance with paragraph (b) or (c) of this section.

2. (i) By no later than October 31 of the control period after the control period in which a CAIR SO_2 opt-in unit enters the CAIR SO_2 Trading Program under §97.284(g) and October 31 of each year thereafter, the permitting authority will allocate CAIR SO_2 allowances to the CAIR SO_2 opt-in unit, and submit to the Administrator the allocation for the control period that includes such submission deadline and in which the unit is a CAIR SO_2 opt-in unit, in accordance with paragraph (b) or (c) of this section.

(b) Calculation of allocation. For each control period for which a CAIR SO_2 opt-in unit is to be allocated CAIR SO_2 allowances, the permitting authority will allocate in accordance with the following procedures, if provided in a State implementation plan revision submitted in accordance with §51.124(r)(1), (2), or (3) of this chapter and approved by the Administrator:

1. (i) The heat input (in mmBtu) used for calculating the CAIR SO_2 allowance allocation will be the lesser of:

(A) The CAIR SO_2 opt-in unit’s baseline heat input determined under §97.284(c); or

(B) The CAIR SO_2 opt-in unit’s heat input, as determined in accordance with subpart HHH of this part, for the immediately prior control period, except when the allocation is being calculated for the control period in which the CAIR SO_2 opt-in unit enters the CAIR SO_2 Trading Program under §97.284(g).

2. The SO_2 emission rate (in lb/mmBtu) used for calculating CAIR SO_2...
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allowance allocations will be the lesser of:

(i) \(\text{The CAIR SO}_2\) opt-in unit’s baseline \(\text{SO}_2\) emissions rate (in lb/mmBtu) determined under §97.284(d) and multiplied by 70 percent; or

(ii) The most stringent State or Federal \(\text{SO}_2\) emissions limitation applicable to the CAIR \(\text{SO}_2\) opt-in unit at any time during the control period for which CAIR \(\text{SO}_2\) allowances are to be allocated.

(3) The permitting authority will allocate CAIR \(\text{SO}_2\) allowances to the CAIR \(\text{SO}_2\) opt-in unit with a tonnage equivalent equal to, or less than by the smallest possible amount, the heat input under paragraph (b)(1) of this section, multiplied by the \(\text{SO}_2\) emission rate under paragraph (b)(2) of this section, and divided by 2,000 lb/ton.

(c) Notwithstanding paragraph (b) of this section and if the CAIR designated representative requests, and the permitting authority issues a CAIR opt-in permit (based on a demonstration of the intent to repower stated under §97.283(a)(5)) providing for, allocation to a CAIR \(\text{SO}_2\) opt-in unit of CAIR \(\text{SO}_2\) allowances under this paragraph (subject to the conditions in §§97.284(h) and 97.286(g)), the permitting authority will allocate to the CAIR \(\text{SO}_2\) opt-in unit as follows, if provided in a State implementation plan revision submitted in accordance with §51.124(r)(1), (2), or (3) of this chapter and approved by the Administrator:

(1) For each control period in 2010 through 2014 for which the CAIR \(\text{SO}_2\) opt-in unit is to be allocated CAIR \(\text{SO}_2\) allowances,

(i) The heat input (in mmBtu) used for calculating CAIR \(\text{SO}_2\) allowance allocations will be determined as described in paragraph (b)(1) of this section.

(ii) The \(\text{SO}_2\) emission rate (in lb/mmBtu) used for calculating the CAIR \(\text{SO}_2\) allowance allocations will be the lesser of:

(A) The CAIR \(\text{SO}_2\) opt-in unit’s baseline \(\text{SO}_2\) emissions rate (in lb/mmBtu) determined under §97.284(d); or

(B) The most stringent State or Federal \(\text{SO}_2\) emissions limitation applicable to the CAIR \(\text{SO}_2\) opt-in unit in any time during the control period in which the CAIR \(\text{SO}_2\) opt-in unit enters the CAIR \(\text{SO}_2\) Trading Program under §97.284(g).

(ii) The most stringent State or Federal \(\text{SO}_2\) emissions limitation applicable to the CAIR \(\text{SO}_2\) opt-in unit with a tonnage equivalent equal to, or less than by the smallest possible amount, the heat input under paragraph (c)(1)(i) of this section, multiplied by the \(\text{SO}_2\) emission rate under paragraph (c)(1)(ii) of this section, and divided by 2,000 lb/ton.

(ii) The \(\text{SO}_2\) emission rate (in lb/mmBtu) used for calculating the CAIR \(\text{SO}_2\) allowance allocation will be the lesser of:

(A) The CAIR \(\text{SO}_2\) opt-in unit’s baseline \(\text{SO}_2\) emissions rate (in lb/mmBtu) determined under §97.284(d) multiplied by 10 percent; or

(B) The most stringent State or Federal \(\text{SO}_2\) emissions limitation applicable to the CAIR \(\text{SO}_2\) opt-in unit at any time during the control period for which CAIR \(\text{SO}_2\) allowances are to be allocated.

(iii) The permitting authority will allocate CAIR \(\text{SO}_2\) allowances to the CAIR \(\text{SO}_2\) opt-in unit with a tonnage equivalent equal to, or less than by the smallest possible amount, the heat input under paragraph (c)(2)(i) of this section, multiplied by the \(\text{SO}_2\) emission rate under paragraph (c)(2)(ii) of this section, and divided by 2,000 lb/ton.

(d) Recordation. If provided in a State implementation plan revision submitted in accordance with §51.124(r)(1), (2), or (3) of this chapter and approved by the Administrator:

(1) The Administrator will record, in the compliance account of the source that includes the CAIR \(\text{SO}_2\) opt-in unit, the CAIR \(\text{SO}_2\) allowances allocated by the permitting authority to the CAIR \(\text{SO}_2\) opt-in unit under paragraph (a)(1) of this section.

(2) By December 1 of the control period in which a CAIR \(\text{SO}_2\) opt-in unit enters the CAIR \(\text{SO}_2\) Trading Program under §97.284(g) and December 1 of each
year thereafter, the Administrator will record, in the compliance account of the source that includes the CAIR SO$_2$ opt-in unit, the CAIR SO$_2$ allowances allocated by the permitting authority to the CAIR SO$_2$ opt-in unit under paragraph (a)(2) of this section.

APPENDIX A TO SUBPART III OF PART 97—STATES WITH APPROVED STATE IMPLEMENTATION PLAN REVISIONS CONCERNING CAIR SO$_2$ OPT-IN UNITS

1. The following States have State Implementation Plan revisions under §51.124(r) of this chapter approved by the Administrator and establishing procedures providing for CAIR SO$_2$ opt-in units under subpart III of this part and allocation of CAIR SO$_2$ allowances to such units under §97.288(b):

   Indiana
   North Carolina
   Ohio
   South Carolina
   Tennessee

2. The following States have State Implementation Plan revisions under §51.124(c) of this chapter approved by the Administrator and establishing procedures providing for CAIR SO$_2$ opt-in units under subpart III of this part and allocation of CAIR SO$_2$ allowances to such units under §97.288(c):

   Indiana
   North Carolina
   Ohio
   South Carolina
   Tennessee


Subpart AAAA—CAIR NO$_x$ Ozone Season Trading Program General Provisions

§97.302 Definitions.

The terms used in this subpart and subparts BBBB through III shall have the meanings set forth in this section as follows:

Account number means the identification number given by the Administrator to each CAIR NO$_x$ Ozone Season Allowance Tracking System account.

Acid Rain emissions limitation means a limitation on emissions of sulfur dioxide or nitrogen oxides under the Acid Rain Program.

Acid Rain Program means a multi-state sulfur dioxide and nitrogen oxides air pollution control and emission reduction program established by the Administrator under title IV of the CAA and parts 72 through 78 of this chapter.

Administrator means the Administrator of the United States Environmental Protection Agency or the Administrator’s duly authorized representative.

Allocate or allocation means, with regard to CAIR NO$_x$ Ozone Season allowances, the determination by a permitting authority or the Administrator of the amount of such CAIR NO$_x$ Ozone Season allowances to be initially credited to a CAIR NO$_x$ Ozone Season unit, a new unit set-aside, or other entity.

Allowance transfer deadline means, for a control period, midnight of November 30 (if it is a business day), or midnight of the first business day thereafter (if November 30 is not a business day), immediately following the control period and is the deadline by which a CAIR NO$_x$ Ozone Season allowance transfer must be submitted for recordation in a CAIR NO$_x$ Ozone Season source’s compliance account in order to be used to meet the source’s CAIR NO$_x$ Ozone Season emissions limitation for such control period in accordance with §97.354.

Alternate CAIR designated representative means, for a CAIR NO$_x$ Ozone Season source and each CAIR NO$_x$ Ozone Season unit at the source, the natural person who is authorized by the owners and operators of the source and all such units at the source, in accordance with subparts BBBB and III of this part, to act on behalf of the CAIR designated representative in matters pertaining to the CAIR NO$_x$ Ozone Season Trading Program. If the CAIR NO$_x$
Ozone Season source is also a CAIR NO\textsubscript{X} source, then this natural person shall be the same person as the alternate CAIR designated representative under the CAIR NO\textsubscript{X} Annual Trading Program. If the CAIR NO\textsubscript{X} Ozone Season source is also a CAIR SO\textsubscript{2} source, then this natural person shall be the same person as the alternate CAIR designated representative under the CAIR SO\textsubscript{2} Trading Program. If the CAIR NO\textsubscript{X} Ozone Season source is also subject to the Acid Rain Program, then this natural person shall be the same person as the alternate CAIR designated representative under the Acid Rain Program. If the CAIR NO\textsubscript{X} Ozone Season source is also subject to the Hg Budget Trading Program, then this natural person shall be the same person as the Hg designated representative under the Hg Budget Trading Program.

Automated data acquisition and handling system or DAHS means that component of the continuous emission monitoring system, or other emissions monitoring system approved for use under subpart HHHH of this part, designed to interpret and convert individual output signals from pollutant concentration monitors, flow monitors, diluent gas monitors, and other component parts of the monitoring system to produce a continuous record of the measured parameters in the measurement units required by subpart HHHH of this part.

Biomass means—
(1) Any organic material grown for the purpose of being converted to energy;
(2) Any organic byproduct of agriculture that can be converted into energy; or
(3) Any material that can be converted into energy and is nonmerchantable for other purposes, that is segregated from other nonmerchantable material, and that is:
   (i) A forest-related organic resource, including mill residues, precommercial thinnings, slash, brush, or byproduct from conversion of trees to merchantable material; or
   (ii) A wood material, including pallets, crates, dunnage, manufacturing and construction materials (other than pressure-treated, chemically-treated, or painted wood products), and landscape or right-of-way tree trimmings.

Boiler means an enclosed fossil-or other-fuel-fired combustion device used to produce heat and to transfer heat to recirculating water, steam, or other medium.

Bottoming-cycle cogeneration unit means a cogeneration unit in which the energy input to the unit is first used to produce useful thermal energy and at least some of the reject heat from the useful thermal energy application or process is then used for electricity production.

CAIR authorized account representative means, with regard to a general account, a responsible natural person who is authorized, in accordance with subparts BBBB, FFFF, and IIII of this part, to transfer and otherwise dispose of CAIR NO\textsubscript{X} Ozone Season allowances held in the general account and, with regard to a compliance account, the CAIR designated representative of the source.

CAIR designated representative means, for a CAIR NO\textsubscript{X} Ozone Season source and each CAIR NO\textsubscript{X} Ozone Season unit at the source, the natural person who is authorized by the owners and operators of the source and all such units at the source, in accordance with subparts BBBB and IIII of this part, to represent and legally bind each owner and operator in matters pertaining to the CAIR NO\textsubscript{X} Ozone Season Trading Program. If the CAIR NO\textsubscript{X} Ozone Season source is also a CAIR NO\textsubscript{X} source, then this natural person shall be the same person as the CAIR designated representative under the CAIR NO\textsubscript{X} Annual Trading Program. If the CAIR NO\textsubscript{X} Ozone Season source is also subject to the Acid Rain Program, then this natural person shall be the same person as the designated representative under the Acid Rain Program. If the CAIR NO\textsubscript{X} Ozone Season source is also subject to the Hg Budget Trading Program, then this natural person shall be the same person as the Hg designated representative under the Hg Budget Trading Program.
CAIR NO\textsubscript{X} Annual Trading Program means a multi-state nitrogen oxides air pollution control and emission reduction program established by the Administrator in accordance with subparts AA through II of this part and §§51.123(p) and 52.35 of this chapter or approved and administered by the Administrator in accordance with subparts AA through II of part 96 of this chapter and §51.123(o)(1) or (2) of this chapter, as a means of mitigating interstate transport of fine particulates and nitrogen oxides.

CAIR NO\textsubscript{X} Ozone Season allowance means a limited authorization issued by a permitting authority or the Administrator under subpart EEEE of this part, §97.388, or provisions of a State implementation plan that are approved under §51.123(aa)(1) or (2) and (bb)(1), (bb)(2), (dd), or (ee) of this chapter, to emit one ton of nitrogen oxides during a control period of the specified calendar year for which the authorization is allocated or of any calendar year thereafter under the CAIR NO\textsubscript{X} Ozone Season Trading Program or a limited authorization issued by a permitting authority for a control period during 2003 through 2008 under the NO\textsubscript{X} Budget Trading Program in accordance with §51.121(p) of this chapter to emit one ton of nitrogen oxides during a control period, provided that the provision in §51.121(b)(2)(ii)(E) of this chapter shall not be used in applying this definition and the limited authorization shall not have been used to meet the allowance-holding requirement under the NO\textsubscript{X} Budget Trading Program. An authorization to emit nitrogen oxides that is not issued under subpart EEEE of this part, §97.388, or provisions of a State implementation plan that are approved under §51.123(aa)(1) or (2) and (bb)(1), (bb)(2), (dd), or (ee) of this chapter or under the NO\textsubscript{X} Budget Trading Program as described in the prior sentence shall not be a CAIR NO\textsubscript{X} Ozone Season allowance.

CAIR NO\textsubscript{X} Ozone Season allowance deduction or deduct CAIR NO\textsubscript{X} Ozone Season allowances means the permanent withdrawal of CAIR NO\textsubscript{X} Ozone Season allowances by the Administrator from a compliance account, e.g., in order to account for a specified number of tons of total nitrogen oxides emissions from all CAIR NO\textsubscript{X} Ozone Season units at a CAIR NO\textsubscript{X} Ozone Season source for a control period, determined in accordance with subpart HHHH of this part, or to account for excess emissions.

CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System means the system by which the Administrator records allocations, deductions, and transfers of CAIR NO\textsubscript{X} Ozone Season allowances under the CAIR NO\textsubscript{X} Ozone Season Trading Program. Such allowances will be allocated, held, deducted, or transferred only as whole allowances.

CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System account means an account in the CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System established by the Administrator for purposes of recording the allocation, holding, transferring, or deducting of CAIR NO\textsubscript{X} Ozone Season allowances.

CAIR NO\textsubscript{X} Ozone Season allowances held or hold CAIR NO\textsubscript{X} Ozone Season allowances means the CAIR NO\textsubscript{X} Ozone Season allowances recorded by the Administrator, or submitted to the Administrator for recordation, in accordance with subparts FFFF, GGGG, and IIII of this part, in a CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System account.

CAIR NO\textsubscript{X} Ozone Season emissions limitation means, for a CAIR NO\textsubscript{X} Ozone Season source, the tonnage equivalent, in NO\textsubscript{X} emissions in a control period, of the CAIR NO\textsubscript{X} Ozone Season allowances available for deduction for the source under §97.354(a) and (b) for the control period.

CAIR NO\textsubscript{X} Ozone Season source means a source that includes one or more CAIR NO\textsubscript{X} Ozone Season units.

CAIR NO\textsubscript{X} Ozone Season Trading Program means a multi-state nitrogen oxides air pollution control and emission reduction program established by the Administrator in accordance with subparts AAAA through IIII of part 96 of this part and §§51.123(ee) and 52.35 of this chapter or approved and administered by the Administrator in accordance with subparts AAAA through IIII and §51.123(aa)(1) or (2) and through IIII and §51.123(aa)(1) or (2) and (bb)(1), (bb)(2), (dd), or (ee) of this chapter, or under the provision in §51.121(b)(2)(ii)(E) of this chapter, or approved and administered by the Administrator in accordance with subparts AAAA through IIII and §51.123(aa)(1) or (2) and (bb)(1), (bb)(2), or (dd) of this chapter, as a means of mitigating interstate transport of ozone and nitrogen oxides.
CAIR NO\textsubscript{X} Ozone Season unit means a unit that is subject to the CAIR NO\textsubscript{X} Ozone Season Trading Program under §97.304 and, except for purposes of §97.305 and subpart EEEE of this part, a CAIR NO\textsubscript{X} Ozone Season opt-in unit under subpart III of this part.

CAIR NO\textsubscript{X} source means a source that is subject to the CAIR NO\textsubscript{X} Annual Trading Program.

CAIR permit means the legally binding and federally enforceable written document, or portion of such document, issued by the permitting authority under subpart CCC of this part, including any permit revisions, specifying the CAIR NO\textsubscript{X} Ozone Season Trading Program requirements applicable to a CAIR NO\textsubscript{X} Ozone Season source, to each CAIR NO\textsubscript{X} Ozone Season unit at the source, and to the owners and operators and the CAIR designated representative of the source and each such unit.

CAIR SO\textsubscript{2} source means a source that is subject to the CAIR SO\textsubscript{2} Trading Program.

CAIR SO\textsubscript{2} Trading Program means a multi-state sulfur dioxide air pollution control and emission reduction program established by the Administrator in accordance with subparts AAA through III of this part and §§51.124(r) and 52.36 of this chapter or approved and administered by the Administrator in accordance with subparts AAA through III of part 96 of this chapter and §51.124(o)(1) or (2) of this chapter, as a means of mitigating interstate transport of fine particulates and sulfur dioxide.

Certifying official means:
(1) For a corporation, a president, secretary, treasurer, or vice-president or the corporation in charge of a principal business function or any other person who performs similar policy or decision-making functions for the corporation;

(2) For a partnership or sole proprietorship, a general partner or the proprietor respectively; or

(3) For a local government entity or State, Federal, or other public agency, a principal executive officer or ranking elected official.

Clean Air Act or CAA means the Clean Air Act, 42 U.S.C. 7401, et seq.

Coal means any solid fuel classified as anthracite, bituminous, subbituminous, or lignite.

Coal-derived fuel means any fuel (whether in a solid, liquid, or gaseous state) produced by the mechanical, thermal, or chemical processing of coal.

Coal-fired means:
(1) Except for purposes of subpart EEEE of this part, combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of any other fuel, during any year; or

(2) For purposes of subpart EEEE of this part, combusting any amount of coal or coal-derived fuel, alone or in combination with any amount of any other fuel, during a specified year.

Cogeneration unit means a stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine:
(1) Having equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy; and

(2) Producing during the 12-month period starting on the date the unit first produces electricity and during any calendar year after the calendar year in which the unit first produces electricity—

(i) For a topping-cycle cogeneration unit,

(A) Useful thermal energy not less than 5 percent of total energy output; and

(B) Useful power that, when added to one-half of useful thermal energy produced, is not less than 42.5 percent of total energy output, or not less than 45 percent of total energy input, if useful thermal energy produced is 15 percent or more of total energy output, or not less than 45 percent of total energy input, if useful thermal energy produced is less than 15 percent of total energy output.

(ii) For a bottoming-cycle cogeneration unit, useful power not less than 45 percent of total energy input;

(3) Provided that the total energy input under paragraphs (2)(i)(B) and (2)(ii) of this definition shall equal the unit's total energy input from all fuel except biomass if the unit is a boiler.

Combustion turbine means:
(1) An enclosed device comprising a compressor, a combustor, and a turbine
and in which the flue gas resulting from the combustion of fuel in the combustor passes through the turbine, rotating the turbine; and

(2) If the enclosed device under paragraph (1) of this definition is combined cycle, any associated duct burner, heat recovery steam generator, and steam turbine.

Commence commercial operation means, with regard to a unit:

(1) To have begun to produce steam, gas, or other heated medium used to generate electricity for sale or use, including test generation, except as provided in §97.305 and §97.384(h).

(i) For a unit that is a CAIR NOx Ozone Season unit under §97.304 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the date of commencement of commercial operation of the unit, which shall continue to be treated as the same unit.

(ii) For a unit with a date for commencement of commercial operation as defined in paragraph (2) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), such date shall remain the replaced unit’s date of commencement of commercial operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of commercial operation of the unit shall also be the unit’s date of commencement of commercial operation.

Commence operation means:

(1) To have begun any mechanical, chemical, or electronic process, including, with regard to a unit, start-up of a unit’s combustion chamber, except as provided in §97.384(h).

(i) For a unit that undergoes a physical change (other than replacement of the unit by a unit at the same source) after the date the unit commences operation as defined in paragraph (1) of this definition, such date shall remain the date of commencement of operation of the unit, which shall continue to be treated as the same unit.

(ii) For a unit that is replaced by a unit at the same source (e.g., repowered) after the date the unit commences operation as defined in paragraph (1) of this definition, such date shall remain the replaced unit’s date of commencement of operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of operation as defined in paragraph (1) or (2) of this definition as appropriate, except as provided in §97.384(h).

(2) Notwithstanding paragraph (1) of this definition and solely for purposes of subpart HHHH of this part, for a unit at the same source (e.g., repowered) after the date the unit commences operation as defined in paragraph (1) of this definition, such date shall remain the replaced unit’s date of commencement of operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of operation as defined in paragraph (1) or (2) of this definition as appropriate, except as provided in §97.384(h).

(2) Notwithstanding paragraph (1) of this definition and except as provided in §97.305, for a unit that is not a CAIR NOx Ozone Season unit under §97.304 on the later of November 15, 1990 or the date the unit commences commercial operation as defined in paragraph (1) of this definition, the unit’s date for commencement of commercial operation shall be the date on which the unit becomes a CAIR NOx Ozone Season unit under §97.304.

(i) For a unit with a date for commencement of commercial operation as defined in paragraph (2) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the date of commencement of commercial operation of the unit, which shall continue to be treated as the same unit.

(ii) For a unit with a date for commencement of commercial operation as defined in paragraph (2) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), such date shall remain the replaced unit’s date of commencement of commercial operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of commercial operation of the unit, which shall continue to be treated as the same unit.
that is not a CAIR NOₓ Ozone Season unit under §97.304(d) on the later of November 15, 1990 or the date the unit commences operation as defined in paragraph (1) of this definition and subsequently becomes such a CAIR NOₓ Ozone Season unit, the unit’s date for commencement of operation shall be the date on which the unit becomes a CAIR NOₓ Ozone Season unit under §97.304(d).

(i) For a unit with a date for commencement of operation as defined in paragraph (2) of this definition and that subsequently undergoes a physical change (other than replacement of the unit by a unit at the same source), such date shall remain the date of commencement of operation of the unit, which shall continue to be treated as the same unit.

(ii) For a unit with a date for commencement of operation as defined in paragraph (2) of this definition and that is subsequently replaced by a unit at the same source (e.g., repowered), such date shall remain the replaced unit’s date of commencement of operation, and the replacement unit shall be treated as a separate unit with a separate date for commencement of operation as defined in paragraph (1) or (2) of this definition as appropriate.

Common stack means a single flue through which emissions from 2 or more units are exhausted.

Compliance account means a CAIR NOₓ Ozone Season Allowance Tracking System account, established by the Administrator for a CAIR NOₓ Ozone Season source under subpart FFFF or IIII of this part, in which any CAIR NOₓ Ozone Season allowance allocations for the CAIR NOₓ Ozone Season units at the source are initially recorded and in which are held any CAIR NOₓ Ozone Season allowances available for use for a control period in order to meet the source’s CAIR NOₓ Ozone Season emissions limitation in accordance with §97.354.

Continuous emission monitoring system or CEMS means the equipment required under subpart HHHH of this part to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of nitrogen oxides emissions, stack gas volumetric flow rate, stack gas moisture content, and oxygen or carbon dioxide concentration (as applicable), in a manner consistent with part 75 of this chapter. The following systems are the principal types of continuous emission monitoring systems required under subpart HHHH of this part:

(1) A flow monitoring system, consisting of a stack flow rate monitor and an automated data acquisition and handling system and providing a permanent, continuous record of stack gas volumetric flow rate, in standard cubic feet per hour (scfh);

(2) A nitrogen oxides concentration monitoring system, consisting of a NOₓ pollutant concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of NOₓ emissions, in parts per million (ppm);

(3) A nitrogen oxides emission rate (or NOₓ-diluent) monitoring system, consisting of a NOₓ pollutant concentration monitor, a diluent gas (CO₂ or O₂) monitor, and an automated data acquisition and handling system and providing a permanent, continuous record of NOₓ concentration, in parts per million (ppm), diluent gas concentration, in percent CO₂ or O₂, and NOₓ emission rate, in pounds per million British thermal units (lb/mmBtu);

(4) A moisture monitoring system, as defined in §75.11(b)(2) of this chapter and providing a permanent, continuous record of the stack gas moisture content, in percent H₂O;

(5) A carbon dioxide monitoring system, consisting of a CO₂ pollutant concentration monitor (or an oxygen monitor plus suitable mathematical equations from which the CO₂ concentration is derived) and an automated data acquisition and handling system and providing a permanent, continuous record of CO₂ emissions, in percent CO₂; and

(6) An oxygen monitoring system, consisting of an O₂ concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of O₂, in percent O₂.

Control period or ozone season means the period beginning May 1 of a calendar year, except as provided in
§ 97.302

§ 97.306(c)(2) and ending on September 30 of the same year, inclusive.

Emissions means air pollutants exhaussted from a unit or source into the atmosphere, as measured, recorded, and reported to the Administrator by the CAIR designated representative and as determined by the Administrator in accordance with subpart HHHH of this part.

Excess emissions means any ton of nitrogen oxides emitted by the CAIR NOX Ozone Season units at a CAIR NOX Ozone Season source during a control period that exceeds the CAIR NOX Ozone Season emissions limitation for the source.

Fossil fuel means natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material.

Fossil-fuel-fired means, with regard to a unit, combusting any amount of fossil fuel in any calendar year.

Fuel oil means any petroleum-based fuel (including diesel fuel or petroleum derivatives such as oil tar) and any recycled or blended petroleum products or petroleum by-products used as a fuel whether in a liquid, solid, or gaseous state.

General account means a CAIR NOX Ozone Season Allowance Tracking System account, established under subpart FFFF of this part, that is not a compliance account.

Generator means a device that produces electricity.

Gross electrical output means, with regard to a cogeneration unit, electricity made available for use, including any such electricity used in the power production process (which process includes, but is not limited to, any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls).

Heat input means, with regard to a specified period of time, the product (in mmBtu/time) of the gross calorific value of the fuel (in Btu/lb) divided by 1,000,000 Btu/mmBtu and multiplied by the fuel feed rate into a combustion device (in lb of fuel/time), as measured, recorded, and reported to the Administrator by the CAIR designated representative and determined by the Administrator in accordance with subpart HHHH of this part and excluding the heat derived from preheated combustion air, recirculated flue gases, or exhaust from other sources.

Heat input rate means the amount of heat input (in mmBtu) divided by unit operating time (in hr) or, with regard to a specific fuel, the amount of heat input attributed to the fuel (in mmBtu) divided by the unit operating time (in hr) during which the unit combusts the fuel.

Hg Budget Trading Program means a multi-state Hg air pollution control and emission reduction program approved and administered by the Administrator in accordance subpart HHHH of part 60 of this chapter and §60.24(h)(6), or established by the Administrator under section 111 of the Clean Air Act, as a means of reducing national Hg emissions.

Life-of-the-unit, firm power contractual arrangement means a unit participation power sales agreement under which a utility or industrial customer reserves, or is entitled to receive, a specified amount or percentage of nameplate capacity and associated energy generated by any specified unit and pays its proportional amount of such unit’s total costs, pursuant to a contract:

(1) For the life of the unit;
(2) For a cumulative term of no less than 30 years, including contracts that permit an election for early termination; or
(3) For a period no less than 25 years or 70 percent of the economic useful life of the unit determined as of the time the unit is built, with option rights to purchase or release some portion of the nameplate capacity and associated energy generated by the unit at the end of the period.

Maximum design heat input means the maximum amount of fuel per hour (in Btu/hr) that a unit is capable of combusting on a steady state basis as of the initial installation of the unit as specified by the manufacturer of the unit.

Monitoring system means any monitoring system that meets the requirements of subpart HHHH of this part, including a continuous emissions monitoring system, an alternative monitoring system, or an excepted monitoring system under part 75 of this chapter.
Most stringent State or Federal NOX emissions limitation means, with regard to a unit, the lowest NOX emissions limitation (in terms of lb/mmBtu) that is applicable to the unit under State or Federal law, regardless of the averaging period to which the emissions limitation applies.

Nameplate capacity means, starting from the initial installation of a generator, the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady state basis and during continuous operation, whether or not restricted by seasonal or other deratings, as of such installation as specified by the manufacturer of the generator or, starting from the completion of any subsequent physical change that results in an increase in the maximum electrical generating output (in MWe) that the generator is capable of producing on a steady state basis and during continuous operation (when not restricted by seasonal or other deratings), such increased maximum amount as of such completion as specified by the person conducting the physical change.

Oil-fired means, for purposes of subpart EEEE of this part, combusting fuel oil for more than 15.0 percent of the annual heat input in a specified year and not qualifying as coal-fired.

Operator means any person who operates, controls, or supervises a CAIR NOX Ozone Season unit or a CAIR NOX Ozone Season source and shall include, but not be limited to, any holder of a leasehold interest in a CAIR NOX Ozone Season unit at the source or the CAIR NOX Ozone Season unit; or any purchaser of power from a CAIR NOX Ozone Season unit under a leasehold agreement, provided that, unless expressly provided for in a leasehold agreement, owner shall not include a passive lessor, or a person who has an equitable interest through such lessor, whose rental payments are not based (either directly or indirectly) on the revenues or income from such CAIR NOX Ozone Season unit; or

(2) With regard to any general account, any person who has an ownership interest with respect to the CAIR NOX Ozone Season allowances held in the general account and who is subject to the binding agreement for the CAIR authorized account representative to represent the person’s ownership interest with respect to CAIR NOX Ozone Season allowances.

Permitting authority means the State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to issue or revise permits to meet the requirements of the CAIR NOX Ozone Season Trading Program or, if no such agency has been so authorized, the Administrator.

Potential electrical output capacity means 33 percent of a unit’s maximum design heat input, divided by 3,413 Btu/kWh, divided by 1,000 kWh/MWh, and multiplied by 8,760 hr/yr.

Receive or receipt of means, when referring to the permitting authority or the Administrator, to come into possession of a document, information, or correspondence (whether sent in hard copy or by authorized electronic transmission) as indicated in an official log, or by a notation made on the document, information, or correspondence, by the permitting authority or the Administrator in the regular course of business.

Recordation, record, or recorded means, with regard to CAIR NOX Ozone Season allowances, the movement of CAIR NOX Ozone Season allowances by the Administrator into or between CAIR NOX Ozone Season Allowance Tracking System accounts, for purposes of allocation, transfer, or deduction.

Reference method means any direct test method of sampling and analyzing for an air pollutant as specified in §75.22 of this chapter.
Replacement, replace, or replaced means, with regard to a unit, the demolishing of a unit, or the permanent shutdown and permanent disabling of a unit, and the construction of another unit (the replacement unit) to be used instead of the demolished or shutdown unit (the replaced unit).

Repowered means, with regard to a unit, replacement of a coal-fired boiler with one of the following coal-fired technologies at the same source as the coal-fired boiler:

1. Atmospheric or pressurized fluidized bed combustion;
2. Integrated gasification combined cycle;
3. Magnetohydrodynamics;
4. Direct and indirect coal-fired turbines;
5. Integrated gasification fuel cells; or
6. As determined by the Administrator in consultation with the Secretary of Energy, a derivative of one or more of the technologies under paragraphs (1) through (5) of this definition and any other coal-fired technology capable of controlling multiple combustion emissions simultaneously with improved boiler or generation efficiency and with significantly greater waste reduction relative to the performance of technology in widespread commercial use as of January 1, 2005.

Sequential use of energy means:

1. For a topping-cycle cogeneration unit, the use of reject heat from electricity production in a useful thermal energy application or process; or
2. For a bottoming-cycle cogeneration unit, the use of reject heat from useful thermal energy application or process in electricity production.

Serial number means, for a CAIR NOx Ozone Season allowance, the unique identification number assigned to each CAIR NOx Ozone Season allowance by the Administrator.

Solid waste incineration unit means a stationary, fossil-fuel-fired boiler or stationery, fossil-fuel-fired combustion turbine that is a “solid waste incineration unit” as defined in section 129(g)(1) of the Clean Air Act.

Source means all buildings, structures, or installations located in one or more contiguous or adjacent properties under common control of the same person or persons. For purposes of section 502(c) of the Clean Air Act, a “source,” including a “source” with multiple units, shall be considered a single “facility.”

State means one of the States or the District of Columbia that is subject to the CAIR NOx Ozone Season Trading Program pursuant to §52.35 of this chapter.

Submit or serve means to send or transmit a document, information, or correspondence to the person specified in accordance with the applicable regulation:

1. In person;
2. By United States Postal Service; or
3. By other means of dispatch or transmission and delivery. Compliance with any “submission” or “service” deadline shall be determined by the date of dispatch, transmission, or mailing and not the date of receipt.

Title V operating permit means a permit issued under title V of the Clean Air Act and part 70 or part 71 of this chapter.

Title V operating permit regulations means the regulations that the Administrator has approved or issued as meeting the requirements of title V of the Clean Air Act and part 70 or 71 of this chapter.

Ton means 2,000 pounds. For the purpose of determining compliance with the CAIR NOx Ozone Season emissions limitation, total tons of nitrogen oxides emissions for a control period shall be calculated as the sum of all recorded hourly emissions (or the mass equivalent of the recorded hourly emission rates) in accordance with subpart HHHH of this part, but with any remaining fraction of a ton equal to or greater than 0.50 tons deemed to equal one ton and any remaining fraction of a ton less than 0.50 tons deemed to equal zero tons.

Topping-cycle cogeneration unit means a cogeneration unit in which the energy input to the unit is first used to produce useful power, including electricity, and at least some of the reject heat from the electricity production is then used to provide useful thermal energy.

Total energy input means, with regard to a cogeneration unit, total energy of
all forms supplied to the cogeneration unit, excluding energy produced by the cogeneration unit itself. Each form of energy supplied shall be measured by the lower heating value of that form of energy calculated as follows:

\[
LHV = HHV - 10.55(W + 9H)
\]

Where:
- \(LHV\) = lower heating value of fuel in Btu/lb,
- \(HHV\) = higher heating value of fuel in Btu/lb,
- \(W\) = Weight % of moisture in fuel, and
- \(H\) = Weight % of hydrogen in fuel.

**Total energy output** means, with regard to a cogeneration unit, the sum of useful power and useful thermal energy produced by the cogeneration unit.

**Unit** means a stationary, fossil-fuel-fired boiler or combustion turbine or other stationary, fossil-fuel-fired combustion device.

**Unit operating day** means a calendar day in which a unit combusts any fuel.

**Unit operating hour or hour of unit operation** means an hour in which a unit combusts any fuel.

**Useful power** means, with regard to a cogeneration unit, electricity or mechanical energy made available for use, excluding any such energy used in the power production process (which process includes, but is not limited to, any on-site processing or treatment of fuel combusted at the unit and any on-site emission controls).

**Useful thermal energy** means, with regard to a cogeneration unit, thermal energy that is:

1. Made available to an industrial or commercial process (not a power production process), excluding any heat contained in condensate return or makeup water;
2. Used in a heating application (e.g., space heating or domestic hot water heating); or
3. Used in a space cooling application (i.e., thermal energy used by an absorption chiller).

**Utility power distribution system** means the portion of an electricity grid owned or operated by a utility and dedicated to delivering electricity to customers.

§ 97.303 Measurements, abbreviations, and acronyms.

Measurements, abbreviations, and acronyms used in this subpart and subparts BBBB through IIII are defined as follows:

- Btu—British thermal unit.
- \(\text{CO}_2\)—carbon dioxide.
- \(\text{H}_2\text{O}\)—water.
- \(\text{Hg}\)—mercury.
- hr—hour.
- \(\text{kW}\)—kilowatt electrical.
- \(\text{kWh}\)—kilowatt hour.
- lb—pound.
- mmBtu—million Btu.
- \(\text{MWe}\)—megawatt electrical.
- \(\text{MWh}\)—megawatt hour.
- \(\text{NO}_x\)—nitrogen oxides.
- \(\text{O}_2\)—oxygen.
- ppm—parts per million.
- \(\text{scfh}\)—standard cubic feet per hour.
- \(\text{SO}_2\)—sulfur dioxide.
- yr—year.

§ 97.304 Applicability.

(a) Except as provided in paragraph (b) of this section:

1. The following units in a State shall be CAIR \(\text{NO}_x\) Ozone Season units, and any source that includes one or more such units shall be a CAIR \(\text{NO}_x\) Ozone Season source, subject to the requirements of this subpart and subparts BBBB through HHHH of this part: any stationary, fossil-fuel-fired boiler or stationary, fossil-fuel-fired combustion turbine serving at any time, since the later of November 15, 1990 or the start-up of the unit(s combustion chamber, a generator with nameplate capacity of more than 25 MWe producing electricity for sale.

2. If a stationary boiler or stationary combustion turbine that, under paragraph (a)(1) of this section, is not a CAIR \(\text{NO}_x\) Ozone Season unit begins to combust fossil fuel or to serve a generator with nameplate capacity of more than 25 MWe producing electricity for sale, the unit shall become a CAIR \(\text{NO}_x\) Ozone Season unit as provided in paragraph (a)(1) of this section on the first date on which it both combuts fossil fuel and serves such generator.

(b) The units in a State that meet the requirements set forth in paragraph (b)(1)(i), (b)(2)(i), or (b)(2)(ii) of this section shall not be CAIR \(\text{NO}_x\) Ozone Season units:
§ 97.304

(1)(i) Any unit that is a CAIR NO\textsubscript{X} Ozone Season unit under paragraph (a)(1) or (2) of this section:

(A) Qualifying as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and continuing to qualify as a cogeneration unit; and

(B) Not serving at any time, since the later of November 15, 1990 or the start-up of the unit’s combustion chamber, a generator with nameplate capacity of more than 25 MWe supplying in any calendar year more than one-third of the unit(s) potential electric output capacity or 219,000 MWh, whichever is greater, to any utility power distribution system for sale.

(ii) If a unit qualifies as a cogeneration unit during the 12-month period starting on the date the unit first produces electricity and meets the requirements of paragraphs (b)(1)(i) of this section for at least one calendar year, but subsequently no longer meets all such requirements, the unit shall become a CAIR NO\textsubscript{X} Ozone Season unit starting on the earlier of January 1 after the first calendar year during which the unit first no longer qualifies as a cogeneration unit or January 1 after the first 3 consecutive calendar years after 1990 for which the unit has an average annual fuel consumption of fossil fuel of 20 percent or more.

(iii) A certifying official of an owner or operator of any unit may petition the Administrator at any time for a determination concerning the applicability, under paragraphs (a) and (b) of this section, of the CAIR NO\textsubscript{X} Ozone Season Trading Program to the unit.

(1) Petition content. The petition shall be in writing and include the identification of the unit and the relevant facts about the unit. The petition and any other documents provided to the Administrator in connection with the petition shall include the following certification statement, signed by the certifying official: “I am authorized to make this submission on behalf of the owners and operators of the unit for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(2) Submission. The petition and any other documents provided in connection with the petition shall be submitted to the Director of the Clean Air Markets Division (or its successor).
Environmental Protection Agency

§ 97.305 Retired unit exemption.

(a)(1) Any CAIR NO\textsubscript{X} Ozone Season unit that is permanently retired and is not a CAIR NO\textsubscript{X} Ozone Season opt-in unit under subpart IIII of this part shall be exempt from the CAIR NO\textsubscript{X} Ozone Season Trading Program, except for the provisions of this section, §§97.302, 97.303, 97.304, 97.306(c)(4) through (7), 97.307, 97.308, and subparts BBBB and EEEE through GGGG of this part.

(2) The exemption under paragraph (a)(1) of this section shall become effective the day on which the CAIR NO\textsubscript{X} Ozone Season unit is permanently retired. Within 30 days of the unit’s permanent retirement, the CAIR designated representative shall submit a statement to the permitting authority otherwise responsible for administering any CAIR permit for the unit and shall submit a copy of the statement to the Administrator. The statement shall state, in a format prescribed by the permitting authority, that the unit was permanently retired on a specific date and will comply with the requirements of paragraph (b) of this section.

(3) After receipt of the statement under paragraph (a)(2) of this section, the permitting authority will amend any permit under subpart CCCC of this part covering the source at which the unit is located to add the provisions and requirements of the exemption under paragraphs (a)(1) and (b) of this section.

(b) Special provisions. (1) A unit exempt under paragraph (a) of this section shall not emit any nitrogen oxides, starting on the date that the exemption takes effect.

(2) The Administrator or the permitting authority will allocate CAIR NO\textsubscript{X} Ozone Season allowances under subpart EEEE of this part to a unit exempt under paragraph (a) of this section.

(3) For a period of 5 years from the date the records are created, the owners and operators of a unit exempt under paragraph (a) of this section shall retain at the source that includes the unit, records demonstrating that the unit is permanently retired. The 5-year period for keeping records may be extended for cause, at any time before the end of the period, in writing by the permitting authority or the Administrator. The owners and operators bear the burden of proof that the unit is permanently retired.

(4) The owners and operators and, to the extent applicable, the CAIR designated representative of a unit exempt under paragraph (a) of this section shall comply with the requirements of the CAIR NO\textsubscript{X} Ozone Season Trading Program concerning all periods for which the exemption is not in effect, even if such requirements arise, or must be complied with, after the exemption takes effect.

(5) A unit exempt under paragraph (a) of this section and located at a source that is required, or but for this exemption would be required, to have a Title V operating permit shall not resume
operation unless the CAIR designated representative of the source submits a complete CAIR permit application under §97.322 for the unit not less than 18 months (or such lesser time provided by the permitting authority) before the later of January 1, 2009 or the date on which the unit resumes operation. 

(6) On the earlier of the following dates, a unit exempt under paragraph (a) of this section shall lose its exemption:

(i) The date on which the CAIR designated representative submits a CAIR permit application for the unit under paragraph (b)(5) of this section;

(ii) The date on which the CAIR designated representative is required under paragraph (b)(5) of this section to submit a CAIR permit application for the unit; or

(iii) The date on which the unit resumes operation, if the CAIR designated representative is not required to submit a CAIR permit application for the unit.

(7) For the purpose of applying monitoring, reporting, and recordkeeping requirements under subpart HHHH of this part, a unit that loses its exemption under paragraph (a) of this section shall be treated as a unit that commences commercial operation on the first date on which the unit resumes operation.

§ 97.306 Standard requirements.

(a) Permit requirements. (1) The CAIR designated representative of each CAIR NO\textsubscript{X} Ozone Season source required to have a title V operating permit and each CAIR NO\textsubscript{X} Ozone Season unit required to have a title V operating permit at the source shall have a CAIR permit issued by the permitting authority under subpart CCCC of this part for the source and operate the source and the unit in compliance with such CAIR permit.

(3) Except as provided in subpart III of this part, the owners and operators of a CAIR NO\textsubscript{X} Ozone Season source that is not otherwise required to have a title V operating permit and each CAIR NO\textsubscript{X} Ozone Season unit that is not otherwise required to have a title V operating permit are not required to submit a CAIR permit application, and to have a CAIR permit, under subpart CCCC of this part for such CAIR NO\textsubscript{X} Ozone Season source and such CAIR NO\textsubscript{X} Ozone Season unit.

(b) Monitoring, reporting, and recordkeeping requirements. (1) The owners and operators, and the CAIR designated representative, of each CAIR NO\textsubscript{X} Ozone Season source and each CAIR NO\textsubscript{X} Ozone Season unit at the source shall comply with the monitoring, reporting, and recordkeeping requirements of subpart HHHH of this part.

(2) The emissions measurements recorded and reported in accordance with subpart HHHH of this part shall be used to determine compliance by each CAIR NO\textsubscript{X} Ozone Season source with the CAIR NO\textsubscript{X} Ozone Season emissions limitation under paragraph (c) of this section.

(c) Nitrogen oxides ozone season emission requirements. (1) As of the allowance transfer deadline for a control period, the owners and operators of each CAIR NO\textsubscript{X} Ozone Season source and each CAIR NO\textsubscript{X} Ozone Season unit at the source shall hold, in the source’s compliance account, CAIR NO\textsubscript{X} Ozone Season allowances available for compliance deductions for the control period under §97.334(a) in an amount not less than the tons of total nitrogen oxides emissions for the control period from all CAIR NO\textsubscript{X} Ozone Season units at the source, as determined in accordance with subpart HHHH of this part.

(2) A CAIR NO\textsubscript{X} Ozone Season unit shall be subject to the requirements under paragraph (c)(1) of this section for the control period starting on the later of May 1, 2009 or the deadline for meeting the unit’s monitor certification requirements under §97.370(b)(1),
(2), (3), or (7) and for each control period thereafter.

(3) A CAIR NO\textsubscript{X} Ozone Season allowance shall not be deducted, for compliance with the requirements under paragraph (c)(1) of this section, for a control period in a calendar year before the year for which the CAIR NO\textsubscript{X} Ozone Season allowance was allocated.

(4) CAIR NO\textsubscript{X} Ozone Season allowances shall be held in, deducted from, or transferred into or among CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System accounts in accordance with subparts EEEE, FFFF, GGGG, and IIII of this part.

(5) A CAIR NO\textsubscript{X} Ozone Season allowance is a limited authorization to emit one ton of nitrogen oxides in accordance with the CAIR NO\textsubscript{X} Ozone Season Trading Program. No provision of the CAIR NO\textsubscript{X} Ozone Season Trading Program, the CAIR permit application, the CAIR permit, or an exemption under \S 97.305 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization.

(6) A CAIR NO\textsubscript{X} Ozone Season allowance does not constitute a property right.

(7) Upon recordation by the Administrator under subpart EEEE, FFFF, GGGG, or IIII of this part, every allocation, transfer, or deduction of a CAIR NO\textsubscript{X} Ozone Season allowance to or from a CAIR NO\textsubscript{X} Ozone Season source’s compliance account is incorporated automatically in any CAIR permit of the source.

(d) Excess emissions requirements. If a CAIR NO\textsubscript{X} Ozone Season source emits nitrogen oxides during any control period in excess of the CAIR NO\textsubscript{X} Ozone Season emissions limitation, then:

(1) The owners and operators of the source and each CAIR NO\textsubscript{X} Ozone Season unit at the source shall surrender the CAIR NO\textsubscript{X} Ozone Season allowances required for deduction under \S 97.354(d)(1) and pay any fine, penalty, or assessment or comply with any other remedy imposed, for the same violations, under the Clean Air Act or applicable State law; and

(2) Each ton of such excess emissions and each day of such control period shall constitute a separate violation of this subpart, the Clean Air Act, and applicable State law.

(e) Recordkeeping and reporting requirements. (1) Unless otherwise provided, the owners and operators of the CAIR NO\textsubscript{X} Ozone Season source and each CAIR NO\textsubscript{X} Ozone Season unit at the source shall keep on site at the source each of the following documents for a period of 5 years from the date the document is created. This period may be extended for cause, at any time before the end of 5 years, in writing by the permitting authority or the Administrator.

(i) The certificate of representation under \S 97.313 for the CAIR designated representative for the source and each CAIR NO\textsubscript{X} Ozone Season unit at the source and all documents that demonstrate the truth of the statements in the certificate of representation; provided that the certificate and documents shall be retained on site at the source beyond such 5-year period until such documents are superseded because of the submission of a new certificate of representation under \S 97.313 changing the CAIR designated representative.

(ii) All emissions monitoring information, in accordance with subpart HHHH of this part, provided that to the extent that subpart HHHH of this part provides for a 3-year period for recordkeeping, the 3-year period shall apply.

(iii) Copies of all reports, compliance certifications, and other submissions and all records made or required under the CAIR NO\textsubscript{X} Ozone Season Trading Program.

(iv) Copies of all documents used to complete a CAIR permit application and any other submission under the CAIR NO\textsubscript{X} Ozone Season Trading Program or to demonstrate compliance with the requirements of the CAIR NO\textsubscript{X} Ozone Season Trading Program.

(2) The CAIR designated representative of a CAIR NO\textsubscript{X} Ozone Season source and each CAIR NO\textsubscript{X} Ozone Season unit at the source shall submit the reports required under the CAIR NO\textsubscript{X} Ozone Season Trading Program, including those under subpart HHHH of this part.

(f) Liability. (1) Each CAIR NO\textsubscript{X} Ozone Season source and each CAIR NO\textsubscript{X}
§ 97.307 Computation of time.

(a) Unless otherwise stated, any time period scheduled, under the CAIR NO\textsubscript{X} Ozone Season Trading Program, to begin on the occurrence of an act or event shall begin on the day the act or event occurs.

(b) Unless otherwise stated, any time period scheduled, under the CAIR NO\textsubscript{X} Ozone Season Trading Program, to begin before the occurrence of an act or event shall be computed so that the period ends the day before the act or event occurs.

(c) Unless otherwise stated, if the final day of any time period, under the CAIR NO\textsubscript{X} Ozone Season Trading Program, falls on a weekend or a State or Federal holiday, the time period shall be extended to the next business day.

§ 97.308 Appeal procedures.

The appeal procedures for decisions of the Administrator under the CAIR NO\textsubscript{X} Ozone Season Trading Program are set forth in part 78 of this chapter.

APPENDIX A TO SUBPART AAAA OF PART 97—STATES WITH APPROVED STATE IMPLEMENTATION PLAN REVISIONS CONCERNING APPLICABILITY

The following States have State Implementation Plan revisions under §51.123(ee)(1) of this chapter approved by the Administrator and providing for expansion of the applicability provisions to include all non-EGUs subject to the respective State’s emission trading program approved under §51.121(p) of this chapter:

Michigan
Tennessee

Subpart BBBB—CAIR Designated Representative for CAIR NO\textsubscript{X} Ozone Season Sources

§ 97.310 Authorization and responsibilities of CAIR designated representative.

(a) Except as provided under §97.311, each CAIR NO\textsubscript{X} Ozone Season source, including all CAIR NO\textsubscript{X} Ozone Season units at the source, shall have one and only one CAIR designated representative, with regard to all matters under the CAIR NO\textsubscript{X} Ozone Season Trading Program concerning the source or any CAIR NO\textsubscript{X} Ozone Season unit at the source.

(b) The CAIR designated representative of the CAIR NO\textsubscript{X} Ozone Season source shall be selected by an agreement binding on the owners and operators of the source and all CAIR NO\textsubscript{X} Ozone Season units at the source.

(c) The CAIR designated representative of the CAIR NO\textsubscript{X} Ozone Season source shall act in accordance with the certification statement in §97.313(a)(4)(iv).

(d) Upon receipt by the Administrator of a certificate representation under §97.313, the CAIR designated representative of the source shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each owner and operator of the CAIR NO\textsubscript{X} Ozone Season source represented and each CAIR NO\textsubscript{X} Ozone Season unit at the source in all matters pertaining to the CAIR NO\textsubscript{X} Ozone Season Trading Program, notwithstanding any agreement between
§ 97.311 Alternate CAIR designated representative.

(a) A certificate of representation under §97.313 may designate one and only one alternate CAIR designated representative, who may act on behalf of the CAIR designated representative. The agreement by which the alternate CAIR designated representative is selected shall include a procedure for authorizing the alternate CAIR designated representative to act in lieu of the CAIR designated representative.

(b) Upon receipt by the Administrator of a complete certificate of representation under §97.313, any representation, action, inaction, or submission by the alternate CAIR designated representative shall be deemed to be a representation, action, inaction, or submission by the CAIR designated representative.

(c) Except in this section and §§97.302, 97.310(a) and (d), 97.312, 97.313, 97.315, 97.351, and 97.382, whenever the term “CAIR designated representative” is used in subparts AAAA through IIII of this part, the term shall be construed to include the CAIR designated representative or any alternate CAIR designated representative.

§ 97.312 Changing CAIR designated representative and alternate CAIR designated representative; changes in owners and operators.

(a) Changing CAIR designated representative. The CAIR designated representative may be changed at any time upon receipt by the Administrator of a superseding complete certificate of representation under §97.313. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CAIR designated representative before the time and date when the Administrator receives the superseding certificate of representation shall be binding on the new CAIR designated representative and the owners and operators of the CAIR NOx Ozone Season source and the CAIR NOx Ozone Season units at the source.

(b) Changing alternate CAIR designated representative. The alternate CAIR designated representative may be changed at any time upon receipt by the Administrator of a superseding complete
§ 97.313 Certificate of representation.

(a) A complete certificate of representation for a CAIR designated representative or an alternate CAIR designated representative shall include the following elements in a format prescribed by the Administrator:

(1) Identification of the CAIR NO\textsubscript{X} Ozone Season source, and each CAIR NO\textsubscript{X} Ozone Season unit at the source, for which the certificate of representation is submitted, including identification and nameplate capacity of each generator served by each such unit.

(2) The name, address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the CAIR designated representative and any alternate CAIR designated representative.

(3) A list of the owners and operators of the CAIR NO\textsubscript{X} Ozone Season source and of each CAIR NO\textsubscript{X} Ozone Season unit at the source.

(4) The following certification statements by the CAIR designated representative and any alternate CAIR designated representative—

(i) “I certify that I was selected as the CAIR designated representative or alternate CAIR designated representative, as applicable, by an agreement binding on the owners and operators of the source and each CAIR NO\textsubscript{X} Ozone Season unit at the source.”

(ii) “I certify that I have all the necessary authority to carry out my duties and responsibilities under the CAIR NO\textsubscript{X} Ozone Season Trading Program on behalf of the owners and operators of the source and of each CAIR NO\textsubscript{X} Ozone Season unit at the source and that each such owner and operator shall be fully bound by my representations, actions, inactions, or submissions.”

(iii) “I certify that the owners and operators of the source and of each CAIR NO\textsubscript{X} Ozone Season unit at the source shall be bound by any order issued to me by the Administrator, the permitting authority, or a court regarding the source or unit.”

(iv) “Where there are multiple holders of a legal or equitable title to, or a leasehold interest in, a CAIR NO\textsubscript{X} Ozone Season unit, or where a utility or industrial customer purchases power from a CAIR NO\textsubscript{X} Ozone Season unit under a life-of-the-unit, firm power contractual arrangement, I certify that: I have given a written notice of my selection as the ‘CAIR designated representative’ or ‘alternate CAIR designated representative’, as applicable, and of the agreement by which I was selected to each owner and operator of the source and of each CAIR NO\textsubscript{X} Ozone Season unit at the source; and CAIR NO\textsubscript{X} Ozone Season allowances and proceeds of transactions involving CAIR NO\textsubscript{X} Ozone Season allowances will be...
deemed to be held or distributed in proportion to each holder's legal, equitable, leasehold, or contractual reservation or entitlement, except that, if such multiple holders have expressly provided for a different distribution of CAIR NO\textsubscript{X} Ozone Season allowances by contract, CAIR NO\textsubscript{X} Ozone Season allowances and proceeds of transactions involving CAIR NO\textsubscript{X} Ozone Season allowances will be deemed to be held or distributed in accordance with the contract.''

(5) The signature of the CAIR designated representative and any alternate CAIR designated representative and the dates signed.

(b) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the certificate of representation shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

§ 97.315 Delegation by CAIR designated representative and alternate CAIR designated representative.

(a) A CAIR designated representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under this part.

(b) An alternate CAIR designated representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under this part.

(c) In order to delegate authority to make an electronic submission to the Administrator in accordance with paragraph (a) or (b) of this section, the CAIR designated representative or alternate CAIR designated representative, as appropriate, must submit to the Administrator a notice of delegation, in a format prescribed by the Administrator, that includes the following elements:

(1) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of such CAIR designated representative or alternate CAIR designated representative;

(2) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of each such natural person (referred to as an 'agent');

(3) For each such natural person, a list of the type or types of electronic submissions under paragraph (a) or (b) of this section for which authority is delegated to him or her; and

(4) The following certification statements by such CAIR designated representative or alternate CAIR designated representative:

(i) "I agree that any electronic submission to the Administrator that is made when I am a CAIR designated representative or alternate CAIR designated representative and which is not properly delegated to the agent(s) identified in this notice of delegation and which was made by such agent(s) is contrary to the intent of the notice of delegation and the agent(s) who made such submission is (are) not a(are) proper agent(s)."
CAIR designated representative, as appropriate, and before this notice of delegation is superseded by another notice of delegation under 40 CFR 97.315(d) shall be deemed to be an electronic submission by me."

(ii) "Until this notice of delegation is superseded by another notice of delegation under 40 CFR 97.315(d), I agree to maintain an e-mail account and to notify the Administrator immediately of any change in my e-mail address unless all delegation of authority by me under 40 CFR 97.315 is terminated."

(d) A notice of delegation submitted under paragraph (c) of this section shall be effective, with regard to the CAIR designated representative or alternate CAIR designated representative identified in such notice, upon receipt of such notice by the Administrator and until receipt by the Administrator of a superseding notice of delegation submitted by such CAIR designated representative or alternate CAIR designated representative submitting such notice of delegation.

§ 97.321 Submission of CAIR permit applications.

(a) Duty to apply. The CAIR designated representative of any CAIR NOX Ozone Season source required to have a title V operating permit shall submit to the permitting authority a complete CAIR permit application under §97.322 for the source covering each CAIR NOX Ozone Season unit at the source at least 18 months (or such lesser time provided by the permitting authority) before the later of January 1, 2009 or the date on which the CAIR NOX Ozone Season unit commences commercial operation, except as provided in §97.383(a).

(b) Duty to reapply. For a CAIR NOX Ozone Season source required to have a title V operating permit, the CAIR designated representative shall submit a complete CAIR permit application under §97.322 for the source covering each CAIR NOX Ozone Season unit at the source to renew the CAIR permit in accordance with the permitting authority’s title V operating permits regulations addressing permit renewal, except as provided in §97.383(b).

§ 97.322 Information requirements for CAIR permit applications.

A complete CAIR permit application shall include the following elements concerning the CAIR NOX Ozone Season source for which the application is
Environmental Protection Agency

§ 97.341

submitted, in a format prescribed by the permitting authority:

(a) Identification of the CAIR NO\textsubscript{X} Ozone Season source;

(b) Identification of each CAIR NO\textsubscript{X} Ozone Season unit at the CAIR NO\textsubscript{X} Ozone Season source; and

(c) The standard requirements under § 97.306.

§ 97.323 CAIR permit contents and term.

(a) Each CAIR permit will contain, in a format prescribed by the permitting authority, all elements required for a complete CAIR permit application under §97.322.

(b) Each CAIR permit is deemed to incorporate automatically the definitions of terms under §97.302 and, upon recordation by the Administrator under subpart EEEE, FFFF, GGGG, or IIII of this part, every allocation, transfer, or deduction of a CAIR NO\textsubscript{X} Ozone Season allowance to or from the compliance account of the CAIR NO\textsubscript{X} Ozone Season source covered by the permit.

(c) The term of the CAIR permit will be set by the permitting authority, as necessary to facilitate coordination of the renewal of the CAIR permit with issuance, revision, or renewal of the CAIR NO\textsubscript{X} Ozone Season source’s title V operating permit or other federally enforceable permit as applicable.

§ 97.324 CAIR permit revisions.

Except as provided in §97.323(b), the permitting authority will revise the CAIR permit, as necessary, in accordance with the permitting authority’s title V operating permits regulations or the permitting authority’s regulations for other federally enforceable permits as applicable addressing permit revisions.

Subpart DDDD [Reserved]

Subpart EEEE—CAIR NO\textsubscript{X} Ozone Season Allowance Allocations

§ 97.340 State trading budgets.

(a) Except as provided in paragraph (b) of this section, the State trading budgets for annual allocations of CAIR NO\textsubscript{X} Ozone Season allowances for the control periods in 2009 through 2014 and in 2015 and thereafter are respectively as follows:

<table>
<thead>
<tr>
<th>State</th>
<th>State trading budget for 2009-2014 (tons)</th>
<th>State trading budget for 2015 and thereafter (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>32,182</td>
<td>26,818</td>
</tr>
<tr>
<td>Arkansas</td>
<td>11,515</td>
<td>9,597</td>
</tr>
<tr>
<td>Connecticut</td>
<td>2,559</td>
<td>2,559</td>
</tr>
<tr>
<td>Delaware</td>
<td>2,226</td>
<td>1,855</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>112</td>
<td>94</td>
</tr>
<tr>
<td>Florida</td>
<td>47,912</td>
<td>39,926</td>
</tr>
<tr>
<td>Illinois</td>
<td>30,701</td>
<td>28,981</td>
</tr>
<tr>
<td>Indiana</td>
<td>45,952</td>
<td>39,273</td>
</tr>
<tr>
<td>Iowa</td>
<td>14,263</td>
<td>11,886</td>
</tr>
<tr>
<td>Kentucky</td>
<td>36,045</td>
<td>30,587</td>
</tr>
<tr>
<td>Louisiana</td>
<td>17,085</td>
<td>14,238</td>
</tr>
<tr>
<td>Maryland</td>
<td>12,834</td>
<td>10,695</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>7,551</td>
<td>6,293</td>
</tr>
<tr>
<td>Michigan</td>
<td>28,971</td>
<td>24,142</td>
</tr>
<tr>
<td>Mississippi</td>
<td>8,714</td>
<td>7,262</td>
</tr>
<tr>
<td>Missouri</td>
<td>26,678</td>
<td>22,231</td>
</tr>
<tr>
<td>New Jersey</td>
<td>6,654</td>
<td>5,545</td>
</tr>
<tr>
<td>New York</td>
<td>20,632</td>
<td>17,193</td>
</tr>
<tr>
<td>North Carolina</td>
<td>28,392</td>
<td>23,660</td>
</tr>
<tr>
<td>Ohio</td>
<td>45,664</td>
<td>39,945</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>42,171</td>
<td>35,143</td>
</tr>
<tr>
<td>South Carolina</td>
<td>15,249</td>
<td>12,707</td>
</tr>
<tr>
<td>Tennessee</td>
<td>22,842</td>
<td>19,035</td>
</tr>
<tr>
<td>Virginia</td>
<td>15,994</td>
<td>13,328</td>
</tr>
<tr>
<td>West Virginia</td>
<td>26,859</td>
<td>26,525</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>17,997</td>
<td>14,989</td>
</tr>
</tbody>
</table>

(b) Upon approval by the Administrator of a State’s State implementation plan revision under §51.123(ee)(1) of this chapter providing for the inclusion in the CAIR NO\textsubscript{X} Ozone Season Trading Program of all units that are not otherwise CAIR NO\textsubscript{X} Ozone Season units under §97.304(a) and (b) and that are NO\textsubscript{X} Budget units covered by the State’s emissions trading program approved under §51.121(p), the amount in the State trading budget for a control period in a calendar year will be the sum of the amount set forth for the State and for the year in paragraph (a) of this section and the amount of additional CAIR NO\textsubscript{X} Ozone Season allowance allocations issued under §51.123(ee)(1)(ii)(A) of this chapter for the year.

§ 97.341 Timing requirements for CAIR NO\textsubscript{X} Ozone Season allowance allocations.

(a) The Administrator will determine by order the CAIR NO\textsubscript{X} Ozone Season allowance allocations, in accordance with §97.342(a) and (b), for the control periods in 2009, 2010, 2011, 2012, 2013, and 2014.
(b) By July 31, 2011 and July 31 of each year thereafter, the Administrator will determine by order the CAIR NO\textsubscript{X} Ozone Season allowance allocations, in accordance with §97.342(a) and (b), for the control period in the fourth year after the year of the applicable deadline for determination under this paragraph.

(c) By April 30, 2009 and April 30 of each year thereafter, the Administrator will determine by order the CAIR NO\textsubscript{X} Ozone Season allowance allocations, in accordance with §97.342(a), (c), and (d), for the control period in the year of the applicable deadline for determination under this paragraph.

(d) The Administrator will make available to the public each determination of CAIR NO\textsubscript{X} Ozone Season allowance allocations under paragraph (a), (b), or (c) of this section and will provide an opportunity for submission of objections to the determination. Objections shall be limited to addressing whether the determination is in accordance with §97.342. Based on any such objections, the Administrator will adjust each determination to the extent necessary to ensure that it is in accordance with §97.342.

§97.342 CAIR NO\textsubscript{X} Ozone Season allowance allocations.

(a)(1) The baseline heat input (in mmBtu) used with respect to CAIR NO\textsubscript{X} Ozone Season allowance allocations under paragraph (b) of this section for each CAIR NO\textsubscript{X} Ozone Season unit will be:

(i) For units commencing operation before January 1, 2001 the average of the 3 highest amounts of the unit’s adjusted control period heat input for 2000 through 2004, with the adjusted control period heat input for each year calculated as follows:

(A) If the unit is coal-fired during the year, the unit’s control period heat input for such year is multiplied by 100 percent;

(B) If the unit is oil-fired during the year, the unit’s control period heat input for such year is multiplied by 60 percent; and

(C) If the unit is not subject to paragraph (a)(1)(i)(A) or (B) of this section, the unit’s control period heat input for such year is multiplied by 40 percent.

(ii) For units commencing operation on or after January 1, 2001 and operating each calendar year during a period of 5 or more consecutive calendar years, the average of the 3 highest amounts of the unit’s total converted control period heat input over the first such 5 years.

(2)(i) A unit’s control period heat input, and a unit’s status as coal-fired or oil-fired, for a calendar year under paragraph (a)(1)(i) of this section, and a unit’s total tons of NO\textsubscript{X} emissions during a control period in a calendar year under paragraph (c)(3) of this section, will be determined in accordance with part 75 of this chapter, to the extent the unit was otherwise subject to the requirements of part 75 of this chapter for the year, or will be based on the best available data reported to the Administrator for the unit (in a format prescribed by the Administrator), to the extent the unit was not otherwise subject to the requirements of part 75 of this chapter for the year.

(ii) A unit’s converted control period heat input for a calendar year specified under paragraph (a)(1)(ii) of this section equals:

(A) Except as provided in paragraph (a)(2)(ii)(B) or (C) of this section, the control period gross electrical output of the generator or generators served by the unit multiplied by 7,900 Btu/kWh, if the unit is coal-fired for the year, or 6,675 Btu/kWh, if the unit is not coal-fired for the year, and divided by 1,000,000 Btu/mmBtu, provided that if a generator is served by 2 or more units, then the gross electrical output of the generator will be attributed to each unit in proportion to the unit’s share of the total control period heat input of such units for the year;

(B) For a unit that is a boiler and has equipment used to produce electricity and useful thermal energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy, the total heat energy (in Btu) of the steam produced by the boiler during the control period, divided by 0.8 and by 1,000,000 Btu/mmBtu; or

(C) For a unit that is a combustion turbine and has equipment used to produce electricity and useful thermal
energy for industrial, commercial, heating, or cooling purposes through the sequential use of energy, the control period gross electrical output of the enclosed device comprising the compressor, combustor, and turbine multiplied by 3,413 Btu/kWh, plus the total heat energy (in Btu) of the steam produced by any associated heat recovery steam generator during the control period divided by 0.8, and with the sum divided by 1,000,000 Btu/mmBtu.

(iii) Gross electrical output and total heat energy under paragraph (a)(2)(ii) of this section will be determined based on the best available data reported to the Administrator for the unit (in a format prescribed by the Administrator).

(3) The Administrator will determine what data are the best available data under paragraph (a)(2) of this section by weighing the likelihood that data are accurate and reliable and giving greater weight to data submitted to a governmental entity in compliance with legal requirements or substantiated by an independent entity.

(b)(1) For each control period in 2009 and thereafter, the Administrator will allocate to all CAIR NO\textsubscript{X} Ozone Season units in a State that have a baseline heat input (as determined under paragraph (a) of this section) a total amount of CAIR NO\textsubscript{X} Ozone Season allowances equal to 95 percent for a control period in 2009 through 2014, and 97 percent for a control period in 2015 and thereafter, of the tons of NO\textsubscript{X} emissions in the applicable State trading budget under §97.340 (except as provided in paragraphs (d) and (e) of this section).

(2) The Administrator will allocate CAIR NO\textsubscript{X} Ozone Season allowances to each CAIR NO\textsubscript{X} Ozone Season unit under paragraph (b)(1) of this section in an amount determined by multiplying the total amount of CAIR NO\textsubscript{X} Ozone Season allowances allocated under paragraph (b)(1) of this section by the ratio of the baseline heat input of such CAIR NO\textsubscript{X} Ozone Season unit to the total amount of baseline heat input of all such CAIR NO\textsubscript{X} Ozone Season units in the State and rounding to the nearest whole allowance as appropriate.

(c) For each control period in 2009 and thereafter, the Administrator will allocate CAIR NO\textsubscript{X} Ozone Season allowances to CAIR NO\textsubscript{X} Ozone Season units in a State that are not allocated CAIR NO\textsubscript{X} Ozone Season allowances under paragraph (b) of this section because the units do not yet have a baseline heat input under paragraph (a) of this section or because the units have a baseline heat input but all CAIR NO\textsubscript{X} Ozone Season allowances available under paragraph (b) of this section for the control period are already allocated, in accordance with the following procedures:

(1) The Administrator will establish a separate new unit set-aside for each control period. Each new unit set-aside will be allocated CAIR NO\textsubscript{X} Ozone Season allowances equal to 5 percent for a control period in 2009 through 2014, and 3 percent for a control period in 2015 and thereafter, of the amount of tons of NO\textsubscript{X} emissions in the applicable State trading budget under §97.340.

(2) The CAIR designated representative of such a CAIR NO\textsubscript{X} Ozone Season unit may submit to the Administrator a request, in a format specified by the Administrator, to be allocated CAIR NO\textsubscript{X} Ozone Season allowances, starting with the later of the control period in 2009 or the first control period after the control period in which the CAIR NO\textsubscript{X} Ozone Season unit commences commercial operation and until the first control period for which the unit is allocated CAIR NO\textsubscript{X} Ozone Season allowances under paragraph (b) of this section. A separate CAIR NO\textsubscript{X} Ozone Season allowance allocation request for each control period for which CAIR NO\textsubscript{X} Ozone Season allowances are sought must be submitted on or before February 1 before such control period and after the date on which the CAIR NO\textsubscript{X} Ozone Season unit commences commercial operation.

(3) In a CAIR NO\textsubscript{X} Ozone Season allowance allocation request under paragraph (c)(2) of this section, the CAIR designated representative may request for a control period CAIR NO\textsubscript{X} Ozone Season allowances in an amount not exceeding the CAIR NO\textsubscript{X} Ozone Season unit’s total tons of NO\textsubscript{X} emissions during the control period immediately before such control period.
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(4) The Administrator will review each CAIR NO<sub>X</sub> Ozone Season allowance allocation request under paragraph (c)(2) of this section and will allocate CAIR NO<sub>X</sub> Ozone Season allowances for each control period pursuant to such request as follows:

(i) The Administrator will accept an allowance allocation request only if the request meets, or is adjusted by the Administrator as necessary to meet, the requirements of paragraphs (c)(2) and (3) of this section.

(ii) On or after February 1 before the control period, the Administrator will determine the sum of the CAIR NO<sub>X</sub> Ozone Season allowances requested (as adjusted under paragraph (c)(4)(i) of this section) in all allowance allocation requests accepted under paragraph (c)(4)(i) of this section for the control period.

(iii) If the amount of CAIR NO<sub>X</sub> Ozone Season allowances in the new unit set-aside for the control period is greater than or equal to the sum under paragraph (c)(4)(i) of this section, then the Administrator will allocate the amount of CAIR NO<sub>X</sub> Ozone Season allowances requested (as adjusted under paragraph (c)(4)(i) of this section) to each CAIR NO<sub>X</sub> Ozone Season unit covered by an allowance allocation request accepted under paragraph (c)(4)(i) of this section.

(iv) If the amount of CAIR NO<sub>X</sub> Ozone Season allowances in the new unit set-aside for the control period is less than the sum under paragraph (c)(4)(i) of this section, then the Administrator will allocate to each CAIR NO<sub>X</sub> Ozone Season unit covered by an allowance allocation request accepted under paragraph (c)(4)(i) of this section the amount of CAIR NO<sub>X</sub> Ozone Season allowances requested (as adjusted under paragraph (c)(4)(i) of this section), multiplied by the amount of CAIR NO<sub>X</sub> Ozone Season allowances in the new unit set-aside for the control period, divided by the sum determined under paragraph (c)(4)(i) of this section, and rounded to the nearest whole allowance as appropriate.

(v) The Administrator will notify each CAIR designated representative that submitted an allowance allocation request of the amount of CAIR NO<sub>X</sub> Ozone Season allowances (if any) allocated for the control period to the CAIR NO<sub>X</sub> Ozone Season unit covered by the request.

(d) If, after completion of the procedures under paragraph (c)(4) of this section for a control period, any unallocated CAIR NO<sub>X</sub> Ozone Season allowances remain in the new unit set-aside under paragraph (c) of this section for a State for the control period, the Administrator will allocate to each CAIR NO<sub>X</sub> Ozone Season unit that was allocated CAIR NO<sub>X</sub> Ozone Season allowances under paragraph (b) of this section in the State an amount of CAIR NO<sub>X</sub> Ozone Season allowances equal to the total amount of such remaining unallocated CAIR NO<sub>X</sub> Ozone Season allowances, multiplied by the unit’s allocation under paragraph (b) of this section, divided by 95 percent for a control period during 2009 through 2014, and 97 percent for a control period during 2015 and thereafter, of the amount of tons of NO<sub>X</sub> emissions in the applicable State trading budget under §97.340, and rounded to the nearest whole allowance as appropriate.

(e) If the Administrator determines that CAIR NO<sub>X</sub> Ozone Season allowances were allocated under paragraphs (a) and (b) of this section, paragraphs (a) and (c) of this section, or paragraph (d) of this section for a control period and that the recipient of the allocation is not actually a CAIR NO<sub>X</sub> Ozone Season unit under §97.304 in such control period, then the Administrator will notify the CAIR designated representative and will act in accordance with the following procedures:

(1) Except as provided in paragraph (e)(2) or (3) of this section, the Administrator will not record such CAIR NO<sub>X</sub> Ozone Season allowances under §97.353.

(2) If the Administrator already recorded such CAIR NO<sub>X</sub> Ozone Season allowances under §97.353 and if the Administrator makes such determinations before making deductions for the source that includes such recipient under §97.354(b) for the control period, then the Administrator will deduct from the account in which such CAIR NO<sub>X</sub> Ozone Season allowances were recorded under §97.353 an amount of CAIR NO<sub>X</sub> Ozone Season allowances allocated for the same or a prior control period.
period equal to the amount of such already recorded CAIR NOX Ozone Season allowances. The CAIR designated representative shall ensure that there are sufficient CAIR NOX Ozone Season allowances in such account for completion of the deduction.

(3) If the Administrator already recorded such CAIR NOX Ozone Season allowances under §97.353 and if the Administrator makes such determinations after making deductions for the source that includes such recipient under §97.354(b) for the control period, then the Administrator will apply paragraph (e)(1) or (2) of this section, as appropriate, to any subsequent control period for which CAIR NOX Ozone Season allowances were allocated to such recipient.

(4) The Administrator will transfer the CAIR NOX Ozone Season allowances that are not recorded, or that are deducted, in accordance with paragraphs (e)(1), (2), and (3) of this section to a new unit set-aside for the State in which such recipient is located.

§ 97.343 Alternative of allocation of CAIR NOX Ozone Season allowances by permitting authority.

(a) Notwithstanding §§97.341, 97.342, and 97.353 if a State submits, and the Administrator approves, a State implementation plan revision in accordance with §51.123(ee)(2) of this chapter providing for allocation of CAIR NOX Ozone Season allowances by the permitting authority, then the permitting authority shall make such allocations in accordance with such approved State implementation plan revision, the Administrator will not make allocations under §§97.341 and 97.342 for the CAIR NOX Ozone Season units in the State, and under §97.333, the Administrator will record allocations made under such approved State implementation plan revision instead of allocations under §§97.341 and 97.342.

(b) In implementing paragraph (a) of this section and §§97.341, 97.342, and 97.353, the Administrator will ensure that the total amount of CAIR NOX Ozone Season allowances allocated, under such provisions and under a State’s State implementation plan revision approved in accordance with §51.123(ee)(2) of this chapter, for a control period for CAIR NOX Ozone Season sources in the State or for other entities specified by the permitting authority will not exceed the State’s State trading budget for the year of the control period.

APPENDIX A TO SUBPART EEEE OF PART 97—STATES WITH APPROVED STATE IMPLEMENTATION PLAN REVISIONS CONCERNING ALLOCATIONS

The following States have State Implementation Plan revisions under §51.123(ee)(2) of this chapter approved by the Administrator and providing for allocation of CAIR NOX Ozone Season allowances by the permitting authority under §97.343(a):

Indiana
Louisiana
Michigan
New Jersey
North Carolina
Ohio
South Carolina
Tennessee
West Virginia (for control periods 2009–2014)
Wisconsin


Subpart FFFF—CAIR NOX Ozone Season Allowance Tracking System

§ 97.350 [Reserved]

§ 97.351 Establishment of accounts.

(a) Compliance accounts. Except as provided in §97.384(e), upon receipt of a complete certificate of representation under §97.313, the Administrator will establish a compliance account for the CAIR NOX Ozone Season source for which the certificate of representation was submitted, unless the source already has a compliance account.

(b) General accounts—(1) Application for general account. (i) Any person may apply to open a general account for the purpose of holding and transferring CAIR NOX Ozone Season allowances. An application for a general account may designate one and only one CAIR authorized account representative and
one and only one alternate CAIR authorized account representative who may act on behalf of the CAIR authorized account representative. The agreement by which the alternate CAIR authorized account representative is selected shall include a procedure for authorizing the alternate CAIR authorized account representative to act in lieu of the CAIR authorized account representative.

(ii) A complete application for a general account shall be submitted to the Administrator and shall include the following elements in a format prescribed by the Administrator:

(A) Name, mailing address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the CAIR authorized account representative and any alternate CAIR authorized account representative;

(B) Organization name and type of organization, if applicable;

(C) A list of all persons subject to a binding agreement for the CAIR authorized account representative and any alternate CAIR authorized account representative to represent their ownership interest with respect to CAIR NO\textsubscript{X} Ozone Season allowances held in the general account;

(D) The following certification statement by the CAIR authorized account representative and any alternate CAIR authorized account representative: "I certify that I was selected as the CAIR authorized account representative or the alternate CAIR authorized account representative, as applicable, by an agreement that is binding on all persons who have an ownership interest with respect to CAIR NO\textsubscript{X} Ozone Season allowances held in the general account;"

(E) The following certification statement by the CAIR authorized account representative and any alternate CAIR authorized account representative: "I certify that I have all the necessary authority to carry out my duties and responsibilities under the CAIR NO\textsubscript{X} Ozone Season Trading Program on behalf of such persons and that each such person shall be fully bound by my representations, actions, inactions, or submissions and by any order or decision issued to me by the Administrator or a court regarding the general account."

(E) The signature of the CAIR authorized account representative and any alternate CAIR authorized account representative and the dates signed.

(iii) Unless otherwise required by the permitting authority or the Administrator, documents of agreement referred to in the application for a general account shall not be submitted to the permitting authority or the Administrator. Neither the permitting authority nor the Administrator shall be under any obligation to review or evaluate the sufficiency of such documents, if submitted.

(2) Authorization of CAIR authorized account representative and alternate CAIR authorized account representative.

(i) Upon receipt by the Administrator of a complete application for a general account under paragraph (b)(1) of this section:

(A) The Administrator will establish a general account for the person or persons for whom the application is submitted.

(B) The CAIR authorized account representative and any alternate CAIR authorized account representative for the general account shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each person who has an ownership interest with respect to CAIR NO\textsubscript{X} Ozone Season allowances held in the general account in all matters pertaining to the CAIR NO\textsubscript{X} Ozone Season Trading Program, notwithstanding any agreement between the CAIR authorized account representative or any alternate CAIR authorized account representative and such person. Any such person shall be bound by any order or decision issued to the CAIR authorized account representative or any alternate CAIR authorized account representative by the Administrator or a court regarding the general account.

(C) Any representation, action, inaction, or submission by any alternate CAIR authorized account representative shall be deemed to be a representation, action, inaction, or submission by the CAIR authorized account representative.

(ii) Each submission concerning the general account shall be submitted, signed, and certified by the CAIR authorized account representative for the persons having an ownership interest with respect to CAIR NO\textsubscript{X} Ozone Season allowances.
Environmental Protection Agency § 97.351

held in the general account. Each such submission shall include the following certification statement by the CAIR authorized account representative or any alternate CAIR authorized account representative: “I am authorized to make this submission on behalf of the persons having an ownership interest with respect to the CAIR NOX Ozone Season allowances held in the general account. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(iii) The Administrator will accept or act on a submission concerning the general account only if the submission has been made, signed, and certified in accordance with paragraph (b)(2)(ii) of this section.

(3) Changing CAIR authorized account representative and alternate CAIR authorized account representative; changes in persons with ownership interest. (i) The CAIR authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous CAIR authorized account representative before the time and date when the Administrator receives the superseding application for a general account shall be binding on the new CAIR authorized account representative and the persons with an ownership interest with respect to the CAIR NOX Ozone Season allowances in the general account.

(ii) The alternate CAIR authorized account representative for a general account may be changed at any time upon receipt by the Administrator of a superseding complete application for a general account under paragraph (b)(1) of this section. Notwithstanding any such change, all representations, actions, inactions, and submissions by the previous alternate CAIR authorized account representative before the time and date when the Administrator receives the superseding application for a general account shall be binding on the new alternate CAIR authorized account representative and the persons with an ownership interest with respect to the CAIR NOX Ozone Season allowances in the general account.

(iii) In the event a person having an ownership interest with respect to CAIR NOX Ozone Season allowances in the general account is not included in the list of such persons in the application for a general account, such person shall be deemed to be subject to and bound by the application for a general account, the representation, actions, inactions, and submissions of the CAIR authorized account representative and any alternate CAIR authorized account representative of the account, and the decisions and orders of the Administrator or a court, as if the person were included in such list.

(B) Within 30 days following any change in the persons having an ownership interest with respect to CAIR NOX Ozone Season allowances in the general account, including the addition of a new person, the CAIR authorized account representative or any alternate CAIR authorized account representative shall submit a revision to the application for a general account amending the list of persons having an ownership interest with respect to the CAIR NOX Ozone Season allowances in the general account to include the change.

(4) Objections concerning CAIR authorized account representative and alternate CAIR authorized account representative. (i) Once a complete application for a general account under paragraph (b)(1) of this section has been submitted and received, the Administrator will rely on the application unless and until a superseding complete application for a general account under paragraph (b)(1) of this section is received by the Administrator.
(ii) Except as provided in paragraph (b)(3)(i) or (ii) of this section, no objection or other communication submitted to the Administrator concerning the authorization, or any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative for a general account shall affect any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative or the finality of any decision or order by the Administrator under the CAIR NO$_X$ Ozone Season Trading Program.

(iii) The Administrator will not adjudicate any private legal dispute concerning the authorization or any representation, action, inaction, or submission of the CAIR authorized account representative or any alternate CAIR authorized account representative for a general account, including private legal disputes concerning the proceeds of CAIR NO$_X$ Ozone Season allowance transfers.

(5) Delegation by CAIR authorized account representative and alternate CAIR authorized account representative. (i) A CAIR authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under subparts FFFF and GGGG of this part.

(ii) An alternate CAIR authorized account representative may delegate, to one or more natural persons, his or her authority to make an electronic submission to the Administrator provided for or required under subparts FFFF and GGGG of this part.

(iii) In order to delegate authority to make an electronic submission to the Administrator in accordance with paragraph (b)(5)(i) or (ii) of this section, the CAIR authorized account representative or alternate CAIR authorized account representative, as appropriate, must submit to the Administrator a notice of delegation, in a format prescribed by the Administrator, that includes the following elements:

(A) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of such CAIR authorized account representative or alternate CAIR authorized account representative;

(B) The name, address, e-mail address, telephone number, and facsimile transmission number (if any) of each such natural person (referred to as an “agent”);

(C) For each such natural person, a list of the type or types of electronic submissions under paragraph (b)(5)(i) or (ii) of this section for which authority is delegated to him or her;

(D) The following certification statement by such CAIR authorized account representative or alternate CAIR authorized account representative: “I agree that any electronic submission to the Administrator that is by an agent identified in this notice of delegation and of a type listed for such agent in this notice of delegation and that is made when I am a CAIR authorized account representative or alternate CAIR authorized representative, as appropriate, and before this notice of delegation is superseded by another notice of delegation under 40 CFR 97.351(b)(5)(iv) shall be deemed to be an electronic submission by me.”;

(E) The following certification statement by such CAIR authorized account representative or alternate CAIR authorized account representative: Until this notice of delegation is superseded by another notice of delegation under 40 CFR 97.351(b)(5)(iv), I agree to maintain an e-mail account and to notify the Administrator immediately of any change in my e-mail address unless all delegation of authority by me under 40 CFR 97.351(b)(5) is terminated.”.

(iv) A notice of delegation submitted under paragraph (b)(5)(iii) of this section shall be effective, with regard to the CAIR authorized account representative or alternate CAIR authorized account representative identified in such notice, upon receipt of such notice by the Administrator and until receipt by the Administrator of a superseding notice of delegation submitted by such CAIR authorized account representative or alternate CAIR authorized account representative, as appropriate. The superseding notice of delegation may replace any previously identified agent, add a new agent, or
§ 97.354 Compliance with CAIR NO\textsubscript{X} emissions limitation.

(a) Allowance transfer deadline. The CAIR NO\textsubscript{X} Ozone Season allowances are available to be deducted for compliance with a source’s CAIR NO\textsubscript{X} Ozone Season emissions limitation for a control period in a given calendar year only if the CAIR NO\textsubscript{X} Ozone Season allowances:

(1) Were allocated for the control period in the year or a prior year; and

(2) Are held in the compliance account as of the allowance transfer deadline for the control period or are transferred into the compliance account by a CAIR NO\textsubscript{X} Ozone Season allowance transfer correctly submitted for recordation under §§97.360 and 97.361 by the allowance transfer deadline for the control period.

(b) Deductions for compliance. Following the recordation, in accordance with §97.361, of CAIR NO\textsubscript{X} Ozone Season
allowance transfers submitted for recordation in a source's compliance account by the allowance transfer deadline for a control period, the Administrator will deduct from the compliance account CAIR NO\textsubscript{X} Ozone Season allowances available under paragraph (a) of this section in order to determine whether the source meets the CAIR NO\textsubscript{X} Ozone Season emissions limitation for the control period, as follows:

(1) Until the amount of CAIR NO\textsubscript{X} Ozone Season allowances deducted equals the number of tons of total nitrogen oxides emissions, determined in accordance with subpart HHHH of this part, from all CAIR NO\textsubscript{X} Ozone Season units at the source for the control period; or

(2) If there are insufficient CAIR NO\textsubscript{X} Ozone Season allowances to complete the deductions in paragraph (b)(1) of this section, until no more CAIR NO\textsubscript{X} Ozone Season allowances available under paragraph (a) of this section remain in the compliance account.

(c)(1) Identification of CAIR NO\textsubscript{X} Ozone Season allowances by serial number. The CAIR authorized account representative for a source’s compliance account may request that specific CAIR NO\textsubscript{X} Ozone Season allowances, identified by serial number, in the compliance account be deducted for emissions or excess emissions for a control period in accordance with paragraph (b) or (d) of this section. Such request shall be submitted to the Administrator by the allowance transfer deadline for the control period and include, in a format prescribed by the Administrator, the identification of the CAIR NO\textsubscript{X} Ozone Season source and the appropriate serial numbers.

(2) First-in, first-out. The Administrator will deduct CAIR NO\textsubscript{X} Ozone Season allowances under paragraph (b) or (d) of this section from the source's compliance account, in the absence of an identification or in the case of a partial identification of CAIR NO\textsubscript{X} Ozone Season allowances by serial number under paragraph (c)(1) of this section, on a first-in, first-out (FIFO) accounting basis in the following order:

(i) Any CAIR NO\textsubscript{X} Ozone Season allowances that were allocated to the units at the source, in the order of recordation; and then

(ii) Any CAIR NO\textsubscript{X} Ozone Season allowances that were allocated to any entity and transferred and recorded in the compliance account pursuant to subpart GGGG of this part, in the order of recordation.

(d) Deductions for excess emissions. (1) After making the deductions for compliance under paragraph (b) of this section for a control period in a calendar year in which the CAIR NO\textsubscript{X} Ozone Season source has excess emissions, the Administrator will deduct from the source’s compliance account an amount of CAIR NO\textsubscript{X} Ozone Season allowances, allocated for the control period in the immediately following calendar year, equal to 3 times the number of tons of the source’s excess emissions.

(2) Any allowance deduction required under paragraph (d)(1) of this section shall not affect the liability of the owners and operators of the CAIR NO\textsubscript{X} Ozone Season source or the CAIR NO\textsubscript{X} Ozone Season units at the source for any fine, penalty, or assessment, or their obligation to comply with any other remedy, for the same violations, as ordered under the Clean Air Act or applicable State law.

(e) Recordation of deductions. The Administrator will record in the appropriate compliance account all deductions from such an account under paragraphs (b) and (d) of this section and subpart III.

(f) Administrator’s action on submissions. (1) The Administrator may review and conduct independent audits concerning any submission under the CAIR NO\textsubscript{X} Ozone Season Trading Program and make appropriate adjustments of the information in the submissions.

(2) The Administrator may deduct CAIR NO\textsubscript{X} Ozone Season allowances from or transfer CAIR NO\textsubscript{X} Ozone Season allowances to a source’s compliance account based on the information in the submissions, as adjusted under paragraph (f)(1) of this section, and record such deductions and transfers.

§ 97.355 Banking.

(a) CAIR NO\textsubscript{X} Ozone Season allowances may be banked for future use or transfer in a compliance account or a
general account in accordance with paragraph (b) of this section.

(b) Any CAIR NO\textsubscript{X} Ozone Season allowance that is held in a compliance account or a general account will remain in such account unless and until the CAIR NO\textsubscript{X} Ozone Season allowance is deducted or transferred under §97.342, §97.354, §97.356, or subpart GGGG or IIII of this part.

§ 97.356 Account error.
The Administrator may, at his or her sole discretion and on his or her own motion, correct any error in any CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System account. Within 10 business days of making such correction, the Administrator will notify the CAIR authorized account representative for the account.

§ 97.357 Closing of general accounts.
(a) The CAIR authorized account representative of a general account may submit to the Administrator a request to close the account, which shall include a correctly submitted allowance transfer under §§97.360 and 97.361 for any CAIR NO\textsubscript{X} Ozone Season allowances in the account to one or more other CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System accounts.

(b) If a general account has no allowance transfers in or out of the account for a 12-month period or longer and does not contain any CAIR NO\textsubscript{X} Ozone Season allowances, the Administrator may notify the CAIR authorized account representative for the account that the account will be closed following 20 business days after the notice is sent. The account will be closed after the 20-day period unless, before the end of the 20-day period, the Administrator receives a correctly submitted transfer of CAIR NO\textsubscript{X} Ozone Season allowances into the account under §§97.360 and 97.361 or a statement submitted by the CAIR authorized account representative demonstrating to the satisfaction of the Administrator good cause as to why the account should not be closed.

Subpart GGGG—CAIR NO\textsubscript{X} Ozone Season Allowance Transfers

§ 97.360 Submission of CAIR NO\textsubscript{X} Ozone Season allowance transfers.
A CAIR authorized account representative seeking recordation of a CAIR NO\textsubscript{X} Ozone Season allowance transfer shall submit the transfer to the Administrator. To be considered correctly submitted, the CAIR NO\textsubscript{X} Ozone Season allowance transfer shall include the following elements, in a format specified by the Administrator:

(a) The account numbers for both the transferor and transferee accounts;

(b) The serial number of each CAIR NO\textsubscript{X} Ozone Season allowance that is in the transferor account and is to be transferred; and

(c) The name and signature of the CAIR authorized account representative of the transferor account and the date signed.

§ 97.361 EPA recordation.
(a) Within 5 business days (except as provided in paragraph (b) of this section) of receiving a CAIR NO\textsubscript{X} Ozone Season allowance transfer, the Administrator will record a CAIR NO\textsubscript{X} Ozone Season allowance transfer by moving each CAIR NO\textsubscript{X} Ozone Season allowance from the transferor account to the transferee account as specified by the request, provided that:

(1) The transfer is correctly submitted under §97.360; and

(2) The transferor account includes each CAIR NO\textsubscript{X} Ozone Season allowance identified by serial number in the transfer.

(b) A CAIR NO\textsubscript{X} Ozone Season allowance transfer that is submitted for recordation after the allowance transfer deadline for a control period and that includes any CAIR NO\textsubscript{X} Ozone Season allowances allocated for any control period before such allowance transfer deadline will not be recorded until after the Administrator completes the deductions under §97.354 for the control period immediately before such allowance transfer deadline.

(c) Where a CAIR NO\textsubscript{X} Ozone Season allowance transfer submitted for recordation fails to meet the requirements
§ 97.362 Notification.

(a) Notification of recordation. Within 5 business days of recordation of a CAIR NOX Ozone Season allowance transfer under § 97.361, the Administrator will notify the CAIR authorized account representatives of both the transferor and transferee accounts.

(b) Notification of non-recordation. Within 10 business days of receipt of a CAIR NOX Ozone Season allowance transfer that fails to meet the requirements of § 97.361(a), the Administrator will notify the CAIR authorized account representatives of both accounts subject to the transfer of:

(1) A decision not to record the transfer, and
(2) The reasons for such non-recordation.

(c) Nothing in this section shall preclude the submission of a CAIR NOX Ozone Season allowance transfer for recordation following notification of non-recordation.

Subpart HHHH—Monitoring and Reporting

§ 97.370 General requirements.

The owners and operators, and to the extent applicable, the CAIR designated representative, of a CAIR NOX Ozone Season unit, shall comply with the monitoring, recordkeeping, and reporting requirements as provided in this subpart and in subpart H of part 75 of this chapter. For purposes of complying with such requirements, the definitions in § 97.302 and in § 72.2 of this chapter shall apply, and the terms “affected unit,” “designated representative,” “CAIR designated monitoring system” (or “CEMS”) in part 75 of this chapter shall be deemed to refer respectively, as defined in § 97.302. The owner or operator of a unit that is not a CAIR NOX Ozone Season unit but that is monitored under § 75.72(b)(2)(ii) of this chapter shall comply with the same monitoring, recordkeeping, and reporting requirements as a CAIR NOX Ozone Season unit.

(a) Requirements for installation, certification, and data accounting. The owner or operator of each CAIR NOX Ozone Season unit shall:

(1) Install all monitoring systems required under this subpart for monitoring NOX mass emissions and individual unit heat input (including all systems required to monitor NOX emission rate, NOX concentration, stack gas moisture content, stack gas flow rate, CO2 or O2 concentration, and fuel flow rate, as applicable, in accordance with §§ 75.71 and 75.72 of this chapter);

(2) Successfully complete all certification tests required under § 97.371 and meet all other requirements of this subpart and part 75 of this chapter applicable to the monitoring systems under paragraph (a)(1) of this section; and

(3) Record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section.

(b) Compliance deadlines. Except as provided in paragraph (e) of this section, the owner or operator shall meet the monitoring system certification and other requirements of paragraphs (a)(1) and (2) of this section on or before the following dates. The owner or operator shall record, report, and quality-assure the data from the monitoring systems under paragraph (a)(1) of this section on and after the following dates.

(1) For the owner or operator of a CAIR NOX Ozone Season unit that commences commercial operation before July 1, 2007, by May 1, 2008.

(2) For the owner or operator of a CAIR NOX Ozone Season unit that commences commercial operation on or after July 1, 2007 and that reports on an annual basis under § 97.374(d), by the later of the following dates:

(i) 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which the unit commences commercial operation; or
(ii) May 1, 2008.

(3) For the owner or operator of a CAIR NOX Ozone Season unit that commences commercial operation on or after July 1, 2007 and that reports on a control period basis under
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§ 97.374(d)(2)(i), by the later of the following dates:

(i) 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which the unit commences commercial operation; or

(ii) If the compliance date under paragraph (b)(3)(i) of this section is not during a control period, May 1 immediately following the compliance date under paragraph (b)(3)(i) of this section.

(4) For the owner or operator of a CAIR NOx Ozone Season unit for which construction of a new stack or flue or installation of add-on NOx emission controls is completed after the applicable deadline under paragraph (b)(1), (2), (6), or (7) of this section and that reports on an annual basis under § 97.374(d), by 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which emissions first exit to the atmosphere through the new stack or flue or add-on NOx emissions controls.

(5) For the owner or operator of a CAIR NOx Ozone Season unit for which construction of a new stack or flue or installation of add-on NOx emission controls is completed after the applicable deadline under paragraph (b)(1), (3), (6), or (7) of this section and that reports on a control period basis under § 97.374(d)(2)(ii), by the later of the following dates:

(i) 90 unit operating days or 180 calendar days, whichever occurs first, after the date on which emissions first exit to the atmosphere through the new stack or flue or add-on NOx emissions controls; or

(ii) If the compliance date under paragraph (b)(5)(i) of this section is not during a control period, May 1 immediately following the compliance date under paragraph (b)(5)(i) of this section.

(6) Notwithstanding the dates in paragraphs (b)(1), (2), and (3) of this section, for the owner or operator of a CAIR NOx Ozone Season opt-in unit under subpart III of this part, by the date on which the CAIR NOx Ozone Season opt-in unit enters the CAIR NOx Ozone Season Trading Program as provided in § 97.384(g).

(c) Reporting data. The owner or operator of a CAIR NOx Ozone Season unit that does not meet the applicable compliance date set forth in paragraph (b) of this section for any monitoring system under paragraph (a)(1) of this section shall, for each such monitoring system, determine, record, and report maximum potential (or, as appropriate, minimum potential) values for NOx concentration, NOx emission rate, stack gas flow rate, stack gas moisture content, fuel flow rate, and any other parameters required to determine NOx mass emissions and heat input in accordance with § 75.31(b)(2) or (c)(3) of this chapter, section 2.4 of appendix D to part 75 of this chapter, or section 2.5 of appendix E to part 75 of this chapter, as applicable.

(d) Prohibitions. (1) No owner or operator of a CAIR NOx Ozone Season unit shall use any alternative monitoring system, alternative reference method, or any other alternative to any requirement of this subpart without having obtained prior written approval in accordance with § 97.375.

(2) No owner or operator of a CAIR NOx Ozone Season unit shall operate the unit so as to discharge, or allow to be discharged, NOx emissions to the atmosphere without accounting for all such emissions in accordance with the applicable provisions of this subpart and part 75 of this chapter.

(3) No owner or operator of a CAIR NOx Ozone Season unit shall disrupt the continuous emission monitoring system, any portion thereof, or any other approved emission monitoring method, and thereby avoid monitoring and recording NOx mass emissions discharged into the atmosphere or heat input, except for periods of recertification or periods when calibration, quality assurance testing, or maintenance is performed in accordance with the applicable provisions of this subpart and part 75 of this chapter.

(4) No owner or operator of a CAIR NOx Ozone Season unit shall retire or
permanently discontinue use of the continuous emission monitoring system, any component thereof, or any other approved monitoring system under this subpart, except under any one of the following circumstances:

(i) During the period that the unit is covered by an exemption under §97.305 that is in effect;

(ii) The owner or operator is monitoring emissions from the unit with another certified monitoring system approved, in accordance with the applicable provisions of this subpart and part 75 of this chapter, by the Administrator for use at that unit that provides emission data for the same pollutant or parameter as the retired or discontinued monitoring system; or

(iii) The CAIR designated representative submits notification of the date of certification testing of a replacement monitoring system for the retired or discontinued monitoring system; or

(e) Long-term cold storage. The owner or operator of a CAIR NO$_X$ Ozone Season unit is subject to the applicable provisions of part 75 of this chapter concerning units in long-term cold storage.

§ 97.371 Initial certification and recertification procedures.

(a) The owner or operator of a CAIR NO$_X$ Ozone Season unit shall be exempt from the initial certification requirements of this section for a monitoring system under §97.370(a)(1) if the following conditions are met:

(1) The monitoring system has been previously certified in accordance with part 75 of this chapter; and

(2) The applicable quality-assurance and quality-control requirements of §75.21 of this chapter and appendix B, appendix D, and appendix E to part 75 of this chapter are fully met for the certified monitoring system described in paragraph (a)(1) of this section.

(b) The recertification provisions of this section shall apply to a monitoring system under §97.370(a)(1) exempt from initial certification requirements under paragraph (a) of this section.

(c) If the Administrator has previously approved a petition under §75.17(a) or (b) of this chapter for apportioning the NO$_X$ emission rate measured in a common stack or a petition under §75.66 of this chapter for an alternative to a requirement in §75.12 or §75.17 of this chapter, the CAIR designated representative shall resubmit the petition to the Administrator under §97.375 to determine whether the approval applies under the CAIR NO$_X$ Ozone Season Trading Program.

(d) Except as provided in paragraph (a) of this section, the owner or operator of a CAIR NO$_X$ Ozone Season unit shall comply with the following initial certification and recertification procedures for a continuous monitoring system (i.e., a continuous emission monitoring system and an excepted monitoring system under appendices D and E to part 75 of this chapter) under §97.370(a)(1). The owner or operator of a unit that qualifies to use the low mass emissions excepted monitoring methodology under §75.19 of this chapter or that qualifies to use an alternative monitoring system under subpart E of part 75 of this chapter shall comply with the procedures in paragraph (e) or (f) of this section respectively.

(1) Requirements for initial certification. The owner or operator shall ensure that each continuous monitoring system under §97.370(a)(1) (including the automated data acquisition and handling system) successfully completes all of the initial certification testing required under §75.20 of this chapter by the applicable deadline in §97.370(b). In addition, whenever the owner or operator installs a monitoring system to meet the requirements of this subpart in a location where no such monitoring system was previously installed, initial certification in accordance with §75.20 of this chapter is required.

(2) Requirements for recertification. Whenever the owner or operator makes a replacement, modification, or change in any certified continuous emission monitoring system under §97.370(a)(1) that may significantly affect the ability of the system to accurately measure or record NO$_X$ mass emissions or heat input rate or to meet the quality-assurance and quality-control requirements of §75.21 of this chapter or appendix B to part 75 of this chapter, the owner or operator shall recertify the monitoring system in accordance with
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§ 75.20(b) of this chapter. Furthermore, whenever the owner or operator makes a replacement, modification, or change to the flue gas handling system or the unit’s operation that may significantly change the stack flow or concentration profile, the owner or operator shall re-certify each continuous emission monitoring system whose accuracy is potentially affected by the change, in accordance with §75.20(b) of this chapter. Examples of changes to a continuous emission monitoring system that require recertification include: replacement of the analyzer, complete replacement of an existing continuous emission monitoring system, or change in location or orientation of the sampling probe or site. Any fuel flowmeter systems, and any excepted NOx monitoring system under appendix E to part 75 of this chapter, under §97.370(a)(1) are subject to the recertification requirements in §75.20(g)(6) of this chapter.

(3) Approval process for initial certification and recertification. Paragraphs (d)(3)(i) through (iv) of this section apply to both initial certification and recertification of a continuous monitoring system under §97.370(a)(1). For recertifications, replace the words “certification” and “initial certification” with the word “recertification”, replace the word “certified” with the word “recertified,” and follow the procedures in §§75.20(b)(5) and (g)(7) of this chapter in lieu of the procedures in paragraph (d)(3)(v) of this section.

(i) Notification of certification. The CAIR designated representative shall submit to the appropriate EPA Regional Office and the Administrator written notice of the dates of certification testing, in accordance with §97.373.

(ii) Certification application. The CAIR designated representative shall submit to the Administrator a certification application for each monitoring system. A complete certification application shall include the information specified in §75.63 of this chapter.

(iii) Provisional certification date. The provisional certification date for a monitoring system shall be determined in accordance with §75.20(a)(3) of this chapter. A provisionally certified monitoring system may be used under the CAIR NOx Ozone Season Trading Program for a period not to exceed 120 days after receipt by the Administrator of the complete certification application for the monitoring system under paragraph (d)(3)(ii) of this section. Data measured and recorded by the provisionally certified monitoring system, in accordance with the requirements of part 75 of this chapter, will be considered valid quality-assured data (retroactive to the date and time of provisional certification), provided that the Administrator does not invalidate the provisional certification by issuing a notice of disapproval within 120 days of the date of receipt of the complete certification application by the Administrator.

(iv) Certification application approval process. The Administrator will issue a written notice of approval or disapproval of the certification application to the owner or operator within 120 days of receipt of the complete certification application under paragraph (d)(3)(ii) of this section. In the event the Administrator does not issue such a notice within such 120-day period, each monitoring system that meets the applicable performance requirements of part 75 of this chapter and is included in the certification application will be deemed certified for use under the CAIR NOx Ozone Season Trading Program.

(A) Approval notice. If the certification application is complete and shows that each monitoring system meets the applicable performance requirements of part 75 of this chapter, then the Administrator will issue a written notice of approval of the certification application within 120 days of receipt.

(B) Incomplete application notice. If the certification application is not complete, then the Administrator will issue a written notice of incompleteness that sets a reasonable date by which the CAIR designated representative must submit the additional information required to complete the certification application. If the CAIR designated representative does not comply with the notice of incompleteness by the specified date, then the Administrator may issue a notice of disapproval under paragraph (d)(3)(iv)(C)
of this section. The 120-day review period shall not begin before receipt of a complete certification application.

(C) Disapproval notice. If the certification application shows that any monitoring system does not meet the performance requirements of part 75 of this chapter or if the certification application is incomplete and the requirement for disapproval under paragraph (d)(3)(iv)(B) of this section is met, then the Administrator will issue a written notice of disapproval of the certification application. Upon issuance of such notice of disapproval, the provisional certification is invalidated by the Administrator and the data measured and recorded by each uncertified monitoring system shall not be considered valid quality-assured data beginning with the date and hour of provisional certification (as defined under §75.20(a)(3) of this chapter). The owner or operator shall follow the procedures for loss of certification in paragraph (d)(3)(v) of this section for each monitoring system that is disapproved for initial certification.

(D) Audit decertification. The Administrator may issue a notice of disapproval of the certification status of a monitor in accordance with §97.372(b).

(v) Procedures for loss of certification. If the Administrator issues a notice of disapproval of a certification application under paragraph (d)(3)(iv)(C) of this section or a notice of disapproval of certification status under paragraph (d)(3)(iv)(D) of this section, then:

(A) The owner or operator shall substitute the following values, for each disapproved monitoring system, for each hour of unit operation during the period of invalid data specified under §75.20(a)(4)(iii), §75.20(g)(7), or §75.21(e) of this chapter and continuing until the applicable date and hour specified under §75.20(a)(5)(i) or (g)(7) of this chapter:

(1) For a disapproved NOX emission rate (i.e., NOx-diluent) system, the maximum potential NOX emission rate, as defined in (72.2 of this chapter.

(2) For a disapproved NOX pollutant concentration monitor and disapproved flow monitor, respectively, the maximum potential concentration of NOX and the maximum potential flow rate, as defined in sections 2.1.2.1 and 2.1.4.1 of appendix A to part 75 of this chapter.

(3) For a disapproved moisture monitoring system and disapproved diluent gas monitoring system, respectively, the minimum potential moisture percentage and either the maximum potential O2 concentration or the minimum potential O2 concentration (as applicable), as defined in sections 2.1.5, 2.1.3.1, and 2.1.3.2 of appendix A to part 75 of this chapter.

(4) For a disapproved fuel flowmeter system, the maximum potential fuel flow rate, as defined in section 2.4.2.1 of appendix D to part 75 of this chapter.

(5) For a disapproved excepted NOX monitoring system under appendix E to part 75 of this chapter, the fuel-specific maximum potential NOX emission rate, as defined in (72.2 of this chapter.

(B) The CAIR designated representative shall submit a notification of certification retest dates and a new certification application in accordance with paragraphs (d)(3)(i) and (ii) of this section.

(C) The owner or operator shall repeat all certification tests or other requirements that were failed by the monitoring system, as indicated in the Administrator’s notice of disapproval, no later than 30 unit operating days after the date of issuance of the notice of disapproval.

(e) Initial certification and recertification procedures for units using the low mass emission excepted methodology under §75.19 of this chapter. The owner or operator of a unit qualified to use the low mass emissions (LME) excepted methodology under §75.19 of this chapter shall meet the applicable certification and recertification requirements in §§75.19(a)(2) and 75.20(h) of this chapter. If the owner or operator of such a unit elects to certify a fuel flowmeter system for heat input determination, the owner or operator shall also meet the certification and recertification requirements in §75.20(g) of this chapter.

(f) Certification/recertification procedures for alternative monitoring systems. The CAIR designated representative of each unit for which the owner or operator intends to use an alternative monitoring system approved by the Administrator under subpart E of part 75 of

§ 97.374 Recordkeeping and reporting.

(a) General provisions. The CAIR designated representative shall comply with all recordkeeping and reporting requirements in this section, the applicable recordkeeping and reporting requirements under §75.73 of this chapter, and the requirements of §97.310(e)(1).

(b) Monitoring Plans. The owner or operator of a CAIR NO\textsubscript{X} Ozone Season unit shall comply with requirements of § 75.73 (c) and (e) of this chapter and, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, §§97.383 and 97.384(a).

(c) Certification Applications. The CAIR designated representative shall submit an application to the Administrator within 45 days after completing all initial certification or recertification tests required under §97.371, including the information required under §75.63 of this chapter.

(d) Quarterly reports. The CAIR designated representative shall submit quarterly reports, as follows:

(1) If the CAIR NO\textsubscript{X} Ozone Season unit is subject to an Acid Rain emissions limitation or a CAIR NO\textsubscript{X} emissions limitation or if the owner or operator of such unit chooses to report on an annual basis under this subpart, the CAIR designated representative shall meet the requirements of subpart H of part 75 of this chapter (concerning monitoring of NO\textsubscript{X} mass emissions) for such unit for the entire year and shall report the NO\textsubscript{X} mass emissions data and heat input data for such unit, in an electronic quarterly report in a format prescribed by the Administrator, for each calendar quarter beginning with:

(i) For a unit that commences commercial operation before July 1, 2007, the calendar quarter covering May 1, 2008 through June 30, 2008;

(ii) For a unit that commences commercial operation on or after July 1, 2007, the calendar quarter corresponding to the earlier of the date of provisional certification or the applicable deadline for initial certification under §97.370(b), unless that quarter is
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the third or fourth quarter of 2007 or the first quarter of 2008, in which case reporting shall commence in the quarter covering May 1, 2008 through June 30, 2008;

(iii) Notwithstanding paragraphs (d)(1) (i) and (ii) of this section, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, the calendar quarter corresponding to the date specified in §97.384(b); and

(iv) Notwithstanding paragraphs (d)(1) (i) and (ii) of this section, for a CAIR NOX Ozone Season opt-in unit under subpart III of this part, the calendar quarter corresponding to the date on which the CAIR NOX Ozone Season opt-in unit enters the CAIR NOX Ozone Season Trading Program as provided in §97.384(g).

(2) If the CAIR NOX Ozone Season unit is not subject to an Acid Rain emissions limitation or a CAIR NOX emissions limitation, then the CAIR designated representative shall either:

(i) Meet the requirements of subpart H of part 75 (concerning monitoring of NOX mass emissions) for such unit for the entire year and report the NOX mass emissions data and heat input data for such unit in accordance with paragraph (d)(1) of this section; or

(ii) Meet the requirements of subpart H of part 75 for the control period (including the requirements in §75.74(c) of this chapter) and report NOX mass emissions data and heat input data (including the data described in §75.74(c)(6) of this chapter) for such unit only for the control period of each year and report, in an electronic quarterly report in a format prescribed by the Administrator, for each calendar quarter beginning with:

(A) For a unit that commences commercial operation before July 1, 2007, the calendar quarter covering May 1, 2008 through June 30, 2008;

(B) For a unit that commences commercial operation on or after July 1, 2007, the calendar quarter corresponding to the earlier of the date of provisional certification or the applicable deadline for initial certification under §97.370(b), unless that date is not during a control period, in which case reporting shall commence in the quarter that includes May 1 through June 30 of the first control period after such date;

(C) Notwithstanding paragraphs (d)(2)(i)(A) and (2)(i)(B) of this section, for a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under subpart III of this part, the calendar quarter corresponding to the date specified in §97.384(b); and

(D) Notwithstanding paragraphs (d)(2)(i)(A) and (2)(i)(B) of this section, for a CAIR NOX Ozone Season opt-in unit under subpart III of this part, the calendar quarter corresponding to the date on which the CAIR NOX Ozone Season opt-in unit enters the CAIR NOX Ozone Season Trading Program as provided in §97.384(g).

(3) The CAIR designated representative shall submit each quarterly report to the Administrator within 30 days following the end of the calendar quarter covered by the report. Quarterly reports shall be submitted in the manner specified in §75.73(f) of this chapter.

(e) Compliance certification. The CAIR designated representative shall submit to the Administrator a compliance certification (in a format prescribed by the Administrator) in support of each quarterly report based on reasonable inquiry of those persons with primary responsibility for ensuring that all of the unit’s emissions are correctly and fully monitored. The certification shall state that:

(1) The monitoring data submitted were recorded in accordance with the applicable requirements of this subpart and part 75 of this chapter, including the quality assurance procedures and specifications;
(2) For a unit with add-on NOX emission controls and for all hours where NOX data are substituted in accordance with §75.34(a)(1) of this chapter, the add-on emission controls were operating within the range of parameters listed in the quality assurance/quality control program under appendix B to part 75 of this chapter and the substitute data values do not systematically underestimate NOX emissions; and

(3) For a unit that is reporting on a control period basis under paragraph (d)(2)(ii) of this section, the NOX emission rate and NOX concentration values substituted for missing data under subpart D of part 75 of this chapter are calculated using only values from a control period and do not systematically underestimate NOX emissions.

§ 97.375 Petitions.

The CAIR designated representative of a CAIR NOX Ozone Season unit may submit a petition under §75.66 of this chapter to the Administrator requesting approval to apply an alternative to any requirement of this subpart. Application of an alternative to any requirement of this subpart is in accordance with this subpart only to the extent that the petition is approved in writing by the Administrator, in consultation with the permitting authority.

Subpart III—CAIR NOX Ozone Season Opt-in Units

§ 97.380 Applicability.

A CAIR NOX Ozone Season opt-in unit must be a unit that:

(a) Is located in a State that submits, and for which the Administrator approves, a State implementation plan revision in accordance with §51.123(ee)(3) (i), (ii), or (iii) of this chapter establishing procedures concerning CAIR Ozone Season opt-in units;

(b) Is not a CAIR NOX Ozone Season unit under §97.304 and is not covered by a retired unit exemption under §97.305 that is in effect;

(c) Is not covered by a retired unit exemption under §72.8 of this chapter that is in effect;

(d) Has or is required or qualified to have a title V operating permit or other federally enforceable permit; and

(e) Vents all of its emissions to a stack and can meet the monitoring, recordkeeping, and reporting requirements of subpart HHHH of this part.

§ 97.381 General.

(a) Except as otherwise provided in §§97.301 through 97.304, §§97.306 through 97.308, and subparts BBBB and CCCC and subparts FFFF through HHHH of this part, a CAIR NOX Ozone Season opt-in unit shall be treated as a CAIR NOX Ozone Season unit for purposes of applying such sections and subparts of this part.

(b) Solely for purposes of applying, as provided in this subpart, the requirements of subpart HHHH of this part to a unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under this subpart, such unit shall be treated as a CAIR NOX Ozone Season unit before issuance of a CAIR opt-in permit for such unit.

§ 97.382 CAIR designated representative.

Any CAIR NOX Ozone Season opt-in unit, and any unit for which a CAIR opt-in permit application is submitted and not withdrawn and a CAIR opt-in permit is not yet issued or denied under this subpart, located at the same source as one or more CAIR NOX Ozone Season units shall have the same CAIR designated representative and alternate CAIR designated representative as such CAIR NOX Ozone Season units.

§ 97.383 Applying for CAIR opt-in permit.

(a) Applying for initial CAIR opt-in permit.

The CAIR designated representative of a unit meeting the requirements for a CAIR NOX Ozone Season opt-in unit in §97.380 may apply for an initial CAIR opt-in permit at any time, except as provided under §97.388 (f) and (g), and, in order to apply, must submit the following:

(1) A complete CAIR permit application under §97.322;

(2) A certification, in a format specified by the permitting authority, that the unit:
§ 97.384 Opt-in process.

The permitting authority will issue or deny a CAIR opt-in permit for a unit for which an initial application for a CAIR opt-in permit under § 97.383 is submitted in accordance with the following, to the extent provided in a State implementation plan revision submitted in accordance with § 51.123(ee)(3)(i), (ii), or (iii) of this chapter and approved by the Administrator:

(a) Interim review of monitoring plan.

(1) The permitting authority and the Administrator will determine, on an interim basis, the sufficiency of the monitoring plan accompanying the initial application for a CAIR opt-in permit under § 97.383. A monitoring plan is sufficient, for purposes of interim review, if the plan appears to contain information demonstrating that the NOx emissions rate and heat input of the unit and all other applicable parameters are monitored and reported in accordance with subpart HHHH of this part.

(b) Duty to reapply.

(1) The CAIR designated representative of a CAIR NOx Ozone Season opt-in unit shall submit a complete CAIR permit application under § 97.322 to renew the CAIR opt-in unit permit in accordance with the permitting authority’s regulations for title V operating permits, or the permitting authority’s regulations for other federally enforceable permits if applicable, addressing permit renewal.

(2) Unless the permitting authority issues a notification of acceptance of withdrawal of the CAIR NOx Ozone Season opt-in unit from the CAIR NOx Ozone Season Trading Program in accordance with § 97.385, the CAIR NOx Ozone Season opt-in unit shall remain subject to the requirements for a CAIR NOx Ozone Season opt-in unit, even if the CAIR designated representative for the CAIR NOx Ozone Season opt-in unit fails to submit a CAIR permit application that is required for renewal of the CAIR opt-in permit under paragraph (b)(1) of this section.

(i) Is not a CAIR NOx Ozone Season unit under § 97.304 and is not covered by a retired unit exemption under § 97.305 that is in effect;

(ii) Is not covered by a retired unit exemption under § 72.8 of this chapter that is in effect;

(iii) Vents all of its emissions to a stack; and

(iv) Has documented heat input for more than 876 hours during the 6 months immediately preceding submission of the CAIR permit application under § 97.322;

(3) A monitoring plan in accordance with subpart HHHH of this part;

(4) A complete certificate of representation under § 97.313 consistent with § 97.382, if no CAIR designated representative has been previously designated for the source that includes the unit; and

(5) A statement, in a format specified by the permitting authority, whether the CAIR designated representative requests that the unit be allocated CAIR NOx Ozone Season allowances under § 97.380(b) or § 97.388(c) (subject to the conditions in §§ 97.384(h) and 97.386(g)), to the extent such allocation is provided in a State implementation plan revision submitted in accordance with § 51.123(ee)(3)(i), (ii), or (iii) of this chapter and approved by the Administrator. If allocation under § 97.388(c) is requested, this statement shall include a statement that the owners and operators intend to repower the unit before January 1, 2015 and that they will provide, upon request, documentation demonstrating such intent.
(i) The monitoring and reporting under paragraph (b)(1)(i) of this section shall include the entire control period immediately before the date on which the unit enters the CAIR NO\textsubscript{X} Ozone Season Trading Program under §97.384(g), during which period monitoring system availability must not be less than 90 percent under subpart HHHH of this part and the unit must be in full compliance with any applicable State or Federal emissions or emissions-related requirements.

(2) To the extent the NO\textsubscript{X} emissions rate and the heat input of the unit are monitored and reported in accordance with subpart HHHH of this part for one or more control periods, in addition to the control period under paragraph (b)(1)(ii) of this section, during which control periods monitoring system availability is not less than 90 percent under subpart HHHH of this part and the unit is in full compliance with any applicable State or Federal emissions or emissions-related requirements and which control periods begin not more than 3 years before the unit enters the CAIR NO\textsubscript{X} Ozone Season Trading Program under §97.384(g), such information shall be used as provided in paragraphs (c) and (d) of this section.

(c) Baseline heat input. The unit’s baseline heat input shall equal:

(1) If the unit’s NO\textsubscript{X} emissions rate and heat input are monitored and reported for only one control period, in accordance with paragraph (b)(1) of this section, the unit’s total heat input (in mmBtu) for the control period; or

(2) If the unit’s NO\textsubscript{X} emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, and the unit does not have add-on NO\textsubscript{X} emission controls during any such control periods, the average of the amounts of the unit’s baseline NO\textsubscript{X} emissions rate (in lb/mmBtu) for the control periods under paragraphs (b)(1)(ii) and (2) of this section; or

(3) If the unit’s NO\textsubscript{X} emissions rate and heat input are monitored and reported for more than one control period, in accordance with paragraphs (b)(1) and (2) of this section, and the unit has add-on NO\textsubscript{X} emission controls during any such control periods, the average of the amounts of the unit’s NO\textsubscript{X} emissions rate (in lb/mmBtu) for such control periods during which the unit has add-on NO\textsubscript{X} emission controls.

(e) Issuance of CAIR opt-in permit. After calculating the baseline heat input and the baseline NO\textsubscript{X} emissions rate for the unit under paragraphs (c) and (d) of this section and if the permitting authority determines that the CAIR designated representative shows that the unit meets the requirements for a CAIR NO\textsubscript{X} Ozone Season opt-in unit in §97.380 and meets the elements certified in §97.383(a)(2), the permitting authority will issue a CAIR opt-in permit. The permitting authority will provide a copy of the CAIR opt-in permit to the Administrator, who will then establish a compliance account for the source that includes the CAIR NO\textsubscript{X} Ozone Season opt-in unit unless the source already has a compliance account.

(f) Issuance of denial of CAIR opt-in permit. Notwithstanding paragraphs (a) through (e) of this section, if at any time before issuance of a CAIR opt-in permit for the unit, the permitting authority determines that the CAIR designated representative fails to show that the unit meets the requirements for a CAIR NO\textsubscript{X} Ozone Season opt-in unit in §97.380 or meets the elements certified in §97.383(a)(2), the permitting authority will issue a denial of a CAIR opt-in permit for the unit.

(g) Date of entry into CAIR NO\textsubscript{X} Ozone Season Trading Program. A unit for which an initial CAIR opt-in permit is

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issued by the permitting authority shall become a CAIR NO\textsubscript{X} Ozone Season opt-in unit, and a CAIR NO\textsubscript{X} Ozone Season unit, as of the later of May 1, 2009 or May 1 of the first control period during which such CAIR opt-in permit is issued.

(h) Repowered CAIR NO\textsubscript{X} Ozone Season opt-in unit. (1) If CAIR designated representative requests, and the permitting authority issues a CAIR opt-in permit providing for, allocation to a CAIR NO\textsubscript{X} Ozone Season opt-in unit of CAIR NO\textsubscript{X} Ozone Season allowances under §97.388(c) and such unit is repowered after its date of entry into the CAIR NO\textsubscript{X} Ozone Season Trading Program under paragraph (g) of this section, the repowered unit shall be treated as a CAIR NO\textsubscript{X} Ozone Season opt-in unit replacing the original CAIR NO\textsubscript{X} Ozone Season opt-in unit, as of the date of start-up of the repowered unit’s combustion chamber.

(2) Notwithstanding paragraphs (c) and (d) of this section, as of the date of start-up under paragraph (h)(1) of this section, the repowered unit shall be deemed to have the same date of commencement of operation, date of commencement of commercial operation, baseline heat input, and baseline NO\textsubscript{X} emission rate as the original CAIR NO\textsubscript{X} Ozone Season opt-in unit, and the original CAIR NO\textsubscript{X} Ozone Season opt-in unit shall no longer be treated as a CAIR NO\textsubscript{X} Ozone Season opt-in unit or a CAIR NO\textsubscript{X} Ozone Season unit.

§ 97.385 CAIR opt-in permit contents.

(a) Each CAIR opt-in permit will contain:

(1) All elements required for a complete CAIR permit application under §97.322;

(2) The certification in §97.383(a)(2);

(3) The unit’s baseline heat input under §97.384(c);

(4) The unit’s baseline NO\textsubscript{X} emission rate under §97.384(d);

(5) A statement whether the unit is to be allocated CAIR NO\textsubscript{X} Ozone Season allowances under §97.388(b) or §97.388(c) (subject to the conditions in §§97.384(h) and 97.386(g));

(6) A statement that the unit may withdraw from the CAIR NO\textsubscript{X} Ozone Season Trading Program only in accordance with §97.386; and

(7) A statement that the unit is subject to, and the owners and operators of the unit must comply with, the requirements of §97.387.

(b) Each CAIR opt-in permit is deemed to incorporate automatically the definitions of terms under §97.302 and, upon recordation by the Administrator under subpart FFFF or GGGG of this part or this subpart, every allocation, transfer, or deduction of CAIR NO\textsubscript{X} Ozone Season allowances to or from the compliance account of the source that includes a CAIR NO\textsubscript{X} Ozone Season opt-in unit covered by the CAIR opt-in permit.

(c) The CAIR opt-in permit shall be included, in a format specified by the permitting authority, in the CAIR permit for the source where the CAIR NO\textsubscript{X} Ozone Season opt-in unit is located and in a title V operating permit or other federally enforceable permit for the source.

§ 97.386 Withdrawal from CAIR NO\textsubscript{X} Ozone Season Trading Program.

Except as provided under paragraph (g) of this section, a CAIR NO\textsubscript{X} Ozone Season opt-in unit may withdraw from the CAIR NO\textsubscript{X} Ozone Season Trading Program, but only if the permitting authority issues a notification to the CAIR designated representative of the CAIR NO\textsubscript{X} Ozone Season opt-in unit of the acceptance of the withdrawal of the CAIR NO\textsubscript{X} Ozone Season opt-in unit in accordance with paragraph (d) of this section.

(a) Requesting withdrawal. In order to withdraw a CAIR NO\textsubscript{X} Ozone Season opt-in unit from the CAIR NO\textsubscript{X} Ozone Season Trading Program, the CAIR designated representative of the CAIR NO\textsubscript{X} Ozone Season opt-in unit shall submit to the permitting authority a request to withdraw effective as of midnight of September 30 of a specified calendar year, which date must be at least 4 years after September 30 of the year of entry into the CAIR NO\textsubscript{X} Ozone Season Trading Program.

(b) Conditions for withdrawal. Before a CAIR NO\textsubscript{X} Ozone Season opt-in unit
covered by a request under paragraph (a) of this section may withdraw from the CAIR NO\textsubscript{X} Ozone Season Trading Program and the CAIR opt-in permit may be terminated under paragraph (e) of this section, the following conditions must be met:

1. For the control period ending on the date on which the withdrawal is to be effective, the source that includes the CAIR NO\textsubscript{X} Ozone Season opt-in unit must meet the requirement to hold CAIR NO\textsubscript{X} Ozone Season allowances under §97.386(c) and cannot have any excess emissions.

2. After the requirement for withdrawal under paragraph (b)(1) of this section is met, the Administrator will deduct from the compliance account of the source that includes the CAIR NO\textsubscript{X} Ozone Season opt-in unit CAIR NO\textsubscript{X} Ozone Season allowances equal in amount to and allocated for the same or a prior control period as any CAIR NO\textsubscript{X} Ozone Season allowances allocated to the CAIR NO\textsubscript{X} Ozone Season opt-in unit under §97.386 for any control period for which the withdrawal is to be effective. If there are no remaining CAIR NO\textsubscript{X} Ozone Season units at the source, the Administrator will close the compliance account, and the owners and operators of the CAIR NO\textsubscript{X} Ozone Season opt-in unit may submit a CAIR NO\textsubscript{X} Ozone Season allowance transfer for any remaining CAIR NO\textsubscript{X} Ozone Season allowances to another CAIR NO\textsubscript{X} Ozone Season Allowance Tracking System in accordance with subpart GGGG of this part.

(c) Notification. (1) After the requirements for withdrawal under paragraphs (a) and (b) of this section are met (including deduction of the full amount of CAIR NO\textsubscript{X} Ozone Season allowances required), the permitting authority will issue a notification to the CAIR designated representative of the CAIR NO\textsubscript{X} Ozone Season opt-in unit of the acceptance of the withdrawal of the CAIR NO\textsubscript{X} Ozone Season opt-in unit as of midnight on September 30 of the calendar year for which the withdrawal was requested.

2. If the requirements for withdrawal under paragraphs (a) and (b) of this section are not met, the permitting authority will issue a notification to the CAIR designated representative of the CAIR NO\textsubscript{X} Ozone Season opt-in unit that the CAIR NO\textsubscript{X} Ozone Season opt-in unit’s request to withdraw is denied. Such CAIR NO\textsubscript{X} Ozone Season opt-in unit shall continue to be a CAIR NO\textsubscript{X} Ozone Season opt-in unit.

(d) Permit amendment. After the permitting authority issues a notification under paragraph (c)(1) of this section that the requirements for withdrawal have been met, the permitting authority will revise the CAIR permit covering the CAIR NO\textsubscript{X} Ozone Season opt-in unit to terminate the CAIR opt-in permit for such unit as of the effective date specified under paragraph (c)(1) of this section. The unit shall continue to be a CAIR NO\textsubscript{X} Ozone Season opt-in unit until the effective date of the termination and shall comply with all requirements under the CAIR NO\textsubscript{X} Ozone Season Trading Program concerning any control periods for which the unit is a CAIR NO\textsubscript{X} Ozone Season opt-in unit, even if such requirements arise or must be complied with after the withdrawal takes effect.

(e) Reapplication upon failure to meet conditions of withdrawal. If the permitting authority denies the CAIR NO\textsubscript{X} Ozone Season opt-in unit’s request to withdraw, the CAIR designated representative may not submit another request to withdraw in accordance with paragraphs (a) and (b) of this section.

(f) Ability to reapply to the CAIR NO\textsubscript{X} Ozone Season Trading Program. Once a CAIR NO\textsubscript{X} Ozone Season opt-in unit withdraws from the CAIR NO\textsubscript{X} Ozone Season Trading Program and its CAIR opt-in permit is terminated under this section, the CAIR designated representative may submit another application for a CAIR opt-in permit under §97.386 for such CAIR NO\textsubscript{X} Ozone Season opt-in unit before the date that is 4 years after the date on which the withdrawal became effective. Such new application for a CAIR opt-in permit will be treated as an initial application for a CAIR opt-in permit under §97.384.

(g) Inability to withdraw. Notwithstanding paragraphs (a) through (f) of this section, a CAIR NO\textsubscript{X} Ozone Season opt-in unit shall not be eligible to withdraw from the CAIR NO\textsubscript{X} Ozone Season Trading Program if the CAIR designated representative of the CAIR NO\textsubscript{X} Ozone Season opt-in unit requests,
§ 97.387 Change in regulatory status.

(a) Notification. If a CAIR NOx Ozone Season opt-in unit becomes a CAIR NOx Ozone Season unit under §97.304, then the CAIR designated representative shall notify in writing the permitting authority and the Administrator of such change in the CAIR NOx Ozone Season opt-in unit’s regulatory status, within 30 days of such change.

(b) Permitting authority’s and Administrator’s actions. (1) If a CAIR NOx Ozone Season opt-in unit becomes a CAIR NOx Ozone Season unit under §97.304, the permitting authority will revise the CAIR NOx Ozone Season opt-in unit’s CAIR opt-in permit to meet the requirements of a CAIR permit under §97.323, and remove the CAIR opt-in permit provisions, as of the date on which the CAIR NOx Ozone Season opt-in unit becomes a CAIR NOx Ozone Season unit under §97.304.

(2)(i) The Administrator will deduct from the compliance account of the source that includes the CAIR NOx Ozone Season opt-in unit that becomes a CAIR NOx Ozone Season unit under §97.304, CAIR NOx Ozone Season allowances equal in amount to and allocated for the same or a prior control period as:

(A) Any CAIR NOx Ozone Season allowances allocated to the CAIR NOx Ozone Season opt-in unit under §97.388 for any control period after the date on which the CAIR NOx Ozone Season opt-in unit becomes a CAIR NOx Ozone Season unit under §97.304; and

(B) If the date on which the CAIR NOx Ozone Season opt-in unit becomes a CAIR NOx Ozone Season unit under §97.304 is not September 30, the CAIR NOx Ozone Season allowances allocated to the CAIR NOx Ozone Season opt-in unit for the control period that includes the date on which the CAIR NOx Ozone Season opt-in unit becomes a CAIR NOx Ozone Season unit under §97.304, multiplied by the ratio of the number of days, in the control period, starting with the date on which the CAIR NOx Ozone Season opt-in unit becomes a CAIR NOx Ozone Season unit under §97.304 divided by the total number of days in the control period and rounded to the nearest whole allowance as appropriate.

(ii) If the date on which the CAIR NOx Ozone Season opt-in unit becomes a CAIR NOx Ozone Season unit under §97.304 is not September 30, the following amount of CAIR NOx Ozone Season allowances will be allocated to the CAIR NOx Ozone Season opt-in unit (as a CAIR NOx Ozone Season unit) under §97.342 for the control period that includes the date on which the CAIR NOx Ozone Season opt-in unit becomes a CAIR NOx Ozone Season unit under §97.304:

(A) The amount of CAIR NOx Ozone Season allowances otherwise allocated to the CAIR NOx Ozone Season opt-in unit (as a CAIR NOx Ozone Season unit) under §97.342 for the control period multiplied by:

(B) The ratio of the number of days, in the control period, starting with the date on which the CAIR NOx Ozone Season opt-in unit becomes a CAIR NOx Ozone Season unit under §97.304, divided by the total number of days in the control period; and

(C) Rounded to the nearest whole allowance as appropriate.


§ 97.388 CAIR NOx Ozone Season allowance allocations to CAIR NOx Ozone Season opt-in units.

(a) Timing requirements. (1) When the CAIR opt-in permit is issued under §97.384(e), the permitting authority
will allocate CAIR NO\textsubscript{X} Ozone Season allowances to the CAIR NO\textsubscript{X} Ozone Season opt-in unit, and submit to the Administrator the allocation for the control period in which a CAIR NO\textsubscript{X} Ozone Season opt-in unit enters the CAIR NO\textsubscript{X} Ozone Season Trading Program under §97.384(g), in accordance with paragraph (b) or (c) of this section.

(2) By no later than July 31 of the control period after the control period in which a CAIR NO\textsubscript{X} Ozone Season opt-in unit enters the CAIR NO\textsubscript{X} Ozone Season Trading Program under §97.384(g) and July 31 of each year thereafter, the permitting authority will allocate CAIR NO\textsubscript{X} Ozone Season allowances to the CAIR NO\textsubscript{X} Ozone Season opt-in unit, and submit to the Administrator the allocation for the control period that includes such submission deadline and in which the unit is a CAIR NO\textsubscript{X} Ozone Season opt-in unit, in accordance with paragraph (b) or (c) of this section.

(b) Calculation of allocation. For each control period for which a CAIR NO\textsubscript{X} Ozone Season opt-in unit is to be allocated CAIR NO\textsubscript{X} Ozone Season allowances, the permitting authority will allocate in accordance with the following procedures, if provided in a State implementation plan revision submitted in accordance with §51.123(ee)(3)(i), (ii), or (iii) of this chapter and approved by the Administrator:

(1) The heat input (in mmBtu) used for calculating the CAIR NO\textsubscript{X} Ozone Season allowance allocation will be the lesser of:

(i) The CAIR NO\textsubscript{X} Ozone Season opt-in unit’s baseline NO\textsubscript{X} emissions rate (in lb/mmBtu) determined under §97.384(d) and multiplied by 70 percent; or

(ii) The most stringent State or Federal NO\textsubscript{X} emissions limitation applicable to the CAIR NO\textsubscript{X} Ozone Season opt-in unit at any time during the control period for which CAIR NO\textsubscript{X} Ozone Season allowances are to be allocated.

(3) The permitting authority will allocate CAIR NO\textsubscript{X} Ozone Season allowances to the CAIR NO\textsubscript{X} Ozone Season opt-in unit in an amount equaling the heat input under paragraph (b)(1) of this section, multiplied by the NO\textsubscript{X} emission rate under paragraph (b)(2) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole allowance as appropriate.

(c) Notwithstanding paragraph (b) of this section and if the CAIR designated representative requests, and the permitting authority issues a CAIR opt-in permit (based on a demonstration of the intent to repower stated under §97.383 (a)(5)) providing for, allocation to a CAIR NO\textsubscript{X} Ozone Season opt-in unit of CAIR NO\textsubscript{X} Ozone Season allowances under this paragraph (subject to the conditions in §§97.384(h) and 97.386(g)), the permitting authority will allocate to the CAIR NO\textsubscript{X} Ozone Season opt-in unit as follows, if provided in a State implementation plan revision submitted in accordance with §51.123(ee)(3)(i), (ii), or (iii) of this chapter and approved by the Administrator:

(1) For each control period in 2009 through 2014 for which the CAIR NO\textsubscript{X} Ozone Season opt-in unit is to be allocated CAIR NO\textsubscript{X} Ozone Season allowances, the

(i) The heat input (in mmBtu) used for calculating CAIR NO\textsubscript{X} Ozone Season allowance allocations will be determined as described in paragraph (b)(1) of this section.

(ii) The NO\textsubscript{X} emission rate (in lb/mmBtu) used for calculating CAIR NO\textsubscript{X} Ozone Season allowance allocations will be the lesser of:

(A) The CAIR NO\textsubscript{X} Ozone Season opt-in unit’s baseline NO\textsubscript{X} emissions rate (in lb/mmBtu) determined under §97.384(d); or
(B) The most stringent State or Federal NO\textsubscript{X} emissions limitation applicable to the CAIR NO\textsubscript{X} Ozone Season opt-in unit at any time during the control period in which the CAIR NO\textsubscript{X} Ozone Season opt-in unit enters the CAIR NO\textsubscript{X} Ozone Season Trading Program under §97.384(g).

(iii) The permitting authority will allocate CAIR NO\textsubscript{X} Ozone Season allowances to the CAIR NO\textsubscript{X} Ozone Season opt-in unit in an amount equaling the heat input under paragraph (c)(1)(i) of this section, multiplied by the NO\textsubscript{X} emission rate under paragraph (c)(1)(ii) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole allowance as appropriate.

(2) For each control period in 2015 and thereafter for which the CAIR NO\textsubscript{X} Ozone Season opt-in unit is to be allocated CAIR NO\textsubscript{X} Ozone Season allowances,

(i) The heat input (in mmBtu) used for calculating the CAIR NO\textsubscript{X} Ozone Season allowance allocations will be determined as described in paragraph (b)(1) of this section.

(ii) The NO\textsubscript{X} emission rate (in lb/mmBtu) used for calculating the CAIR NO\textsubscript{X} Ozone Season opt-in unit’s baseline NO\textsubscript{X} emissions rate (in lb/mmBtu) determined under §97.384(d); or

(C) The most stringent State or Federal NO\textsubscript{X} emissions limitation applicable to the CAIR NO\textsubscript{X} Ozone Season opt-in unit at any time during the control period for which CAIR NO\textsubscript{X} Ozone Season allowances are to be allocated.

(iii) The permitting authority will allocate CAIR NO\textsubscript{X} Ozone Season allowances to the CAIR NO\textsubscript{X} Ozone Season opt-in unit in an amount equaling the heat input under paragraph (c)(2)(i) of this section, multiplied by the NO\textsubscript{X} emission rate under paragraph (c)(2)(ii) of this section, divided by 2,000 lb/ton, and rounded to the nearest whole allowance as appropriate.

(d) Recordation. If provided in a State implementation plan revision submitted in accordance with §51.123(3)(1), (ii), or (iii) of this chapter and approved by the Administrator:

(1) The Administrator will record, in the compliance account of the source that includes the CAIR NO\textsubscript{X} Ozone Season opt-in unit, the CAIR NO\textsubscript{X} Ozone Season allowances allocated by the permitting authority to the CAIR NO\textsubscript{X} Ozone Season opt-in unit under paragraph (a)(1) of this section.

(2) By September 1 of the control period in which a CAIR NO\textsubscript{X} Ozone Season opt-in unit enters the CAIR NO\textsubscript{X} Ozone Season Trading Program under §97.384(g) and September 1 of each year thereafter, the Administrator will record, in the compliance account of the source that includes the CAIR NO\textsubscript{X} Ozone Season opt-in unit, the CAIR NO\textsubscript{X} Ozone Season allowances allocated by the permitting authority to the CAIR NO\textsubscript{X} Ozone Season opt-in unit under paragraph (a)(2) of this section.

APPENDIX A TO SUBPART IIII OF PART 97—STATES WITH APPROVED STATE IMPLEMENTATION PLAN REVISIONS CONCERNING CAIR NO\textsubscript{X} OZONE SEASON OPT-IN UNITS

1. The following States have State Implementation Plan revisions under §51.123(ee)(3) of this chapter approved by the Administrator and establishing procedures providing for CAIR NO\textsubscript{X} Ozone Season opt-in units under subpart IIII of this part and allocation of CAIR NO\textsubscript{X} Ozone Season allowances to such units under §97.388(b):

- Indiana
- Michigan
- North Carolina
- Ohio
- South Carolina
- Tennessee

2. The following States have State Implementation Plan revisions under §51.123(3)(3) of this chapter approved by the Administrator and establishing procedures providing for CAIR NO\textsubscript{X} Ozone Season opt-in units under subpart IIII of this part and allocation of CAIR NO\textsubscript{X} Ozone Season allowances to such units under §97.388(c):

- Indiana
- Michigan
- North Carolina
- Ohio
- South Carolina
- Tennessee

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Environmental Protection Agency

Pt. 97, App. A
### APPENDIX B TO PART 97—FINAL SECTION 126 RULE: NON-EGU ALLOCATIONS, 2004–2007

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### Environmental Protection Agency

**Pt. 97, App. C**

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[65 FR 2727, Jan. 18, 2000, as amended at 66 FR 48576, Sept. 21, 2001]

### APPENDIX C TO PART 97—FINAL SECTION 126 RULE: TRADING BUDGET

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App. D

**TABLE A–4 TO SUBPART A OF PART 98—**

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**APPENDIX D TO PART 97—FINAL SECTION 126 RULE: STATE COMPLIANCE SUPPLEMENT POOLS FOR THE SECTION 126 FINAL RULE (TONS)**

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**PART 98—MANDATORY GREENHOUSE GAS REPORTING**

**Subpart A—General Provisions**

98.1 Purpose and scope.
98.2 Who must report?
98.3 What are the general monitoring, reporting, recordkeeping and verification requirements of this part?
98.4 Authorization and responsibilities of the designated representative.
98.5 How is the report submitted?
98.6 Definitions.
98.7 What standardized methods are incorporated by reference into this part?
98.8 What are the compliance and enforcement provisions of this part?
98.9 Addresses.

**Subpart B [Reserved]**

**Subpart C—General Stationary Fuel Combustion Sources**

98.30 Definition of the source category.
98.31 Reporting threshold.
98.32 GHGs to report.
98.33 Calculating GHG emissions.
98.34 Monitoring and QA/QC requirements.
98.35 Procedures for estimating missing data.
98.36 Data reporting requirements.
98.37 Records that must be retained.
98.38 Definitions.

**Table A-5 to Subpart A of Part 98—Supplier Category List for §98.2(a)(4)**

**Table A-6 to Subpart A of Part 98—Data Elements That Are Inputs to Emission Equations and for Which the Reporting Deadline Is Changed to September 30, 2011**

**Table A-1 to Subpart A of Part 98—Global Warming Potentials (100-Year Time Horizon)**

**Table A-2 to Subpart A of Part 98—Units of Measure Conversions**

**Table A-3 to Subpart A of Part 98—Source Category List for §98.2(a)(1)**

**Table A-4 to Subpart A of Part 98—Source Category List for §98.2(a)(2)**

**Table A-5 to Subpart A of Part 98—Supplier Category List for §98.2(a)(4)**

**Table A-6 to Subpart A of Part 98—Data Elements That Are Inputs to Emission Equations and for Which the Reporting Deadline Is Changed to September 30, 2011**

**Table C-1 to Subpart C of Part 98—Default CO2 Emission Factors and High Heat Values for Various Types of Fuel**

**Table C-2 to Subpart C of Part 98—Default CH4 and N2O Emission Factors for Various Types of Fuel**

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Subpart D—Electricity Generation

98.40 Definition of the source category.
98.41 Reporting threshold.
98.42 GHGs to report.
98.43 Calculating GHG emissions.
98.44 Monitoring and QA/QC requirements
98.45 Procedures for estimating missing data.
98.46 Data reporting requirements.
98.47 Records that must be retained.
98.48 Definitions.

Subpart E—Adipic Acid Production

98.50 Definition of the source category.
98.51 Reporting threshold.
98.52 GHGs to report.
98.53 Calculating GHG emissions.
98.54 Monitoring and QA/QC requirements
98.55 Procedures for estimating missing data.
98.56 Data reporting requirements.
98.57 Records that must be retained.
98.58 Definitions.

Subpart F—Aluminum Production

98.60 Definition of the source category.
98.61 Reporting threshold.
98.62 GHGs to report.
98.63 Calculating GHG emissions.
98.64 Monitoring and QA/QC requirements
98.65 Procedures for estimating missing data.
98.66 Data reporting requirements.
98.67 Records that must be retained.
98.68 Definitions.

Subpart G—Ammonia Manufacturing

98.70 Definition of the source category.
98.71 Reporting threshold.
98.72 GHGs to report.
98.73 Calculating GHG emissions.
98.74 Monitoring and QA/QC requirements
98.75 Procedures for estimating missing data.
98.76 Data reporting requirements.
98.77 Records that must be retained.
98.78 Definitions.

Subpart H—Cement Production

98.80 Definition of the source category.
98.81 Reporting threshold.
98.82 GHGs to report.
98.83 Calculating GHG emissions.
98.84 Monitoring and QA/QC requirements
98.85 Procedures for estimating missing data.
98.86 Data reporting requirements.
98.87 Records that must be retained.
98.88 Definitions.

Subpart I—Electronics Manufacturing

98.90 Definition of the source category.
98.91 Reporting threshold.
98.92 GHGs to report.
98.93 Calculating GHG emissions.
98.94 Monitoring and QA/QC requirements
98.95 Procedures for estimating missing data.
98.96 Data reporting requirements.
98.97 Records that must be retained.
98.98 Definitions.

Subpart J [Reserved]

Subpart K—Ferroalloy Production

98.110 Definition of the source category.
98.111 Reporting threshold.
98.112 GHGs to report.
98.113 Calculating GHG emissions.
98.114 Monitoring and QA/QC requirements
98.115 Procedures for estimating missing data.
98.116 Data reporting requirements.
98.117 Records that must be retained.
98.118 Definitions.
# TABLE K–1 TO SUBPART K OF PART 98—ELECTRIC ARC FURNACE (EAF) CH4 EMISSION FACTORS

## Subpart I—Fluorinated Gas Production

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## Subpart M (Reserved)

## Subpart N—Glass Production

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## Table N–1 to Subpart N of Part 98—CO2 Emission Factors for Carbonate-Based Raw Materials

## Subpart O—HCFC–22 Production and HFC–23 Destruction

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§ 98.1 Purpose and scope.

(a) This part establishes mandatory greenhouse gas (GHG) reporting requirements for owners and operators of certain facilities that directly emit GHG as well as for certain fossil fuel suppliers and industrial GHG suppliers. For suppliers, the GHGs reported are the quantity that would be emitted from combustion or use of the products supplied.

(b) Owners and operators of facilities and suppliers that are subject to this part must follow the requirements of this subpart and all applicable subparts of this part. If a conflict exists between a provision in subpart A and any other applicable subpart, the requirements of the applicable subpart shall take precedence.

§ 98.2 Who must report?

(a) The GHG reporting requirements and related monitoring, recordkeeping, and reporting requirements of this part apply to the owners and operators of any facility that is located in the United States or under or attached to the Outer Continental Shelf (as defined in 43 U.S.C. 1331) and that meets the requirements of either paragraph (a)(1), (a)(2), or (a)(3) of this section; and any supplier that meets the requirements of paragraph (a)(4) of this section:

1. A facility that contains any source category that is listed in Table A–3 of this subpart in any calendar year starting in 2010. For these facilities, the annual GHG report must cover stationary fuel combustion sources (subpart C of this part), miscellaneous uses of carbonates (subpart U of this part), and all applicable source categories listed in Table A–3 and Table A–4 of this subpart.

2. A facility that contains any source category that is listed in Table A–4 of this subpart and that emits 25,000 metric tons of CO₂e or more per year in combined emissions from stationary fuel combustion units, miscellaneous uses of carbonate, and all applicable source categories that are listed in Table A–3 and Table A–4 of this subpart. For these facilities, the annual GHG report must cover stationary fuel combustion sources (subpart C of this part), miscellaneous use of carbonates (subpart U of this part), and all applicable source categories listed in Table A–3 and Table A–4 of this subpart.

(b) A facility that contains any source category that is listed in Table A–4 of this subpart that emits 25,000 metric tons of CO₂e or more per year in combined emissions from stationary fuel combustion units, miscellaneous uses of carbonate, and all applicable source categories that are listed in Table A–3 and Table A–4 of this subpart.

3. A facility that in any calendar year starting in 2010 meets all three of the conditions listed in this paragraph (a)(3). For these facilities, the annual GHG report must cover emissions from stationary fuel combustion sources only.

(i) The facility does not meet the requirements of either paragraph (a)(1) or (a)(2) of this section.

(ii) The aggregate maximum rated heat input capacity of the stationary fuel combustion units at the facility is 30 mmBtu/hr or greater.

(iii) The facility emits 25,000 metric tons of CO₂e or more per year in combined emissions from stationary fuel combustion sources. 
emissions from all stationary fuel combustion sources.

(4) A supplier that is listed in Table A–5 of this subpart. For these suppliers, the annual GHG report must cover all applicable products for which calculation methodologies are provided in the subparts listed in Table A–5 of this subpart.

(5) Research and development activities are not considered to be part of any source category defined in this part.

(b) To calculate GHG emissions for comparison to the 25,000 metric ton CO$_2$e per year emission threshold in paragraph (a)(2) of this section, the owner or operator shall calculate an annual CO$_2$e emissions as described in paragraphs (b)(1) through (b)(4) of this section.

(1) Calculate the annual emissions of CO$_2$, CH$_4$, N$_2$O, and each fluorinated GHG in metric tons from all applicable source categories listed in paragraph (a)(2) of this section. The GHG emissions shall be calculated using the calculation methodologies specified in each applicable subpart and available company records. Include emissions from only those gases listed in Table A–1 of this subpart.

(2) For each general stationary fuel combustion unit, calculate the annual CO$_2$ emissions in metric tons using any of the four calculation methodologies specified in §98.33(a). Calculate the annual CH$_4$ and N$_2$O emissions from the stationary fuel combustion sources in metric tons using the appropriate equation in §98.33(c). Exclude carbon dioxide emissions from the combustion of biomass, but include emissions of CH$_4$ and N$_2$O from biomass combustion.

(3) For miscellaneous uses of carbonate, calculate the annual CO$_2$ emissions in metric tons using the procedures specified in subpart U of this part.

(4) Sum the emissions estimates from paragraphs (b)(1), (b)(2), and (b)(3) of this section for each GHG and calculate metric tons of CO$_2$e using Equation A–1 of this section.

$$\text{CO}_2\text{e} = \sum_{i=1}^{n} \text{GHG}_i \times \text{GWP}_i \quad (\text{Eq. A-1})$$

Where:

- CO$_2$e = Carbon dioxide equivalent, metric tons/year.
- GHG$_i$ = Mass emissions of each greenhouse gas listed in Table A–1 of this subpart, metric tons/year.
- GWP$_i$ = Global warming potential for each greenhouse gas from Table A–1 of this subpart.
- n = The number of greenhouse gases emitted.

(5) For purpose of determining if an emission threshold has been exceeded, include in the emissions calculation any CO$_2$ that is captured for transfer off site.

(c) To calculate GHG emissions for comparison to the 25,000 metric ton CO$_2$e/year emission threshold for stationary fuel combustion under paragraph (a)(3) of this section, calculate CO$_2$, CH$_4$, and N$_2$O emissions from each stationary fuel combustion unit by following the methods specified in paragraph (b)(2) of this section. Then, convert the emissions of each GHG to metric tons CO$_2$e per year using Equation A–1 of this section, and sum the emissions for all units at the facility.

(d) To calculate GHG quantities for comparison to the 25,000 metric ton CO$_2$ per year threshold for importers and exporters of coal-to-liquid products under paragraph (a)(4)(i) of this section, calculate the mass in metric tons per year of CO$_2$ that would result from the complete combustion or oxidation of the quantity of coal-to-liquid products that are imported during the reporting year and that are exported during the reporting year. Calculate the emissions using the methodology specified in subpart LL of this part.

(e) To calculate GHG quantities for comparison to the 25,000 metric ton CO$_2$e per year threshold for importers and exporters of petroleum products under paragraph (a)(4)(ii) of this section, calculate the mass in metric tons per year of CO$_2$ that would result from the complete combustion or oxidation of the volume of petroleum products and natural gas liquids that are imported during the reporting year and that are exported during the reporting year. Calculate the emissions using the methodology specified in subpart MM of this part.

(f) To calculate GHG quantities for comparison to the 25,000 metric ton
CO₂e per year threshold under paragraph (a)(4) of this section for importers and exporters of industrial greenhouse gases and for importers and exporters of CO₂, the owner or operator shall calculate the mass in metric tons per year of CO₂e imports and exports as described in paragraphs (f)(1) through (f)(3) of this section.

(1) Calculate the mass in metric tons per year of CO₂, N₂O, and each fluorinated GHG that is imported and the mass in metric tons per year of CO₂, N₂O, and each fluorinated GHG that is exported during the year. Include only those gases listed in Table A–1 of this subpart.

(2) Convert the mass of each imported and each GHG exported from paragraph (f)(1) of this section to metric tons of CO₂e using Equation A–1 of this section.

(3) Sum the total annual metric tons of CO₂e in paragraph (f)(2) of this section for all imported GHGs. Sum the total annual metric tons of CO₂e in paragraph (f)(2) of this section for all exported GHGs.

(g) If a capacity or generation reporting threshold in paragraph (a)(1) of this section applies, the owner or operator shall review the appropriate records and perform any necessary calculations to determine whether the threshold has been exceeded.

(h) An owner or operator of a facility or supplier that does not meet the applicability requirements of paragraph (a) of this section is not subject to this rule. Such owner or operator would become subject to the rule and reporting requirements § 98.3(b)(3), if a facility or supplier exceeds the applicability requirements of paragraph (a) of this section at a later time. Thus, the owner or operator should reevaluate the applicability to this part (including the revising of any relevant emissions calculations or other calculations) whenever there is any change that could cause a facility or supplier to meet the applicability requirements of paragraph (a) of this section. Such changes include but are not limited to process modifications, increases in operating hours, increases in production, changes in fuel or raw material use, addition of equipment, and facility expansion.

(i) Except as provided in this paragraph, once a facility or supplier is subject to the requirements of this part, the owner or operator must continue for each year thereafter to comply with all requirements of this part, including the requirement to submit annual GHG reports, even if the facility or supplier does not meet the applicability requirements in paragraph (a) of this section in a future year.

(1) If reported emissions are less than 25,000 metric tons CO₂e per year for five consecutive years, then the owner or operator may discontinue complying with this part provided that the owner or operator submits a notification to the Administrator that announces the cessation of reporting and explains the reasons for the reduction in emissions. The notification shall be submitted no later than March 31 of the year immediately following the fifth consecutive year of emissions less than 25,000 tons CO₂e per year. The owner or operator must maintain the corresponding records required under § 98.3(g) for each of the five consecutive years and retain such records for three years following the year that reporting was discontinued. The owner or operator must resume reporting if annual emissions in any future calendar year increase to 25,000 metric tons CO₂e per year or more.

(2) If reported emissions are less than 15,000 metric tons CO₂e per year for three consecutive years, then the owner or operator may discontinue complying with this part provided that the owner or operator submits a notification to the Administrator that announces the cessation of reporting and explains the reasons for the reduction in emissions. The notification shall be submitted no later than March 31 of the year immediately following the third consecutive year of emissions less than 15,000 tons CO₂e per year. The owner or operator must maintain the corresponding records required under § 98.3(g) for each of the three consecutive years and retain such records for three years following the year that reporting was discontinued. The owner or operator must resume reporting if annual emissions in any future calendar year increase to 25,000 metric tons CO₂e per year or more.
(3) If the operations of a facility or supplier are changed such that all applicable GHG-emitting processes and operations listed in paragraphs (a)(1) through (a)(4) of this section cease to operate, then the owner or operator is exempt from reporting in the years following the year in which cessation of such operations occurs, provided that the owner or operator submits a notification to the Administrator that announces the cessation of reporting and certifies to the closure of all GHG-emitting processes and operations. This paragraph (i)(2) does not apply to seasonal or other temporary cessation of operations. This paragraph (i)(3) does not apply to facilities with municipal solid waste landfills or industrial waste landfills, or to underground coal mines. The owner or operator must resume reporting for any future calendar year during which any of the GHG-emitting processes or operations resume operation.

(i) Table A–2 of this subpart provides a conversion table for some of the common units of measure used in part 98.

§ 98.3 What are the general monitoring, reporting, recordkeeping and verification requirements of this part?

The owner or operator of a facility or supplier that is subject to the requirements of this part must submit GHG reports to the Administrator, as specified in this section.

(a) General. Except as provided in paragraph (d) of this section, follow the procedures for emission calculation, monitoring, quality assurance, missing data, recordkeeping, and reporting that are specified in each relevant subpart of this part.

(b) Schedule. The annual GHG report for reporting year 2010 must be submitted no later than September 30, 2011. The annual report for reporting years 2011 and beyond must be submitted no later than March 31 of each calendar year for GHG emissions in the previous calendar year. As an example, for a facility or supplier that is subject to the rule in calendar year 2011, the annual report must be submitted on March 31, 2012.

(1) [Reserved]

(2) For a new facility or supplier that begins operation on or after January 1, 2010 and becomes subject to the rule in the year that it becomes operational, report emissions beginning with the first operating month and ending on December 31 of that year. Each subsequent annual report must cover emissions for the calendar year, beginning on January 1 and ending on December 31.

(3) For any facility or supplier that becomes subject to this rule because of a physical or operational change that is made after January 1, 2010, report emissions for the first calendar year in which the change occurs, beginning with the first month of the change and ending on December 31 of that year. For a facility or supplier that becomes subject to this rule solely because of an increase in hours of operation or level of production, the first month of the change is the month in which the increased hours of operation or level of production, if maintained for the remainder of the year, would cause the facility or supplier to exceed the applicable threshold. Each subsequent annual report must cover emissions for the calendar year, beginning on January 1 and ending on December 31.

(c) Content of the annual report. Except as provided in paragraph (d) of this section, each annual GHG report shall contain the following information:

(1) Facility name or supplier name (as appropriate), and physical street address of the facility or supplier, including the city, State, and zip code.

(2) Year and months covered by the report.

(3) Date of submittal.

(4) For facilities, except as otherwise provided in paragraph (c)(12) of this section, report annual emissions of CO₂, CH₄, N₂O, and each fluorinated GHG (as defined in §98.6) as follows.

(i) Annual emissions (excluding biogenic CO₂) aggregated for all GHG from all applicable source categories, expressed in metric tons of CO₂e calculated using Equation A–1 of this subpart.
(ii) Annual emissions of biogenic CO\(_2\) aggregated for all applicable source categories, expressed in metric tons.

(iii) Annual emissions from each applicable source category, expressed in metric tons of each applicable GHG listed in paragraphs (c)(4)(iii)(A) through (c)(4)(iii)(E) of this section.

(A) Biogenic CO\(_2\).

(B) CO\(_2\) (excluding biogenic CO\(_2\)).

(C) CH\(_4\).

(D) N\(_2\)O.

(E) Each fluorinated GHG (including those not listed in Table A–1 of this subpart).

(iv) Except as provided in paragraph (c)(4)(vii) of this section, emissions and other data for individual units, processes, activities, and operations as specified in the “Data reporting requirements” section of each applicable subpart of this part.

(v) Indicate (yes or no) whether reported emissions include emissions from a cogeneration unit located at the facility.

(vi) When applying paragraph (c)(4)(i) of this section to fluorinated GHGs, calculate and report CO\(_2\)e for only those fluorinated GHGs listed in Table A–1 of this subpart.

(vii) The owner or operator of a facility is not required to report the data elements specified in Table A–6 of this subpart for calendar year 2010 until September 30, 2011.

(viii) Applicable source categories means stationary fuel combustion sources (subpart C of this part), miscellaneous use of carbonates (subpart U of this part), and all of the source categories listed in Table A–3 and Table A–4 of this subpart present at the facility.

(5) For suppliers, report annual quantities of CO\(_2\), CH\(_4\), N\(_2\)O, and each fluorinated GHG (as defined in §98.6) that would be emitted from combustion or use of the products supplied, imported, and exported during the year. Calculate and report quantities at the following levels:

(i) Total quantity of GHG aggregated for all GHG from all applicable supply categories in Table A–5 of this subpart and expressed in metric tons of CO\(_2\)e calculated using Equation A–1 of this subpart. For fluorinated GHGs, calculate and report CO\(_2\)e for only those fluorinated GHGs listed in Table A–1 of this subpart.

(ii) Quantity of each GHG from each applicable supply category in Table A–5 of this subpart, expressed in metric tons of each GHG. For fluorinated GHG, report emissions of all fluorinated GHG, including those not listed in Table A–1 of this subpart. For fluorinated GHGs, calculate and report CO\(_2\)e for only those fluorinated GHGs listed in Table A–1 of this subpart.

(iii) Any other data specified in the “Data reporting requirements” section of each applicable subpart of this part.

(6) A written explanation, as required under §98.3(e), if you change emission calculation methodologies during the reporting period.

(7) A brief description of each “best available monitoring method” used according to paragraph (d) of this section, the parameter measured using the method, and the time period during which the “best available monitoring method” was used, if applicable.

(8) Each data element for which a missing data procedure was used according to the procedures of an applicable subpart and the total number of hours in the year that a missing data procedure was used for each data element.

(9) A signed and dated certification statement provided by the designated representative of the owner or operator, according to the requirements of §98.4(e)(1).

(10) NAICS code(s) that apply to the reporting entity. (i) Primary NAICS code. Report the NAICS code that most accurately describes the reporting entity’s primary product/activity/service. The primary product/activity/service is the principal source of revenue for the reporting entity. A reporting entity that has two distinct products/activities/services providing comparable revenue may report a second primary NAICS code.

(ii) Additional NAICS code(s). Report all additional NAICS codes that describe all product(s)/activity(s)/service(s) at the reporting entity that are not related to the principal source of revenue.

(11) Legal name(s) and physical address(es) of the highest-level United
States parent company(s) of the reporting entity and the percentage of ownership interest for each listed parent company as of December 31 of the year for which data are being reported according to the following instructions:

(i) If the reporting entity is entirely owned by a single United States company that is not owned by another company, provide that company’s legal name and physical address as the United States parent company and report 100 percent ownership.

(ii) If the reporting entity is entirely owned by a single United States company that is, itself, owned by another company (e.g., it is a division or subsidiary of a higher-level company), provide the legal name and physical address of the highest-level company in the ownership hierarchy as the United States parent company and report 100 percent ownership.

(iii) If the reporting entity is owned by more than one United States company (e.g., company A owns 40 percent, company B owns 35 percent, and company C owns 25 percent), provide the legal names and physical addresses of all the highest-level companies with an ownership interest as the United States parent companies, and report the percent ownership of each company.

(iv) If the reporting entity is owned by a joint venture or a cooperative, the joint venture or cooperative is its own United States parent company. Provide the legal name and physical address of the joint venture or cooperative as the United States parent company, and report 100 percent ownership by the joint venture or cooperative.

(v) If the reporting entity is entirely owned by a foreign company, provide the legal name and physical address of the foreign company’s highest-level company based in the United States as the United States parent company, and report 100 percent ownership.

(vi) If the reporting entity is partially owned by a foreign company and partially owned by one or more U.S. companies, provide the legal name and physical address of the foreign company’s highest-level company based in the United States, along with the legal names and physical addresses of the other U.S. parent companies, and report the percent ownership of each of these companies.

(vii) If the reporting entity is a federally owned facility, report “U.S. Government” and do not report physical address or percent ownership.

(12) For the 2010 reporting year only, facilities that have “part 75 units” (i.e., units that are subject to subpart D of this part or units that use the methods in part 75 of this chapter to quantify CO₂ mass emissions in accordance with §98.33(a)(5)) must report annual GHG emissions either in full accordance with paragraphs (c)(4)(i) through (c)(4)(iii) of this section or in full accordance with paragraphs (c)(12)(i) through (c)(12)(iii) of this section. If the latter reporting option is chosen, you must report:

(i) Annual emissions aggregated for all GHG from all applicable source categories, expressed in metric tons of CO₂e calculated using Equation A–1 of this subpart. You must include biogenic CO₂ emissions from part 75 units in these annual emissions, but exclude biogenic CO₂ emissions from any non-part 75 units and other source categories.

(ii) Annual emissions of biogenic CO₂, expressed in metric tons (excluding biogenic CO₂ emissions from part 75 units), aggregated for all applicable source categories.

(iii) Annual emissions from each applicable source category, expressed in metric tons of each applicable GHG listed in paragraphs (c)(12)(iii)(A) through (c)(12)(iii)(E) of this section.

(A) Biogenic CO₂ (excluding biogenic CO₂ emissions from part 75 units).

(B) CO₂. You must include biogenic CO₂ emissions from part 75 units in these totals and exclude biogenic CO₂ emissions from other non-part 75 units and other source categories.

(C) CH₄.

(D) N₂O.

(E) Each fluorinated GHG (including those not listed in Table A–1 of this subpart).

(d) Special provisions for reporting year 2010.

(1) Best available monitoring methods. During January 1, 2010 through March 31, 2010, owners or operators may use best available monitoring methods for...
any parameter (e.g., fuel use, daily carbon content of feedstock by process line) that cannot reasonably be measured according to the monitoring and QA/QC requirements of a relevant subpart. The owner or operator must use the calculation methodologies and equations in the “Calculating GHG Emissions” sections of each relevant subpart, but may use the best available monitoring method for any parameter for which it is not reasonably feasible to acquire, install, and operate a required piece of monitoring equipment by January 1, 2010. Starting no later than April 1, 2010, the owner or operator must discontinue using best available methods and begin following all applicable monitoring and QA/QC requirements of this part, except as provided in paragraphs (d)(2) and (d)(3) of this section. Best available monitoring methods means any of the following methods specified in this paragraph:

(i) Monitoring methods currently used by the facility that do not meet the specifications of a relevant subpart.
(ii) Supplier data.
(iii) Engineering calculations.
(iv) Other company records.

(2) Requests for extension of the use of best available monitoring methods. The owner or operator may submit a request to the Administrator to use one or more best available monitoring methods beyond March 31, 2010.

(i) Timing of request. The extension request must be submitted to EPA no later than 30 days after the effective date of the GHG reporting rule.

(ii) Content of request. Requests must contain the following information:

(A) A list of specific item of monitoring instrumentation for which the request is being made and the locations where each piece of monitoring instrumentation will be installed.

(B) Identification of the specific rule requirements (by rule subpart, section, and paragraph numbers) for which the instrumentation is needed.

(C) A description of the reasons why the needed equipment could not be obtained and installed before April 1, 2010.

(D) If the reason for the extension is that the equipment cannot be purchased and delivered by April 1, 2010, include supporting documentation such as the date the monitoring equipment was ordered, investigation of alternative suppliers and the dates by which alternative vendors promised delivery, backorder notices or unexpected delays, descriptions of actions taken to expedite delivery, and the current expected date of delivery.

(E) If the reason for the extension is that the equipment cannot be installed without a process unit shutdown, include supporting documentation demonstrating that it is not practicable to isolate the equipment and install the monitoring instrument without a full process unit shutdown. Include the date of the most recent process unit shutdown, the frequency of shutdowns for this process unit, and the date of the next planned shutdown during which the monitoring equipment can be installed. If there has been a shutdown or if there is a planned process unit shutdown between promulgation of this part and April 1, 2010, include a justification of why the equipment could not be obtained and installed during that shutdown.

(F) A description of the specific actions the facility will take to obtain and install the equipment as soon as reasonably feasible and the expected date by which the equipment will be installed and operating.

(iii) Approval criteria. To obtain approval, the owner or operator must demonstrate to the Administrator’s satisfaction that it is not reasonably feasible to acquire, install, and operate a required piece of monitoring equipment by April 1, 2010. The use of best available methods will not be approved beyond December 31, 2010.

(3) Abbreviated emissions report for facilities containing only general stationary fuel combustion sources. In lieu of the report required by paragraph (c) of this section, the owner or operator of an existing facility that is in operation on January 1, 2010 and that meets the conditions of §98.2(a)(3) may submit an abbreviated GHG report for the facility for GHGs emitted in 2010. The abbreviated report must be submitted by
September 30, 2011. An owner or operator that submits an abbreviated report must submit a full GHG report according to the requirements of paragraph (c) of this section beginning in calendar year 2012. The abbreviated facility report must include the following information:

(i) Facility name and physical street address including the city, state and zip code.

(ii) The year and months covered by the report.

(iii) Date of submittal.

(iv) Total facility GHG emissions aggregated for all stationary fuel combustion units calculated according to any method specified in §98.33(a) and expressed in metric tons of CO$_2$, CH$_4$, N$_2$O, and CO$_2$e.

(v) Any facility operating data or process information used for the GHG emission calculations.

(vi) A signed and dated certification statement provided by the designated representative of the owner or operator, according to the requirements of paragraph (e)(1) of this section.

(e) Emission calculations. In preparing the GHG report, you must use the calculation methodologies specified in the relevant subparts, except as specified in paragraph (d) of this section. For each source category, you must use the same calculation methodology throughout a reporting period unless you provide a written explanation of why a change in methodology was required.

(f) Verification. To verify the completeness and accuracy of reported GHG emissions, the Administrator may review the certification statements described in paragraphs (c)(9) and (d)(3)(vi) of this section and any other credible evidence, in conjunction with a comprehensive review of the GHG reports and periodic audits of selected reporting facilities. Nothing in this section prohibits the Administrator from using additional information to verify the completeness and accuracy of the reports.

(g) Recordkeeping. An owner or operator that is required to report GHGs under this part must keep records as specified in this paragraph. Retain all required records for at least 3 years. The records shall be kept in an electronic or hard-copy format (as appropriate) and recorded in a form that is suitable for expeditious inspection and review. Upon request by the Administrator, the records required under this section must be made available to EPA. Records may be retained off site if the records are readily available for expeditious inspection and review. For records that are electronically generated or maintained, the equipment or software necessary to read the records shall be made available, or, if requested by EPA, electronic records shall be converted to paper documents. You must retain the following records, in addition to those records prescribed in each applicable subpart of this part:

(1) A list of all units, operations, processes, and activities for which GHG emission were calculated.

(2) The data used to calculate the GHG emissions for each unit, operation, process, and activity, categorized by fuel or material type. These data include but are not limited to the following information in this paragraph (g)(2):

(i) The GHG emissions calculations and methods used.

(ii) Analytical results for the development of site-specific emissions factors.

(iii) The results of all required analyses for high heat value, carbon content, and other required fuel or feedstock parameters.

(iv) Any facility operating data or process information used for the GHG emission calculations.

(3) The annual GHG reports.

(4) Missing data computations. For each missing data event, also retain a record of the cause of the event and the corrective actions taken to restore malfunctioning monitoring equipment.

(5) A written GHG Monitoring Plan.

(i) At a minimum, the GHG Monitoring Plan shall include the elements listed in this paragraph (g)(5)(i).

(A) Identification of positions of responsibility (i.e., job titles) for collection of the emissions data.

(B) Explanation of the processes and methods used to collect the necessary data for the GHG calculations.

(C) Description of the procedures and methods that are used for quality assurance, maintenance, and repair of all
(g)(ii) The GHG Monitoring Plan may rely on references to existing corporate documents (e.g., standard operating procedures, quality assurance programs under appendix F to 40 CFR part 60 or appendix B to 40 CFR part 75, and other documents) provided that the elements required by paragraph (g)(5)(i) of this section are easily recognizable.

(iii) The owner or operator shall revise the GHG Monitoring Plan as needed to reflect changes in production processes, monitoring instrumentation, and quality assurance procedures; or to improve procedures for the maintenance and repair of monitoring systems to reduce the frequency of monitoring equipment downtime.

(iv) Upon request by the Administrator, the owner or operator shall make all information that is collected in conformance with the GHG Monitoring Plan available for review during an audit. Electronic storage of the information in the plan is permissible, provided that the information can be made available in hard copy upon request during an audit.

(6) The results of all required certification and quality assurance tests of continuous monitoring systems, fuel flow meters, and other instrumentation used to provide data for the GHGs reported under this part.

(7) Maintenance records for all continuous monitoring systems, flow meters, and other instrumentation used to provide data for the GHGs reported under this part.

(h) Annual GHG report revisions.

(1) The owner or operator shall submit a revised annual GHG report within 45 days of discovering that an annual GHG report that the owner or operator previously submitted contains one or more substantive errors. The revised report must correct all substantive errors.

(i) Calibration accuracy requirements. The owner or operator of a facility or supplier that is subject to the requirements of this part must meet the applicable flow meter calibration and accuracy requirements of this paragraph (i). The accuracy specifications in this paragraph (i) do not apply where either the use of company records (as defined in §98.6) or the use of “best available information” is specified in an applicable subpart of this part to quantify fuel usage and/or other parameters. Further, the provisions of this paragraph
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(i) do not apply to stationary fuel combustion units that use the methodologies in part 75 of this chapter to calculate CO\textsubscript{2} mass emissions.

(1) Except as otherwise provided in paragraphs (i)(4) through (i)(6) of this section, flow meters that measure liquid and gaseous fuel feed rates, process stream flow rates, or feedstock flow rates and provide data for the GHG emissions calculations shall be calibrated prior to April 1, 2010 using the procedures specified in this paragraph (i) when such calibration is specified in a relevant subpart of this part. Each of these flow meters shall meet the applicable accuracy specification in paragraph (i)(2) or (i)(3) of this section. All other measurement devices (e.g., weighing devices) that are required by a relevant subpart of this part, and that are used to provide data for the GHG emissions calculations, shall also be calibrated prior to April 1, 2010; however, the accuracy specifications in paragraphs (i)(2) and (i)(3) of this section do not apply to these devices. Rather, each of these measurement devices shall be calibrated to meet the accuracy requirement specified for the device in the applicable subpart of this part, or, in the absence of such accuracy requirement, the device must be calibrated to an accuracy within the appropriate error range for the specific measurement technology, based on an applicable operating standard, including but not limited to manufacturer’s specifications and industry standards. The procedures and methods used to quality-ensure the data from each measurement device shall be documented in the written monitoring plan, pursuant to paragraph (g)(5)(i)(C) of this section.

(i) All flow meters and other measurement devices that are subject to the provisions of this paragraph (i) must be calibrated according to one of the following: You may use the manufacturer’s recommended procedures; an appropriate industry consensus standard method; or a method specified in a relevant subpart of this part. The calibration method(s) used shall be documented in the monitoring plan required under paragraph (g) of this section.

(ii) For facilities and suppliers that become subject to this part after April 1, 2010, all flow meters and other measurement devices (if any) that are required by the relevant subpart(s) of this part to provide data for the GHG emissions calculations shall be installed no later than the date on which data collection is required to begin using the measurement device, and the initial calibration(s) required by this paragraph (i) (if any) shall be performed no later than that date.

(iii) Except as otherwise provided in paragraphs (i)(4) through (i)(6) of this section, subsequent recalibrations of the flow meters and other measurement devices subject to the requirements of this paragraph (i) shall be performed at one of the following frequencies:

(A) You may use the frequency specified in each applicable subpart of this part.

(B) You may use the frequency recommended by the manufacturer or by an industry consensus standard practice, if no recalibration frequency is specified in an applicable subpart.

(2) Perform all flow meter calibration at measurement points that are representative of the normal operating range of the meter. Except for the orifice, nozzle, and venturi flow meters described in paragraph (i)(3) of this section, calculate the calibration error at each measurement point using Equation A–2 of this section. The terms “R” and “A” in Equation A–2 must be expressed in consistent units of measure (e.g., gallons/minute, ft\textsuperscript{3}/min). The calibration error at each measurement point shall not exceed 5.0 percent of the reference value.

\[
CE = \frac{|R - A|}{R} \times 100
\]

(Eq. A–2)
(3) For orifice, nozzle, and venturi flow meters, the initial quality assurance consists of in-situ calibration of the differential pressure (delta-P), total pressure, and temperature transmitters.

(i) Calibrate each transmitter at a zero point and at least one upscale point. Fixed reference points, such as the freezing point of water, may be used for temperature transmitter calibrations. Calculate the calibration error of each transmitter at each measurement point, using Equation A-3 of this subpart. The terms “R,” “A,” and “FS” in Equation A-3 of this subpart must be in consistent units of measure (e.g., milliamperes, inches of water, psi, degrees). For each transmitter, the CE value at each measurement point shall not exceed 2.0 percent of full-scale. Alternatively, the results are acceptable if the sum of the calculated CE values for the three transmitters at each calibration level (i.e., at the zero level and at each upscale level) does not exceed 6.0 percent.

\[
CE = \frac{|R - A|}{FS} \times 100
\]

Where:

- \(CE\) = Calibration error (%).
- \(R\) = Reference value.
- \(A\) = Transmitter response to the reference value.
- \(FS\) = Full-scale value of the transmitter.

(ii) In cases where there are only two transmitters (i.e., differential pressure and either temperature or total pressure) in the immediate vicinity of the flow meter’s primary element (e.g., the orifice plate), or when there is only a differential pressure transmitter in close proximity to the primary element, calibration of these existing transmitters to a CE of 2.0 percent or less at each measurement point is still required, in accordance with paragraph (i)(3)(i) of this section; alternatively, when two transmitters are calibrated, the results are acceptable if the sum of the CE values for the two transmitters at each calibration level does not exceed 4.0 percent. However, note that installation and calibration of an additional transmitter (or transmitters) at the flow monitor location to measure temperature or total pressure or both is not required in these cases. Instead, you may use assumed values for temperature and/or total pressure, based on measurements of these parameters at a remote location (or locations), provided that the following conditions are met:

(A) You must demonstrate that measurements at the remote location(s) can, when appropriate correction factors are applied, reliably and accurately represent the actual temperature or total pressure at the flow meter under all expected ambient conditions.

(B) You must make all temperature and/or total pressure measurements in the demonstration described in paragraph (i)(3)(ii)(A) of this section with calibrated gauges, sensors, transmitters, or other appropriate measurement devices. At a minimum, calibrate each of these devices to an accuracy within the appropriate error range for the specific measurement technology, according to one of the following. You may calibrate using a manufacturer’s specification or an industry consensus standard.

(C) You must document the methods used for the demonstration described in paragraph (i)(3)(ii)(A) of this section in the written GHG Monitoring Plan under paragraph (g)(5)(i)(C) of this section. You must also include the data from the demonstration, the mathematical correlation(s) between the remote readings and actual flow meter conditions derived from the data, and any supporting engineering calculations in the GHG Monitoring Plan. You must maintain all of this information...
(D) You must use the mathematical correlation(s) derived from the demonstration described in paragraph (i)(3)(ii)(A) of this section to convert the remote temperature or the total pressure readings, or both, to the actual temperature or total pressure at the flow meter, or both, on a daily basis. You shall then use the actual temperature and total pressure values to correct the measured flow rates to standard conditions.

(E) You shall periodically check the correlation(s) between the remote and actual readings (at least once a year), and make any necessary adjustments to the mathematical relationship(s).

(4) Fuel billing meters are exempted from the calibration requirements of this section and from the GHG Monitoring Plan and recordkeeping provisions of paragraphs (g)(5)(i)(C), (g)(6), and (g)(7) of this section, provided that the fuel supplier and any unit combusting the fuel do not have any common owners and are not owned by subsidiaries or affiliates of the same company. Meters used exclusively to measure the flow rates of fuels that are used for unit startup are also exempted from the calibration requirements of this section.

(5) For a flow meter that has been previously calibrated in accordance with paragraph (i)(1) of this section, an additional calibration is not required by the date specified in paragraph (i)(1) of this section if, as of that date, the previous calibration is still active (i.e., the device is not yet due for recalibration because the time interval between successive calibrations has not elapsed). In this case, the deadline for the successive calibrations of the flow meter shall be set according to one of the following. You may use either the manufacturer’s recommended calibration schedule or you may use the industry consensus calibration schedule.

(6) For units and processes that operate continuously with infrequent outages, it may not be possible to meet the April 1, 2010 deadline for the initial calibration of a flow meter or other measurement device without disrupting normal process operation. In such cases, the owner or operator may postpone the initial calibration until the next scheduled maintenance outage. The best available information from company records may be used in the interim. The subsequent required recalibrations of the flow meters may be similarly postponed. Such postponements shall be documented in the monitoring plan that is required under paragraph (g)(5) of this section.

(7) If the results of an initial calibration or a recalibration fail to meet the required accuracy specification, data from the flow meter shall be considered invalid, beginning with the hour of the failed calibration and continuing until a successful calibration is completed. You shall follow the missing data provisions provided in the relevant missing data sections during the period of data invalidation.

(j) Measurement device installation—(1) General. If an owner or operator required to report under subpart P, subpart X or subpart Y of this part has process equipment or units that operate continuously and it is not possible to install a required flow meter or other measurement device by April 1, 2010, (or by any later date in 2010 approved by the Administrator as part of an extension of best available monitoring methods per paragraph (d) of this section) without process equipment or unit shutdown, or through a hot tap, the owner or operator may request an extension from the Administrator to delay installing the measurement device until the next scheduled process equipment or unit shutdown. If approval for such an extension is granted by the Administrator, the owner or operator must use best available monitoring methods during the extension period.

(2) Requests for extension of the use of best available monitoring methods for measurement device installation. The owner or operator must first provide the Administrator an initial notification of the intent to submit an extension request for use of best available monitoring methods beyond December 31, 2010 (or an earlier date approved by EPA) in cases where measurement device installation would require a process equipment or unit shutdown, or could only be done through a hot tap. The owner or operator must follow-up
(j) **Content of the request.** Requests must contain the following information:

(i) Specific measurement device for which the request is being made and the location where each measurement device will be installed.

(ii) Identification of the specific rule requirements (by rule subpart, section, and paragraph numbers) requiring the measurement device.

(iii) A description of the reasons why the needed equipment could not be installed before April 1, 2010, or by the expiration date for the use of best available monitoring methods, in cases where an extension has been granted under §98.3(d).

(iv) Supporting documentation showing that it is not practicable to isolate the process equipment or unit and install the measurement device without a full shutdown or a hot tap, and that there was no opportunity during 2010 to install the device. Include the date of the three most recent shutdowns for each relevant process equipment or unit, the frequency of shutdowns for each relevant process equipment or unit, and the date of the next planned process equipment or unit shutdown.

(v) Include a description of the proposed best available monitoring method for estimating GHG emissions during the time prior to installation of the meter.

(5) **Approval criteria.** The owner or operator must demonstrate to the Administrator's satisfaction that it is not reasonably feasible to install the measurement device before April 1, 2010 or by the expiration date for the use of best available monitoring methods, in cases where an extension has been granted under paragraph (d) of this section without a process equipment or unit shutdown, or through a hot tap, and that the proposed method for estimating GHG emissions during the time before which the measurement device will be installed is appropriate. The Administrator will not initially approve the use of the proposed best available monitoring method past December 31, 2013.

(6) **Measurement device installation deadline.** Any owner or operator that submits both a timely initial notice of intent and a timely completed extension request under paragraph (j)(3) of this section to extend use of best available monitoring methods for measurement device installation must install all such devices by July 1, 2011 unless the extension request under this paragraph (j) is approved by the Administrator before July 1, 2011.

(7) **One time extension past December 31, 2013.** If an owner or operator determines that a scheduled process equipment or unit shutdown will not occur by December 31, 2013, the owner or operator may re-apply to use best available monitoring methods for one additional time period, not to extend beyond December 31, 2015. To extend use of best available monitoring methods past December 31, 2013, the owner or operator must submit a new extension request by June 1, 2013 that contains the information required in paragraph (j)(4) of this section. The owner or operator must demonstrate to the Administrator's satisfaction that it continues to not be reasonably feasible to install the measurement device before December 31, 2013 without a process equipment or unit shutdown, or that installation of the measurement device could only be done through a hot tap, and that the proposed method for estimating GHG emissions during the time before which the measurement device will be installed is appropriate. An
owner or operator that submits a request under this paragraph to extend use of best available monitoring methods for measurement device installation must install all such devices by December 31, 2013, unless the extension request under this paragraph is approved by the Administrator.


§ 98.4 Authorization and responsibilities of the designated representative.

(a) General. Except as provided under paragraph (f) of this section, each facility, and each supplier, that is subject to this part, shall have one and only one designated representative, who shall be responsible for certifying, signing, and submitting GHG emissions reports and any other submissions for such facility and supplier respectively to the Administrator under this part. If the facility is required under any other part of title 40 of the Code of Federal Regulations to submit to the Administrator any other emission report that is subject to any requirement in 40 CFR part 75, the same individual shall be the designated representative responsible for certifying, signing, and submitting the GHG emissions reports and all such other emissions reports under this part.

(b) Authorization of a designated representative. The designated representative of the facility or supplier shall be an individual selected by an agreement binding on the owners and operators of such facility or supplier and shall act in accordance with the certification statement in paragraph (i)(4)(iv) of this section.

(c) Responsibility of the designated representative. Upon receipt by the Administrator of a complete certificate of representation under this section for a facility or supplier, the designated representative identified in such certificate of representation shall represent and, by his or her representations, actions, inactions, or submissions, legally bind each owner and operator of such facility or supplier in all matters pertaining to this part, notwithstanding any agreement between the designated representative and such owners and operators. The owners and operators shall be bound by any decision or order issued to the designated representative by the Administrator or a court.

(d) Timing. No GHG emissions report or other submission under this part for a facility or supplier will be accepted until the Administrator has received a complete certificate of representation under this section for a designated representative of the facility or supplier. Such certificate of representation shall be submitted at least 60 days before the deadline for submission of the facility’s or supplier’s initial emission report under this part.

(e) Certification of the GHG emissions report. Each GHG emission report and any other submission under this part for a facility or supplier shall be certified, signed, and submitted by the designated representative or any alternate designated representative of the facility or supplier in accordance with this section and §3.10 of this chapter.

(1) Each such submission shall include the following certification statement signed by the designated representative or any alternate designated representative: “I am authorized to make this submission on behalf of the owners and operators of the facility or supplier, as applicable, for which the submission is made. I certify under penalty of law that I have personally examined, and am familiar with, the statements and information submitted in this document and all its attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information, I certify that the statements and information are to the best of my knowledge and belief true, accurate, and complete. I am aware that there are significant penalties for submitting false statements and information or omitting required statements and information, including the possibility of fine or imprisonment.”

(2) The Administrator will accept a GHG emission report or other submission for a facility or supplier under this part only if the submission is certified, signed, and submitted in accordance with this section.
(f) **Alternate designated representative.** A certificate of representation under this section for a facility or supplier may designate one alternate designated representative, who shall be an individual selected by an agreement binding on the owners and operators, and who may act on behalf of the designated representative, of such facility or supplier. The agreement by which the alternate designated representative is selected shall include a procedure for authorizing the alternate designated representative to act in lieu of the designated representative.

   (1) Upon receipt by the Administrator of a complete certificate of representation under this section for a facility or supplier identifying an alternate designated representative.

      (i) The alternate designated representative may act on behalf of the designated representative for such facility or supplier.

      (ii) Any representation, action, inaction, or submission by the alternate designated representative shall be deemed to be a representation, action, inaction, or submission by the designated representative.

   (g) **Changing a designated representative or alternate designated representative.** The designated representative or alternate designated representative identified in a complete certificate of representation under this section for a facility or supplier received by the Administrator may be changed at any time upon receipt by the Administrator of another later signed, complete certificate of representation under this section except that such list shall be amended to reflect the change. If the designated representative or alternate designated representative determines at any time that an owner or operator of the facility or supplier is not included in such list and such exclusion is not the result of a change in the owners and operators, the designated representative or any alternate designated representative shall submit a certificate of representation that is complete under this section except that such list shall be amended to include such owner or operator.

   (h) **Changes in owners and operators.** In the event an owner or operator of the facility or supplier is not included in the list of owners and operators in the certificate of representation under this section for the facility or supplier, such owner or operator shall be deemed to be subject to and bound by the certificate of representation, the representations, actions, inactions, and submissions of the designated representative and any alternate designated representative of the facility or supplier, as if the owner or operator were included in such list. Within 90 days after any change in the owners and operators of the facility or supplier (including the addition of a new owner or operator), the designated representative or any alternate designated representative shall submit a certificate of representation that is complete under this section except that such list shall be amended to reflect the change. If the designated representative or alternate designated representative determines at any time that an owner or operator of the facility or supplier is not included in such list and such exclusion is not the result of a change in the owners and operators, the designated representative or any alternate designated representative shall submit, within 90 days of making such determination, a certificate of representation that is complete under this section except that such list shall be amended to include such owner or operator. A certificate of representation shall be complete if it includes the following elements in a format prescribed by the Administrator in accordance with this section:

      (1) Identification of the facility or supplier for which the certificate of representation is submitted.

      (2) The name, organization name (company affiliation-employer), address, e-mail address (if any), telephone number, and facsimile transmission number (if any) of the designated representative and any alternate designated representative.

      (3) A list of the owners and operators of the facility or supplier identified in
paragraph (i)(1) of this section, pro-
vided that, if the list includes the oper-
ators of the facility or supplier and the
owners with control of the facility or
supplier, the failure to include any
other owners shall not make the cer-
tificate of representation incomplete.

(4) The following certification state-
mements by the designated representative
and any alternate designated rep-
resentative:

(i) “I certify that I was selected as
the designated representative or alter-
nate designated representative, as ap-
plicable, by an agreement binding on
the owners and operators of the facility
or supplier, as applicable.”

(ii) “I certify that I have all the nec-
essary authority to carry out my du-
ties and responsibilities under 40 CFR
part 98 on behalf of the owners and op-
erators of the facility or supplier, as
applicable, and that each such owner
and operator shall be fully bound by
my representations, actions, inactions,
or submissions.”

(iii) “I certify that the owners and
operators of the facility or supplier, as
applicable, shall be bound by any order
issued to me by the Administrator or a
court regarding the facility or sup-
plier.”

(iv) “If there are multiple owners and
operators of the facility or supplier, as
applicable, I certify that I have given a
written notice of my selection as the
‘designated representative’ or ‘alter-
nate designated representative’, as ap-
plicable, and of the agreement by
which I was selected to each owner and
operator of the facility or supplier.”

(5) The signature of the designated
representative and any alternate des-
ignated representative and the dates
signed.

(l) Documents of agreement. Unless
otherwise required by the Admin-
istrator, documents of agreement re-
ferred to in the certificate of represen-
tation shall not be submitted to the
Administrator. The Administrator
shall not be under any obligation to re-
view or evaluate the sufficiency of such
documents, if submitted.

(m) Delegation by designated represen-
tative and alternate designated rep-
resentative.

(1) A designated representative or an
alternate designated representative
may delegate his or her own authority,
to one or more individuals, to submit
an electronic submission to the Admin-
istrator provided for or required under
this part, except for a submission
under this paragraph.

(2) In order to delegate his or her own
authority, to one or more individuals,
to submit an electronic submission to
the Administrator in accordance with
paragraph (m)(1) of this section, the
designated representative or alternate
designated representative must submit
electronically to the Administrator a
notice of delegation, in a format pre-
scribed by the Administrator, that in-
cludes the following elements:

(i) The name, organization name
(company affiliation-employer) ad-
dress, e-mail address (if any), telephone
number, and facsimile transmission
number (if any) of such designated rep-
resentative or alternate designated
representative.

(l) Objections Concerning a Designated
Representative

(1) Except as provided in paragraph
(g) of this section, no objection or
other communication submitted to the
Administrator concerning the author-
ization, or any representation, action,
inaction, or submission, of the des-
ignated representative or alternate
designated representative shall affect
any representation, action, inaction, or
submission of the designated represent-
avtive or alternate designated rep-
resentative, or the finality of any deci-
sion or order by the Administrator
under this part.

(2) The Administrator will not adju-
dicate any private legal dispute con-
cerning the authorization or any rep-
resentation, action, inaction, or sub-
mission of any designated representa-
tive or alternate designated representa-
tive.
§ 98.5 How is the report submitted?

Each GHG report and certificate of representation for a facility or supplier must be submitted electronically in accordance with the requirements of §98.4 and in a format specified by the Administrator.

§ 98.6 Definitions.

All terms used in this part shall have the same meaning given in the Clean Air Act and in this section.

Absorbent circulation pump means a pump commonly powered by natural gas pressure that circulates the absorbent liquid between the absorbent regenerator and natural gas contactor.

Accuracy of a measurement at a specified level (e.g., one percent of full scale or one percent of the value measured) means that the mean of repeat measurements made by a device or technique is within 95 percent of the range bounded by the true value plus or minus the specified level.

Acid Rain Program means the program established under title IV of the Clean Air Act, and implemented under parts 72 through 78 of this chapter for the reduction of sulfur dioxide and nitrogen oxides emissions.

Administrator means the Administrator of the United States Environmental Protection Agency or the Administrator’s authorized representative.

AGA means the American Gas Association.

Agricultural by-products means those parts of arable crops that are not used for the primary purpose of producing food. Agricultural by-products include, but are not limited to, oat, corn and...
wheat straws, bagasse, peanut shells, rice and coconut husks, soybean hulls, palm kernel cake, cottonseed and sunflower seed cake, and pomace.

_Air injected flare_ means a flare in which air is blown into the base of a flare stack to induce complete combustion of gas.

_Alkali bypass_ means a duct between the feed end of the kiln and the preheater tower through which a portion of the kiln exit gas stream is withdrawn and quickly cooled by air or water to avoid excessive buildup of alkali, chloride and/or sulfur on the raw feed. This may also be referred to as the “klin exhaust gas bypass.”

_Anaerobic digester_ means the system where wastes are collected and anaerobically digested in large containment vessels or covered lagoons. Anaerobic digesters stabilize waste by the microbial reduction of complex organic compounds to CO\textsubscript{2} and CH\textsubscript{4}, which is captured and may be flared or used as fuel. Anaerobic digestion systems, include but are not limited to covered lagoon, complete mix, plug flow, and fixed film digesters.

_Anaerobic lagoon_, with respect to subpart JJ of this part, means a type of liquid storage system component that is designed and operated to stabilize wastes using anaerobic microbial processes. Anaerobic lagoons may be designed for combined stabilization and storage with varying lengths of retention time (up to a year or greater), depending on the climate region, volatile solids loading rate, and other operational factors.

_Anode effect_ is a process upset condition of an aluminum electrolysis cell caused by too little alumina dissolved in the electrolyte. The anode effect begins when the voltage rises rapidly and exceeds a threshold voltage, typically 8 volts.

_Anode Effect Minutes per Cell Day (24 hours)_ are the total minutes during which an electrolysis cell voltage is above the threshold voltage, typically 8 volts.

_ANSI_ means the American National Standards Institute.

_API_ means the American Petroleum Institute.

_ASABE_ means the American Society of Agricultural and Biological Engineers.

_ASME_ means the American Society of Mechanical Engineers.

_ASTM_ means the American Society of Testing and Materials.

_Aspalh_ means a dark brown-to-black cement-like material obtained by petroleum processing and containing bitumens as the predominant component. It includes crude asphalt as well as the following finished products: cements, fluxes, the asphalt content of emulsions (exclusive of water), and petroleum distillates blended with asphalt to make cutback asphalts.

_Aviation Gasoline_ means a complex mixture of volatile hydrocarbons, with or without additives, suitably blended to be used in aviation reciprocating engines. Specifications can be found in ASTM Specification D910–07a, Standard Specification for Aviation Gasolines (incorporated by reference, see §98.7).

_B\textsubscript{0}c_ means the maximum CH\textsubscript{4} producing capacity of a waste stream, kg CH\textsubscript{4}/kg COD.

_Basic oxygen furnace_ means any refractory-lined vessel in which high-purity oxygen is blown under pressure through a bath of molten iron, scrap metal, and fluxes to produce steel.

_bbil_ means barrel.

_Biodiesel_ means a mono-alkyl ester derived from biomass and conforming to ASTM D6751–08, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels.

_Biogenic CO\textsubscript{2}_ means carbon dioxide emissions generated as the result of biomass combustion from combustion units for which emission calculations are required by an applicable part 98 subpart.

_Biomass_ means non-fossilized and biodegradable organic material originating from plants, animals or microorganisms, including products, by-products, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material.

_Blast furnace_ means a furnace that is located at an integrated iron and steel
plant and is used for the production of molten iron from iron ore pellets and other iron bearing materials.

**Blendstocks** are petroleum products used for blending or compounding into finished motor gasoline. These include RBOB (reformulated blendstock for oxygenate blending) and CBOB (conventional blendstock for oxygenate blending), but exclude oxygenates, butane, and pentanes plus.

**Blendstocks—Others** are products used for blending or compounding into finished motor gasoline that are not defined elsewhere. Excludes Gasoline Treated as Blendstock (GTAB), Diesel Treated as Blendstock (DTAB), conventional blendstock for oxygenate blending (CBOB), reformulated blendstock for oxygenate blending (RBOB), oxygenates (e.g. fuel ethanol and methyl tertiary butyl ether), butane, and pentanes plus.

**Blowdown** mean the act of emptying or depressuring a vessel. This may also refer to the discarded material such as blowdown water from a boiler or cooling tower.

**Blowdown vent stack emissions** mean natural gas and/or CO\(_2\) released due to maintenance and/or blowdown operations including compressor blowdown and emergency shut-down (ESD) system testing.

**British Thermal Unit or Btu** means the quantity of heat required to raise the temperature of one pound of water by one degree Fahrenheit at about 39.2 degrees Fahrenheit.

**Bulk**, with respect to industrial GHG suppliers and CO\(_2\) suppliers, means the transfer of a product inside containers, including but not limited to tanks, cylinders, drums, and pressure vessels.

**Bulk natural gas liquid or NGL** refers to mixtures of hydrocarbons that have been separated from natural gas as liquids through the process of absorption, condensation, adsorption, or other methods. Generally, such liquids consist of ethane, propane, butanes, and pentanes plus. Bulk NGL is sold to fractionators or to refiners and petrochemical plants where the fractionation takes place.

**Butane**, or n-Butane, is a paraffinic straight-chain hydrocarbon with molecular formula C\(_4\)H\(_{10}\).

**Butylene**, or n-Butylene, is an olefinic straight-chain hydrocarbon with molecular formula C\(_4\)H\(_8\).

**By-product coke oven battery** means a group of ovens connected by common walls, where coal undergoes destructive distillation under positive pressure to produce coke and coke oven gas from which by-products are recovered.

**Calcination** means the process of thermally treating minerals to decompose carbonates from ore.

**Calculation methodology** means a methodology prescribed under the section “Calculating GHG Emissions” in any subpart of part 98.

**Calibrated bag** means a flexible, non-elastic, anti-static bag of a calibrated volume that can be affixed to an emitting source such that the emissions inflate the bag to its calibrated volume.

**Carbon dioxide equivalent or CO\(_2\)e** means the number of metric tons of CO\(_2\) emissions with the same global warming potential as one metric ton of another greenhouse gas, and is calculated using Equation A-1 of this subpart.

**Carbon dioxide production well** means any hole drilled in the earth for the primary purpose of extracting carbon dioxide from a geologic formation or group of formations which contain deposits of carbon dioxide.

**Carbon dioxide production well facility** means one or more carbon dioxide production wells that are located on one or more contiguous or adjacent properties, which are under the control of the same entity. Carbon dioxide production wells located on different oil and gas leases, mineral fee tracts, lease tracts, subsurface or surface unit areas, surface fee tracts, surface lease tracts, or separate surface sites, whether or not connected by a road, waterway, power line, or pipeline, shall be considered part of the same CO\(_2\) production well facility if they otherwise meet the definition.

**Carbon dioxide stream** means carbon dioxide that has been captured from an emission source (e.g. a power plant or other industrial facility) or extracted from a carbon dioxide production well plus incidental associated substances either derived from the source materials and the capture process or extracted with the carbon dioxide.
Carbonate-based mineral mass fraction means the following: For limestone, the mass fraction of calcium carbonate (CaCO$_3$) in the limestone; for dolomite, the mass fraction of calcium magnesium carbonate (CaMg(CO$_3$)$_2$) or dolomite. Carbonate-based raw material means any of the following minerals used in the manufacture of glass: Calcium carbonate (CaCO$_3$), calcium magnesium carbonate (CaMg(CO$_3$)$_2$), sodium carbonate (Na$_2$CO$_3$), barium carbonate (BaCO$_3$), potassium carbonate (K$_2$CO$_3$), lithium carbonate (Li$_2$CO$_3$), and strontium carbonate (SrCO$_3$). Carbonate-based raw material means any of the following materials used in the manufacture of glass: Limestone, dolomite, soda ash, barium carbonate, potassium carbonate, lithium carbonate, and strontium carbonate. Catalytic cracking unit means a refinery process unit in which petroleum derivatives are continuously charged and hydrocarbon molecules in the presence of a catalyst are fractured into smaller molecules, or react with a contact material suspended in a fluidized bed to improve feedstock quality for additional processing and the catalyst or contact material is continuously regenerated by burning off coke and other deposits. Catalytic cracking units include both fluidized bed systems, which are referred to as fluid catalytic cracking units (FCCU), and moving bed systems, which are also referred to as thermal catalytic cracking units. The unit includes the riser, reactor, regenerator, air blowers, spent catalyst or contact material stripper, catalyst or contact material recovery equipment, and regenerator equipment for controlling air pollutant emissions and for heat recovery.

Carbon share means the percent of total mass that carbon represents in any product. Carbonate means compounds containing the radical CO$_3$$^{2-}$. Upon calcination, the carbonate radical decomposes to evolve carbon dioxide (CO$_2$). Common carbonates consumed in the mineral industry include calcium carbonate (CaCO$_3$) or calcite; magnesium carbonate (MgCO$_3$) or magnesite; and calcium-magnesium carbonate (CaMg(CO$_3$)$_2$) or dolomite.

Catalytic cracking unit

Centrifugal compressor dry seal emissions mean natural gas or CO$_2$ released from a dry seal vent pipe and/or the seal face around the rotating shaft where it exits one or both ends of the compressor case. Centrifugal compressor wet seal degassing vent emissions means emissions that occur when the high-pressure oil barriers for centrifugal compressors are depressurized to release absorbed natural gas or CO$_2$. High-pressure oil is used as a barrier against escaping gas in centrifugal compressor shafts. Very little gas escapes through...
the oil barrier, but under high pressure, considerably more gas is absorbed by the oil. The seal oil is purged of the absorbed gas (using heaters, flash tanks, and degassing techniques) and recirculated. The separated gas is commonly vented to the atmosphere.

Certified standards means calibration gases certified by the manufacturer of the calibration gases to be accurate to within 2 percent of the value on the label or calibration gases.

CH\textsubscript{4} means methane.

Chemical recovery combustion unit means a combustion device, such as a recovery furnace or fluidized-bed reactor where spent pulping liquor from sulfite or semi-chemical pulping processes is burned to recover pulping chemicals.

Chemical recovery furnace means an enclosed combustion device where concentrated spent liquor produced by the kraft or soda pulping process is burned to recover pulping chemicals and produce steam. Includes any recovery furnace that burns spent pulping liquor produced from both the kraft and soda pulping processes.

Chloride process means a production process where titanium dioxide is produced using calcined petroleum coke and chlorine as raw materials.

City gate means a location at which natural gas ownership or control passes from one party to another, neither of which is the ultimate consumer. In this rule, in keeping with common practice, the term refers to a point or measuring station at which a local gas distribution utility receives gas from a natural gas pipeline company or transmission system. Meters at the city gate station measure the flow of natural gas into the local distribution company system and typically are used to measure local distribution company system sendout to customers.

CO\textsubscript{2} means carbon dioxide.

Coal means all solid fuels classified as anthracite, bituminous, sub-bituminous, or lignite by the American Society for Testing and Materials Designation ASTM D388-05 Standard Classification of Coals by Rank (incorporated by reference, see §98.7).

COD means the chemical oxygen demand as determined using methods specified pursuant to 40 CFR part 136.

Cogeneration unit means a unit that produces electrical energy and useful thermal energy for industrial, commercial, or heating or cooling purposes, through the sequential or simultaneous use of the original fuel energy.

Coke burn-off means the coke removal from the surface of a catalyst by combustion during catalyst regeneration. Coke burn-off also means the coke combusted in fluid coking unit burner.

Cokemaking means the production of coke from coal in either a by-product coke oven battery or a non-recovery coke oven battery.

Commercial applications means executing a commercial transaction subject to a contract. A commercial application includes transferring custody of a product from one facility to another if it otherwise meets the definition.

Company records means, in reference to the amount of fuel consumed by a stationary combustion unit (or by a group of such units), a complete record of the methods used, the measurements made, and the calculations performed to quantify fuel usage. Company records may include, but are not limited to, direct measurements of fuel consumption by gravimetric or volumetric means, tank drop measurements, and calculated values of fuel usage obtained by measuring auxiliary parameters such as steam generation or unit operating hours. Fuel billing records obtained from the fuel supplier qualify as company records.

Connector means to flanged, screwed, or other joined fittings used to connect pipe line segments, tubing, pipe components (such as elbows, reducers, “T’s” or valves) or a pipe line and a piece of equipment or an instrument to a pipe, tube or piece of equipment. A common connector is a flange. Joined fittings welded completely around the circumference of the interface are not considered connectors for the purpose of this part.

Container glass means glass made of soda-lime recipe, clear or colored, which is pressed and/or blown into bottles, jars, ampoules, and other products listed in North American Industry Classification System 327213 (NAICS 327213).
Continuous bleed means a continuous flow of pneumatic supply gas to the process measurement device (e.g., level control, temperature control, pressure control) where the supply gas pressure is modulated by the process condition, and then flows to the valve controller where the signal is compared with the process set-point to adjust gas pressure in the valve actuator.

Continuous emission monitoring system or CEMS means the total equipment required to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes, a permanent record of gas concentrations, pollutant emission rates, or gas volumetric flow rates from stationary sources.

Continuous glass melting furnace means a glass melting furnace that operates continuously except during periods of maintenance, malfunction, control device installation, reconstruction, or rebuilding.

Conventional-Summer refers to finished gasoline formulated for use in motor vehicles, the composition and properties of which do not meet the requirements of the reformulated gasoline regulations promulgated by the U.S. Environmental Protection Agency under 40 CFR 80.40, but which meet summer RVP standards required under 40 CFR 80.27 or as specified by the state. NOTE: This category excludes conventional gasoline for oxygenate blending (CBOB) as well as other blendstock.

Conventional-Winter refers to finished gasoline formulated for use in motor vehicles, the composition and properties of which do not meet the requirements of the reformulated gasoline regulations promulgated by the U.S. Environmental Protection Agency under 40 CFR 80.40 or the summer RVP standards required under 40 CFR 80.27 or as specified by the state. NOTE: This category excludes conventional gasoline for oxygenate blending (CBOB) as well as other blendstock.

Crude oil means a mixture of hydrocarbons that exists in liquid phase in natural underground reservoirs and remains liquid at atmospheric pressure after passing through surface separating facilities. (1) Depending upon the characteristics of the crude stream, it may also include any of the following:

(i) Small amounts of hydrocarbons that exist in gaseous phase in natural underground reservoirs but are liquid at atmospheric conditions (temperature and pressure) after being recovered from oil well (casing-head) gas in lease separators and are subsequently commingled with the crude stream without being separately measured. Lease condensate recovered as a liquid from natural gas wells in lease or field separation facilities and later mixed into the crude stream is also included.

(ii) Small amounts of non-hydrocarbons, such as sulfur and various metals.

(iii) Drip gases, and liquid hydrocarbons produced from tar sands, oil sands, glisnite, and oil shale.

(iv) Petroleum products that are received or produced at a refinery and subsequently injected into a crude supply or reservoir by the same refinery owner or operator.

(2) Liquids produced at natural gas processing plants are excluded. Crude oil is refined to produce a wide array of petroleum products, including heating oils; gasoline, diesel and jet fuels; lubricants; asphalt; ethane, propane, and butane; and many other products used for their energy or chemical content.

Daily spread means a manure management system component in which manure is routinely removed from a confinement facility and is applied to cropland or pasture within 24 hours of excretion.

Day means any consistently designated 24 hour period during which an emission unit is operated.

Decarburization vessel means any vessel used to further refine molten steel with the primary intent of reducing the carbon content of the steel, including but not limited to vessels used for argon-oxygen decarburization and vacuum oxygen decarburization.

Deep bedding systems for cattle swine means a manure management system in which, as manure accumulates, bedding is continually added to absorb moisture over a production cycle and possibly for as long as 6 to 12 months. This manure management system also is known as a bedded pack manure system.
management system and may be combined with a dry lot or pasture.

Degasification system means the entirety of the equipment that is used to drain gas from underground and collect it at a common point, such as a vacuum pumping station. This includes all degasification wells and gob gas vent holes at the underground coal mine. Degasification systems include surface pre-mining, horizontal pre-mining, and post-mining systems.

Degradable organic carbon (DOC) means the fraction of the total mass of a waste material that can be biologically degraded.

Dehydrator means a device in which a liquid absorbent (including desiccant, ethylene glycol, diethylene glycol, or triethylene glycol) directly contacts a natural gas stream to absorb water vapor.

Dehydrator vent emissions means natural gas and CO₂ released from a natural gas dehydrator system absorbent (typically glycol) rebolier or regenerator to the atmosphere or a flare, including stripping natural gas and motive natural gas used in absorbent circulation pumps.

Delayed coking unit means one or more refinery process units in which high molecular weight petroleum derivatives are thermally cracked and petroleum coke is produced in a series of closed, batch system reactors. A delayed coking unit consists of the coke drums and ancillary equipment associated with a single fractionator.

De-methanizer means the natural gas processing unit that separates methane rich residue gas from the heavier hydrocarbons (e.g., ethane, propane, butane, pentane-plus) in feed natural gas stream.

Density means the mass contained in a given unit volume (mass/volume).

Desiccant means a material used in solid-bed dehydrators to remove water from raw natural gas by adsorption or absorption. Desiccants include activated alumina, pelletized calcium chloride, lithium chloride and granular silica gel material. Wet natural gas is passed through a bed of the granular or pelletized solid adsorbent or absorbent in these dehydrators. As the wet gas contacts the surface of the particles of desiccant material, water is adsorbed on the surface or absorbed and dissolves the surface of these desiccant particles. Passing through the entire desiccant bed, almost all of the water is adsorbed onto or absorbed into the desiccant material, leaving the dry gas to exit the contactor.

Destruction means:

(1) With respect to landfills and manure management, the combustion of methane in any on-site or off-site combustion technology. Destroyed methane includes, but is not limited to, methane combusted by flaring, methane destroyed by thermal oxidation, methane combusted for use in on-site energy or heat production technologies, methane that is conveyed through pipelines (including natural gas pipelines) for off-site combustion, and methane that is collected for any other on-site or off-site use as a fuel.

(2) With respect to fluorinated GHGs, the expiration of a fluorinated GHG to the destruction efficiency actually achieved. Such destruction does not result in a commercially useful end product.

Destruction device, for the purposes of subparts II and TT of this part, means a flare, thermal oxidizer, boiler, turbine, internal combustion engine, or any other combustion unit used to destroy or oxidize methane contained in landfill gas or wastewater biogas.

Destruction efficiency means the efficiency with which a destruction device reduces the mass of a greenhouse gas fed into the device. Destruction efficiency, or flaring destruction efficiency, refers to the fraction of the gas that leaves the flare partially or fully oxidized. The destruction efficiency is expressed in Equation A–2 of this section:

\[ DE = 1 - \frac{tGHG_{OUT}}{tGHG_{IN}} \]  
(Eq. A–2)
Environmental Protection Agency § 98.6

Where:

\[ \text{DE} = \text{Destruction Efficiency} \]
\[ \text{tGHG}_{\text{IN}} = \text{The mass of GHG} \text{i fed into the destruction device} \]
\[ \text{tGHG}_{\text{OUT}} = \text{The mass of GHG} \text{i exhausted from the destruction device} \]

\text{Diesel—Other} \text{ is any distillate fuel oil not defined elsewhere, including Diesel Treated as Blendstock (DTAB).}

\text{DIPE} \text{ (diisopropyl ether, (CH}_3\text{)}_2\text{CHOCH(CH}_3\text{)}_2\text{) is an ether as described in “Oxygenates.”}

\text{Direct liquefaction} \text{ means the conversion of coal directly into liquids, rather than passing through an intermediate gaseous state.}

\text{Direct reduction furnace} \text{ means a high temperature furnace typically fired with natural gas to produce solid iron from iron ore or iron ore pellets and coke, coal, or other carbonaceous materials.}

\text{Distillate fuel oil} \text{ means a classification for one of the petroleum fractions produced in conventional distillation operations and from crackers and hydrotreating process units. The generic term distillate fuel oil includes kerosene, kerosene-type jet fuel, diesel fuels (Diesel Fuels No. 1, No. 2, and No. 4), and fuel oils (Fuel Oils No. 1, No. 2, and No. 4).}

\text{Distillate Fuel No. 1} \text{ has a maximum distillation temperature of 550 °F at the 90 percent recovery point and a minimum flash point of 100 °F and includes fuels commonly known as Diesel Fuel No. 1 and Fuel Oil No. 1, but excludes kerosene. This fuel is further subdivided into categories of sulfur content: High Sulfur (greater than 500 ppm), Low Sulfur (less than or equal to 500 ppm and greater than 15 ppm), and Ultra Low Sulfur (less than or equal to 15 ppm).}

\text{Distillate Fuel No. 2} \text{ has a minimum and maximum distillation temperature of 540 °F and 640 °F at the 90 percent recovery point, respectively, and includes fuels commonly known as Diesel Fuel No. 2 and Fuel Oil No. 2. This fuel is further subdivided into categories of sulfur content: High Sulfur (greater than 500 ppm), Low Sulfur (less than or equal to 500 ppm and greater than 15 ppm), and Ultra Low Sulfur (less than or equal to 15 ppm).}

\text{Distillate Fuel No. 4} \text{ is a distillate fuel oil made by blending distillate fuel oil and residual fuel oil, with a minimum flash point of 131 °F.}

\text{DOC} \text{ means the fraction of DOC that actually decomposes under the (presumably anaerobic) conditions within the landfill.}

\text{Dry lot} \text{ means a manure management system component consisting of a paved or unpaved open confinement area without any significant vegetative cover where accumulating manure may be removed periodically.}

\text{Electric arc furnace (EAF)} \text{ means a furnace that produces molten alloy metal and heats the charge materials with electric arcs from carbon electrodes.}

\text{Electric arc furnace steelmaking} \text{ means the production of carbon, alloy, or specialty steels using an EAF. This definition excludes EAFs at steel foundries and EAFs used to produce nonferrous metals.}

\text{Electrothermic furnace} \text{ means a furnace that heats the charged materials with electric arcs from carbon electrodes.}

\text{Emergency generator} \text{ means a stationary combustion device, such as a reciprocating internal combustion engine or turbine that serves solely as a secondary source of mechanical or electrical power whenever the primary energy supply is disrupted or discontinued during power outages or natural disasters that are beyond the control of the owner or operator of a facility. An emergency generator operates only during emergency situations, for training of personnel under simulated emergency conditions, as part of emergency demand response procedures, or for standard performance testing procedures as required by law or by the generator manufacturer. A generator that serves as a back-up power source under conditions of load shedding, peak shaving, power interruptions pursuant to an interruptible power service agreement, or scheduled facility maintenance shall not be considered an emergency generator.}

\text{Emergency equipment} \text{ means any auxiliary fossil fuel-powered equipment, such as a fire pump, that is used only in emergency situations.}

\text{ETBE} \text{ (ethyl tertiary butyl ether, (CH}_3\text{)}_3\text{COCH}_3\text{H) is an ether as described in “Oxygenates.”}
Ethane is a paraffinic hydrocarbon with molecular formula C\(_2\)H\(_6\).

Ethanol is an anhydrous alcohol with molecular formula C\(_2\)H\(_5\)OH.

Ethylene is an olefinic hydrocarbon with molecular formula C\(_2\)H\(_4\).

Ex refinery gate means the point at which a petroleum product leaves the refinery.

Experimental furnace means a glass melting furnace with the sole purpose of operating to evaluate glass melting processes, technologies, or glass products. An experimental furnace does not produce glass that is sold (except for further research and development purposes) or that is used as a raw material for non-experimental furnaces.

Export means to transport a product from inside the United States to persons outside the United States, excluding any such transport on behalf of the United States military including foreign military sales under the Arms Export Control Act.

Exporter means any person, company or organization of record that transfers for sale or for other benefit, domestic products from the United States to another country or to an affiliate in another country, excluding any such transfers on behalf of the United States military or military purposes including foreign military sales under the Arms Export Control Act. An exporter is not the entity merely transporting the domestic products, rather an exporter is the entity deriving the principal benefit from the transaction.

Facility means any physical property, plant, building, structure, source, or stationary equipment located on one or more contiguous or adjacent properties in actual physical contact or separated solely by a public roadway or other public right-of-way and under common ownership or common control, that emits or may emit any greenhouse gas. Operators of military installations may classify such installations as more than a single facility based on distinct and independent functional groupings within contiguous military properties.

Feed means the prepared and mixed materials, which include but are not limited to materials such as limestone, clay, shale, sand, iron ore, mill scale, cement kiln dust and flyash, that are fed to the kiln. Feed does not include the fuels used in the kiln to produce heat to form the clinker product.

Feedstock means raw material inputs to a process that are transformed by reaction, oxidation, or other chemical or physical methods into products and by-products. Supplemental fuel burned to provide heat or thermal energy is not a feedstock.

Fischer-Tropsch process means a catalyzed chemical reaction in which synthesis gas, a mixture of carbon monoxide and hydrogen, is converted into liquid hydrocarbons of various forms.

Flare means a combustion device, whether at ground level or elevated, that uses an open flame to burn combustible gases with combustion air provided by uncontrolled ambient air around the flame.

Flat glass means glass made of soda-lime recipe and produced into continuous flat sheets and other products listed in NAICS 327211.

Flowmeter means a device that measures the mass or volumetric rate of flow of a gas, liquid, or solid moving through an open or closed conduit (e.g. flowmeters include, but are not limited to, rotameters, turbine meters, coriolis meters, orifice meters, ultra-sonic flowmeters, and vortex flowmeters).

Fluid coking unit means one or more refinery process units in which high molecular weight petroleum derivatives are thermally cracked and petroleum coke is continuously produced in a fluidized bed system. The fluid coking unit includes equipment for controlling air pollutant emissions and for heat recovery on the fluid coking burner exhaust vent. There are two basic types of fluid coking units: A traditional fluid coking unit in which only a small portion of the coke produced in the unit is burned to fuel the unit and the fluid coking burner exhaust vent is directed to the atmosphere (after processing in a CO boiler or other air pollutant control equipment) and a flexicoking unit in which an auxiliary burner is used to partially combust a significant portion of the produced petroleum coke to generate a low value fuel gas that is used as fuel in other combustion sources at the refinery.

Fluorinated greenhouse gas means sulfur hexafluoride (SF\(_6\)), nitrogen trifluoride (NF\(_3\)), and any fluorocarbon...
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except for controlled substances as defined at 40 CFR part 82, subpart A and substances with vapor pressures of less than 1 mm of Hg absolute at 25 degrees C. With these exceptions, “fluorinated GHG” includes but is not limited to any hydrofluorocarbon, any perfluorocarbon, any fully fluorinated linear, branched or cyclic alkane, ether, tertiary amine or aminoether, any perfluoropolyether, and any hydrofluoropolyether.

Fossil fuel means natural gas, petroleum, coal, or any form of solid, liquid, or gaseous fuel derived from such material, for purpose of creating useful heat.

Fractionators means plants that produce fractionated natural gas liquids (NGLs) extracted from produced natural gas and separate the NGLs individual component products: ethane, propane, butanes and pentane-plus (C5+). Plants that only process natural gas but do not fractionate NGLs further into component products are not considered fractionators. Some fractionators do not process production gas, but instead fractionate bulk NGLs received from natural gas processors. Some fractionators both process natural gas and fractionate bulk NGLs received from other plants.

Fuel means solid, liquid or gaseous combustible material.

Fuel gas means gas generated at a petroleum refinery or petrochemical plant and that is combusted separately or in any combination with any type of gas.

Fuel gas system means a system of compressors, piping, knock-out pots, mix drums, and, if necessary, units used to remove sulfur contaminants from the fuel gas (e.g., amine scrubbers) that collects fuel gas from one or more sources for treatment, as necessary, and transport to a stationary combustion unit. A fuel gas system may have an overpressure vent to a flare but the primary purpose for a fuel gas system is to provide fuel to the various combustion units at the refinery or petrochemical plant.

Furnace slag means a by-product formed in metal melting furnaces when slagging agents, reducing agents, and/or fluxes (e.g., coke ash, limestone, silicates) are added to remove impurities from the molten metal.

Gas collection system or landfill gas collection system means a system of pipes used to collect landfill gas from different locations in the landfill by means of a fan or similar mechanical draft equipment to a single location for treatment (thermal destruction) or use. Landfill gas collection systems may also include knock-out or separator drums and/or a compressor. A single landfill may have multiple gas collection systems. Landfill gas collection systems do not include “passive” systems, whereby landfill gas flows naturally to the surface of the landfill where an opening or pipe (vent) is installed to allow for natural gas flow.

Gas conditions mean the actual temperature, volume, and pressure of a gas sample.

Gas-fired unit means a stationary combustion unit that derives more than 50 percent of its annual heat input from the combustion of gaseous fuels, and the remainder of its annual heat input from the combustion of fuel oil or other liquid fuels.

Gas monitor means an instrument that continuously measures the concentration of a particular gaseous species in the effluent of a stationary source.

Gas to oil ratio (GOR) means the ratio of the volume of gas at standard temperature and pressure that is produced from a volume of oil when depressurized to standard temperature and pressure.

Gaseous fuel means a material that is in the gaseous state at standard atmospheric temperature and pressure conditions and that is combusted to produce heat and/or energy.

Gasification means the conversion of a solid or liquid raw material into a gas.

Gasoline—Other is any gasoline that is not defined elsewhere, including GTAB (gasoline treated as blendstock).

Glass melting furnace means a unit comprising a refractory-lined vessel in which raw materials are charged and melted at high temperature to produce molten glass.

Glass produced means the weight of glass exiting a glass melting furnace.
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Global warming potential or GWP means the ratio of the time-integrated radiative forcing from the instantaneous release of one kilogram of a trace substance relative to that of one kilogram of a reference gas, i.e., CO₂.

GPA means the Gas Processors Association.

Greenhouse gas or GHG means carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), sulfur hexafluoride (SF₆), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and other fluorinated greenhouse gases as defined in this section.

GTBA (gasoline-grade tertiary butyl alcohol, (CH₃)₃COH), or t-butanol, is an alcohol as described in “Oxygenates.”

Heavy Gas Oils are petroleum distillates with an approximate boiling range from 651 °F to 1,000 °F.

Heel means the amount of gas that remains in a shipping container after it is discharged or off-loaded (that is no more than ten percent of the volume of the container).

High-bleed pneumatic devices are automated, continuous bleed flow control devices powered by pressurized natural gas and used for maintaining a process condition such as liquid level, pressure, delta-pressure and temperature. Part of the gas power stream that is regulated by the process condition flows to a valve actuator controller where it vents continuously (bleeds) to the atmosphere at a rate in excess of 6 standard cubic feet per hour.

High heat value or HHV means the high or gross heat content of the fuel with the heat of vaporization included. The water is assumed to be in a liquid state.

Hydrofluorocarbons or HFCs means a class of GHGs consisting of hydrogen, fluorine, and carbon.

Import means, to land on, bring into, or introduce into, any place subject to the jurisdiction of the United States whether or not such landing, bringing, or introduction constitutes an importation within the meaning of the customs laws of the United States, with the following exemptions:

(1) Off-loading used or excess fluorinated GHGs or nitrous oxide of U.S. origin from a ship during servicing.

(2) Bringing fluorinated GHGs or nitrous oxide into the U.S. from Mexico where the fluorinated GHGs or nitrous oxide had been admitted into Mexico in bond and were of U.S. origin.

(3) Bringing fluorinated GHGs or nitrous oxide into the U.S. when transported in a consignment of personal or household effects or in a similar non-commercial situation normally exempted from U.S. Customs attention.

(4) Bringing fluorinated GHGs or nitrous oxide into U.S. jurisdiction exclusively for U.S. military purposes.

Importer means any person, company, or organization of record that for any reason brings a product into the United States from a foreign country, excluding introduction into U.S. jurisdiction exclusively for United States military purposes. An importer is the person, company, or organization primarily liable for the payment of any duties on the merchandise or an authorized agent acting on their behalf. The term includes, as appropriate:

(1) The consignee.

(2) The importer of record.

(3) The actual owner.

(4) The transferee, if the right to draw merchandise in a bonded warehouse has been transferred.

Indurating furnace means a furnace where unfired taconite pellets, called green balls, are hardened at high temperatures to produce fired pellets for use in a blast furnace. Types of indurating furnaces include straight gate and grate kiln furnaces.

Industrial greenhouse gases means nitrous oxide or any fluorinated greenhouse gas.

In-line kiln/raw mill means a system in a portland cement production process where a dry kiln system is integrated with the raw mill so that all or a portion of the kiln exhaust gases are used to perform the drying operation of the raw mill, with no auxiliary heat source used. In this system the kiln is capable of operating without the raw mill operating, but the raw mill cannot operate without the kiln gases, and consequently, the raw mill does not generate a separate exhaust gas stream.

Intermittent bleed pneumatic devices mean automated flow control devices powered by pressurized natural gas and
used for maintaining a process condition such as liquid level, pressure, delta-pressure and temperature. These are snap-acting or throttling devices that discharge the full volume of the actuator intermittently when control action is necessary, but does not bleed continuously.

*Isobutane* is a paraffinic branch chain hydrocarbon with molecular formula C\text{\textsubscript{4}}H\text{\textsubscript{10}}.

*Isobutylene* is an olefinic branch chain hydrocarbon with molecular formula C\text{\textsubscript{4}}H\text{\textsubscript{8}}.

*Kerosene* is a light petroleum distillate with a maximum distillation temperature of 400 °F at the 10-percent recovery point, a final maximum boiling point of 572 °F, a minimum flash point of 100 °F, and a maximum freezing point of −22 °F. Included are No. 1-K and No. 2-K, distinguished by maximum sulfur content (0.04 and 0.30 percent of total mass, respectively), as well as all other grades of kerosene called range or stove oil. Excluded is kerosene-type jet fuel (see definition herein).

*Kerosene-type jet fuel* means a kerosene-based product used in commercial and military turbojet and turbo-prop aircraft. The product has a maximum distillation temperature of 400 °F at the 10 percent recovery point and a final maximum boiling point of 572 °F. Included are Jet A, Jet A–1, JP–5, and JP–8.

*Kiln* means an oven, furnace, or heated enclosure used for thermally processing a mineral or mineral-based substance.

*Landfill* means an area of land or an excavation in which wastes are placed for permanent disposal and that is not a land application unit, surface impoundment, injection well, or waste pile as those terms are defined under 40 CFR 257.2.

*Landfill gas* means gas produced as a result of anaerobic decomposition of waste materials in the landfill. Landfill gas generally contains 40 to 60 percent methane on a dry basis, typically less than 1 percent non-methane organic chemicals, and the remainder being carbon dioxide.

*Liberated* means released from coal and surrounding rock strata during the mining process. This includes both methane emitted from the ventilation system and methane drained from degasification systems.

*Lime* is the generic term for a variety of chemical compounds that are produced by the calcination of limestone or dolomite. These products include high-calcium quicklime, calcium hydroxide, hydrated lime, dolomitic quicklime, and dolomitic hydrate.

*Liquid/Slurry* means a manure management component in which manure is stored as excreted or with some minimal addition of water to facilitate handling and is stored in either tanks or earthen ponds, usually for periods less than one year.

*Low-bleed pneumatic devices* mean automated flow control devices powered by pressurized natural gas and used for maintaining a process condition such as liquid level, pressure, delta-pressure and temperature. Part of the gas power stream that is regulated by the process condition flows to a valve actuator controller where it vents continuously (bleeds) to the atmosphere at a rate equal to or less than six standard cubic feet per hour.

*Lubricants* include all grades of lubricating oils, from spindle oil to cylinder oil to those used in greases. Petroleum lubricants may be produced from distillates or residues.

*Makeup chemicals* means carbonate chemicals (e.g., sodium and calcium carbonates) that are added to the chemical recovery areas of chemical pulp mills to replace chemicals lost in the process.

*Manure composting* means the biological oxidation of a solid waste including manure usually with bedding or another organic carbon source typically at thermophilic temperatures produced by microbial heat production. There are four types of composting employed for manure management: Static, in vessel, intensive windrow and passive windrow. Static composting typically occurs in an enclosed channel, with forced aeration and continuous mixing. In vessel composting occurs in piles with forced aeration but no mixing. Intensive windrow composting occurs in windrows with regular turning for mixing and aeration. Passive windrow composting occurs in windrows with
in frequent turning for mixing and aeration.

**Maximum rated heat input capacity** means the hourly heat input to a unit (in mmBtu/hr), when it combusts the maximum amount of fuel per hour that it is capable of combusting on a steady state basis, as of the initial installation of the unit, as specified by the manufacturer.

**Maximum rated input capacity** means the maximum charging rate of a municipal waste combustor unit expressed in tons per day of municipal solid waste combusted, calculated according to the procedures under 40 CFR 60.58b(j).

**Mcf** means thousand cubic feet.

**Methane conversion factor** means the extent to which the CH\textsubscript{4} producing capacity (B\textsubscript{o}) is realized in each type of treatment and discharge pathway and system. Thus, it is an indication of the degree to which the system is anaerobic.

**Methane correction factor** means an adjustment factor applied to the methane generation rate to account for portions of the landfill that remain aerobic. The methane correction factor can be considered the fraction of the total landfill waste volume that is ultimately disposed of in an anaerobic state. Managed landfills that have soil or other cover materials have a methane correction factor of 1.

**Methanol** (CH\textsubscript{3}OH) is an alcohol as described in “Oxygenates.”

**Midgrade gasoline** has an octane rating greater than or equal to 88 and less than or equal to 90. This definition applies to the midgrade categories of Conventional-Summer, Conventional-Winter, Reformulated-Summer, and Reformulated-Winter. For midgrade categories of RBOB-Summer, RBOB-Winter, CBOB-Summer, and CBOB-Winter, this definition refers to the expected octane rating of the finished gasoline after oxygenate has been added to the RBOB or CBOB.

**Miscellaneous products** include all refined petroleum products not defined elsewhere. It includes, but is not limited to, naphtha-type jet fuel (Jet B and JP-4), petrolatum lube refining by-products aromatic extracts and tars), adsorption oils, ram-jet fuel, petroleum rocket fuels, synthetic natural gas feedstocks, waste feedstocks, and specialty oils. It excludes organic waste sludges, tank bottoms, spent catalysts, and sulfuric acid.

**MMBtu** means million British thermal units.

**Motor gasoline (finished)** means a complex mixture of volatile hydrocarbons, with or without additives, suitably blended to be used in spark ignition engines. Motor gasoline includes conventional gasoline, reformulated gasoline, and all types of oxygenated gasoline. Gasoline also has seasonal variations in an effort to control ozone levels. This is achieved by lowering the Reid Vapor Pressure (RVP) of gasoline during the summer driving season. Depending on the region of the country the RVP is lowered to below 9.0 psi or 7.8 psi. The RVP may be further lowered by state regulations.

**Mscf** means thousand standard cubic feet.

**MTBE** (methyl tertiary butyl ether, (CH\textsubscript{3})\textsubscript{3}COCH\textsubscript{3}) is an ether as described in “Oxygenates.”

**Municipal solid waste landfill or MSW landfill** means an entire disposal facility in a contiguous geographical space where household waste is placed in or on land. An MSW landfill may also receive other types of RCRA Subtitle D wastes (40 CFR 257.2) such as commercial solid waste, nonhazardous sludge, conditionally exempt small quantity generator waste, and industrial solid waste. Portions of an MSW landfill may be separated by access roads, public roadways, or other public right-of-ways. An MSW landfill may be publicly or privately owned.

**Municipal solid waste or MSW** means solid phase household, commercial/retail, and/or institutional waste. Household waste includes material discarded by single and multiple residential dwellings, hotels, motels, and other similar permanent or temporary housing establishments or facilities. Commercial/retail waste includes material discarded by stores, offices, restaurants, warehouses, non-manufacturing activities at industrial facilities, and other similar establishments or facilities. Institutional waste includes material discarded by schools,
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nonmedical waste discarded by hospitals, material discarded by non-manufacturing activities at prisons and government facilities, and material discarded by other similar establishments or facilities. Household, commercial/retail, and institutional wastes include yard waste, refuse-derived fuel, and motor vehicle maintenance materials. Insofar as there is separate collection, processing and disposal of industrial source waste streams consisting of used oil, wood pallets, construction, renovation, and demolition wastes (which includes, but is not limited to, railroad ties and telephone poles), paper, clean wood, plastics, industrial process or manufacturing wastes, medical waste, motor vehicle parts or vehicle fluff, or used tires that do not contain hazardous waste identified or listed under 42 U.S.C. § 6921, such wastes are not municipal solid waste. However, such wastes qualify as municipal solid waste where they are collected with other municipal solid waste or are otherwise combined with other municipal solid waste for processing and/or disposal.

Municipal wastewater treatment plant means a series of treatment processes used to remove contaminants and pollutants from domestic, business, and industrial wastewater collected in city sewers and transported to a centralized wastewater treatment system such as a publicly owned treatment works (POTW).

N₂O means nitrous oxide.

Naphthas (< 401 °F) is a generic term applied to a petroleum fraction with an approximate boiling range between 122 °F and 400 °F. The naphtha fraction of crude oil is the raw material for gasoline and is composed largely of paraffinic hydrocarbons.

Natural gas means a naturally occurring mixture of hydrocarbon and non-hydrocarbon gases found in geologic formations beneath the earth’s surface, of which the principal constituent is methane. Natural gas may be field quality or pipeline quality.

Natural gas driven pneumatic pump means a pump that uses pressurized natural gas to move a piston or diaphragm, which pumps liquids on the opposite side of the piston or diaphragm.

Natural gas liquids (NGLs) means those hydrocarbons in natural gas that are separated from the gas as liquids through the process of absorption, condensation, adsorption, or other methods. Generally, such liquids consist of ethane, propane, butanes, and pentanes plus. Bulk NGLs refers to mixtures of NGLs that are sold or delivered as undifferentiated product from natural gas processing plants.

Natural gasoline means a mixture of liquid hydrocarbons (mostly pentanes and heavier hydrocarbons) extracted from natural gas. It includes isopentane.

NIST means the United States National Institute of Standards and Technology.

Nitric acid production line means a series of reactors and absorbers used to produce nitric acid.

Nitrogen excreted is the nitrogen that is excreted by livestock in manure and urine.

Non-crude feedstocks means any petroleum product or natural gas liquid that enters the refinery to be further refined or otherwise used on site.

Non-recovery coke oven battery means a group of ovens connected by common walls and operated as a unit, where coal undergoes destructive distillation under negative pressure to produce coke, and which is designed for the combustion of the coke oven gas from which by-products are not recovered.

North American Industry Classification System (NAICS) code(s) means the six-digit code(s) that represents the product(s)/activity(s)/service(s) at a facility or supplier as listed in the Federal Register and defined in “North American Industrial Classification System Manual 2007,” available from the U.S. Department of Commerce, National Technical Information Service, Alexandria, VA 22312, phone (703) 605-6000 or (800) 553-6847. http://www.census.gov/eos/www/naics/.

Oil-fired unit means a stationary combustion unit that derives more than 50 percent of its annual heat input from the combustion of fuel oil, and the remainder of its annual heat input from the combustion of natural gas or other gaseous fuels.

Open-ended valve or lines (OELs) means any valve, except pressure relief
valves, having one side of the valve seat in contact with process fluid and one side open to atmosphere, either directly or through open piping.

Operating hours means the duration of time in which a process or process unit is utilized; this excludes shutdown, maintenance, and standby.

Operational change means, for purposes of §98.3(b), a change in the type of feedstock or fuel used, a change in operating hours, or a change in process production rate.

Operator means any person who operates or supervises a facility or supplier.

Other oils (> 401 °F) are oils with a boiling range equal to or greater than 401 °F that are generally intended for use as a petrochemical feedstock and are not defined elsewhere.

Outer Continental Shelf means all submerged lands lying seaward and outside of the area of lands beneath navigable waters as defined in 43 U.S.C. 1331, and of which the subsoil and seabed appertain to the United States and are subject to its jurisdiction and control.

Owner means any person who has legal or equitable title to, has a leasehold interest in, or control of a facility or supplier, except a person whose legal or equitable title to or leasehold interest in the facility or supplier arises solely because the person is a limited partner in a partnership that has legal or equitable title to, has a leasehold interest in, or control of the facility or supplier shall not be considered an "owner" of the facility or supplier.

Oxygenates means substances which, when added to gasoline, increase the oxygen content of the gasoline. Common oxygenates are ethanol, methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), diisopropyl ether (DIPE), and methanol.

Pasture/Range/Paddock means the manure from pasture and range grazing animals is allowed to lie as deposited, and is not managed.

Pentanes plus, or C5+, is a mixture of hydrocarbons that is a liquid at ambient temperature and pressure, and consists mostly of pentanes (five carbon chain) and higher carbon number hydrocarbons. Pentanes plus includes, but is not limited to, normal pentane, isopentane, hexanes-plus (natural gasoline), and plant condensate.

Perfluorocarbons or PFCs means a class of greenhouse gases consisting on the molecular level of carbon and fluorine.

Petrochemical means methanol, acrylonitrile, ethylene, ethylene oxide, ethylene dichloride, and any form of carbon black.

Petrochemical feedstocks means feedstocks derived from petroleum for the manufacture of chemicals, synthetic rubber, and a variety of plastics. This category is usually divided into naphthas less than 401 °F and other oils greater than 401 °F.

Petroleum means oil removed from the earth and the oil derived from tar sands and shale.

Petroleum coke means a black solid residue, obtained mainly by cracking and carbonizing of petroleum derived feedstocks, vacuum bottoms, tar and pitches in processes such as delayed coking or fluid coking. It consists mainly of carbon (90 to 95 percent), has low ash content, and may be used as a feedstock in coke ovens. This product is also known as marketable coke or catalyst coke.

Petroleum product means all refined and semi-refined products that are produced at a refinery by processing crude oil and other petroleum-based feedstocks, including petroleum products derived from co-processing biomass and petroleum feedstock together, but not including plastics or plastic products. Petroleum products may be combusted for energy use, or they may be used either for non-energy processes or as non-energy products. The definition of petroleum product for importers and exporters excludes waxes.

Physical address, with respect to a United States parent company as defined in this section, means the street address, city, state and zip code of that company's physical location.

Pit storage below animal confinement (deep pits) means the collection and storage of manure typically below a slatted floor in an enclosed animal confinement facility. This usually occurs with little or no added water for periods less than one year.
Portable means designed and capable of being carried or moved from one location to another. Indications of portability include but are not limited to wheels, skids, carrying handles, dolly, trailer, or platform. Equipment is not portable if any one of the following conditions exists:

1. The equipment is attached to a foundation.
2. The equipment or a replacement resides at the same location for more than 12 consecutive months.
3. The equipment is located at a seasonal facility and operates during the full annual operating period of the seasonal facility, remains at the facility for at least two years, and operates at that facility for at least three months each year.
4. The equipment is moved from one location to another in an attempt to circumvent the portable residence time requirements of this definition.

Poultry manure with litter means a manure management system component that is similar to cattle and swine deep bedding except usually not combined with a dry lot or pasture. The system is typically used for poultry breeder flocks and for the production of meat type chickens (broiler) and other fowl.

Poultry manure without litter means a manure management system component that may manage manure in a liquid form, similar to open pits in enclosed animal confinement facilities. These systems may alternatively be designed and operated to dry manure as it accumulates. The latter is known as a high-rise manure management system and is a form of passive windrow manure composting when designed and operated properly.

Precision of a measurement at a specified level (e.g., one percent of full scale or one percent of the value measured) means that 95 percent of repeat measurements made by a device or technique are within the range bounded by the mean of the measurements plus or minus the specified level.

Premium grade gasoline is gasoline having an antiknock index, i.e., octane rating, greater than 90. This definition applies to the premium grade categories of RBOB-Summer, RBOB-Winter, CBOB-Summer, and CBOB-Winter, this definition refers to the expected octane rating of the finished gasoline after oxygenate has been added to the RBOB or CBOB.

Pressed and blown glass means glass which is pressed, blown, or both, into products such as light bulbs, glass fiber, technical glass, and other products listed in NAICS 327212.

Pressure relief device or pressure relief valve or pressure safety valve means a safety device used to prevent operating pressures from exceeding the maximum allowable working pressure of the process equipment. A common pressure relief device is but not limited to a spring-loaded pressure relief valve. Devices that are actuated either by a pressure of less than or equal to 2.5 psig or by a vacuum are not pressure relief devices.

Primary fuel means the fuel that provides the greatest percentage of the annual heat input to a stationary fuel combustion unit.

Process emissions means the emissions from industrial processes (e.g., cement production, ammonia production) involving chemical or physical transformations other than fuel combustion. For example, the calcination of carbonates in a kiln during cement production or the oxidation of methane in an ammonia process results in the release of process CO$_2$ emissions to the atmosphere. Emissions from fuel combustion to provide process heat are not part of process emissions, whether the combustion is internal or external to the process equipment.

Process unit means the equipment assembled and connected by pipes and ducts to process raw materials and to manufacture either a final product or an intermediate used in the onsite production of other products. The process unit also includes the purification of recovered byproducts.

Process vent means means a gas stream that: Is discharged through a conveyance to the atmosphere either directly or after passing through a control device; originates from a unit operation, including but not limited to
reactors (including reformers, crackers, and furnaces, and separation equipment for products and recovered by-products); and contains or has the potential to contain GHG that is generated in the process. Process vent does not include safety device discharges, equipment leaks, gas streams routed to a fuel gas system or to a flare, discharges from storage tanks.

Propane is a paraffinic hydrocarbon with molecular formula C\textsubscript{3}H\textsubscript{8}.

Propylene is an olefinic hydrocarbon with molecular formula C\textsubscript{3}H\textsubscript{6}.

Pulp mill lime kiln means the combustion units (e.g., rotary lime kiln or fluidized bed calciner) used at a kraft or soda pulp mill to calcine lime mud, which consists primarily of calcium carbonate, into quicklime, which is calcium oxide.

Pushing means the process of removing the coke from the coke oven at the end of the coking cycle. Pushing begins when coke first begins to fall from the oven into the quench car and ends when the quench car enters the quench tower.

Raw mill means a ball and tube mill, vertical roller mill or other size reduction equipment, that is not part of an in-line kiln/raw mill, used to grind feed to the appropriate size. Moisture may be added or removed from the feed during the grinding operation. If the raw mill is used to remove moisture from feed materials, it is also, by definition, a raw material dryer. The raw mill also includes the air separator associated with the raw mill.

RBOB-Summer (reformulated blendstock for oxygenate blending) means a petroleum product which, when blended with a specified type and percentage of oxygenate, meets the definition of Reformulated-Summer.

RBOB-Winter (reformulated blendstock for oxygenate blending) means a petroleum product which, when blended with a specified type and percentage of oxygenate, meets the definition of Reformulated-Winter.

Reciprocating compressor means a piece of equipment that increases the pressure of a process natural gas or CO\textsubscript{2} by positive displacement, employing linear movement of a shaft driving a piston in a cylinder.

Reciprocating compressor rod packing means a series of flexible rings in machined metal cups that fit around the reciprocating compressor piston rod to create a seal limiting the amount of compressed natural gas or CO\textsubscript{2} that escapes to the atmosphere.

Re-condenser means heat exchangers that cool compressed boil-off gas to a temperature that will condense natural gas to a liquid.

Reformulated-Summer refers to finished gasoline formulated for use in motor vehicles, the composition and properties of which meet the requirements of the reformulated gasoline regulations promulgated by the U.S. Environmental Protection Agency under 40 CFR 80.40 and 40 CFR 80.41, and summer RVP standards required under 40 CFR 80.27 or as specified by the state. Reformulated gasoline excludes Reformulated Blendstock for Oxygenate Blending (RBOB) as well as other blendstock.

Reformulated-Winter refers to finished gasoline formulated for use in motor vehicles, the composition and properties of which meet the requirements of the reformulated gasoline regulations promulgated by the U.S. Environmental Protection Agency under 40 CFR 80.40 and 40 CFR 80.41, but which do not meet summer RVP standards required under 40 CFR 80.27 or as specified by the state. NOTE: This category includes Oxygenated Fuels Program Reformulated Gasoline (OFG). Reformulated gasoline excludes Reformulated Blendstock for Oxygenate Blending (RBOB) as well as other blendstock.

Regular grade gasoline is gasoline having an antiknock index, i.e., octane rating, greater than or equal to 85 and less than 88. This definition applies to the regular grade categories of Conventional-Summer, Conventional-Winter, Reformulated-Summer, and Reformulated-Winter. For regular grade categories of RBOB-Summer, RBOB-Winter, CBOB-Summer, and CBOB-Winter, this definition refers to the expected octane rating of the finished gasoline after oxygenate has been added to the RBOB or CBOB.

Rendered animal fat, or tallow, means fats extracted from animals which are generally used as a feedstock in making biodiesel.
Research and development means those activities conducted in process units or at laboratory bench-scale settings whose purpose is to conduct research and development for new processes, technologies, or products and whose purpose is not for the manufacture of products for commercial sale, except in a de minimis manner.

Residual Fuel Oil No. 5 (Navy Special) is a classification for the heavier fuel oil generally used in steam powered vessels in government service and inshore power plants. It has a minimum flash point of 131 °F.

Residual Fuel Oil No. 6 (a.k.a. Bunker C) is a classification for the heavier fuel oil generally used for the production of electric power, space heating, vessel bunkering and various industrial purposes. It has a minimum flash point of 140 °F.

Residuum is residue from crude oil after distilling off all but the heaviest components, with a boiling range greater than 1,000 °F.

Road oil is any heavy petroleum oil, including residual asphaltic oil used as a dust palliative and surface treatment on roads and highways. It is generally produced in six grades, from 0, the most liquid, to 5, the most viscous.

Rotary lime kiln means a unit with an inclined rotating drum that is used to produce a lime product from limestone by calcination.

Safety device means a closure device such as a pressure relief valve, frangible disc, fusible plug, or any other type of device which functions exclusively to prevent physical damage or permanent deformation to a unit or its air emission control equipment by venting gases or vapors directly to the atmosphere during unsafe conditions resulting from an unplanned, accidental, or emergency event. A safety device is not used for routine venting of gases or vapors from the vapor headspace underneath a cover such as during filling of the unit or to adjust the pressure in response to normal daily diurnal ambient temperature fluctuations. A safety device is designed to remain in a closed position during normal operations and open only when the internal pressure, or another relevant parameter, exceeds the device threshold setting applicable to the air emission control equipment as determined by the owner or operator based on manufacturer recommendations, applicable regulations, fire protection and prevention codes and practices, or other requirements for the safe handling of flammable, combustible, explosive, reactive, or hazardous materials.

Sales oil means produced crude oil or condensate measured at the production lease automatic custody transfer (LACT) meter or custody transfer tank gauge.

Semi-refined petroleum product means all oils requiring further processing. Included in this category are unfinished oils which are produced by the partial refining of crude oil and include the following: Naphthas and lighter oils; kerosene and light gas oils; heavy gas oils; and residuum, and all products that require further processing or the addition of blendstocks.

Sendout means, in the context of a local distribution company, the total deliveries of natural gas to customers over a specified time interval (typically hour, day, month, or year). Sendout is the sum of gas received through the city gate, gas withdrawn from on-system storage or peak shaving plants, and gas produced and delivered into the distribution system; and is net of any natural gas injected into on-system storage. It comprises gas sales, exchange, deliveries, gas used by company, and unaccounted for gas. Sendout is measured at the city gate station, and other on-system receipt points from storage, peak shaving, and production.

Sensor means a device that measures a physical quantity/quality or the change in a physical quantity/quality, such as temperature, pressure, flow rate, pH, or liquid level.

SF6 means sulfur hexafluoride.

Shutdown means the cessation of operation of an emission source for any purpose.

Silicon carbide means an artificial abrasive produced from silica sand or quartz and petroleum coke.

Sinter process means a process that produces a fused aggregate of fine iron-bearing materials suited for use in a blast furnace. The sinter machine is composed of a continuous traveling
§ 98.6 grate that conveys a bed of ore fines and other finely divided iron-bearing material and fuel (typically coke breeze), a burner at the feed end of the grate for ignition, and a series of downdraft windboxes along the length of the strand to support downdraft combustion and heat sufficient to produce a fused sinter product.

Site means any combination of one or more graded pad sites, gravel pad sites, foundations, platforms, or the immediate physical location upon which equipment is physically located.

Smelting furnace means a furnace in which lead-bearing materials, carbon-containing reducing agents, and fluxes are melted together to form a molten mass of material containing lead and slag.

Solid by-products means plant matter such as vegetable waste, animal materials/wastes, and other solid biomass, except for wood, wood waste, and sulphite lyes (black liquor).

Solid storage is the storage of manure, typically for a period of several months, in unconfined piles or stacks. Manure is able to be stacked due to the presence of a sufficient amount of bedding material or loss of moisture by evaporation.

Sour gas means any gas that contains significant concentrations of hydrogen sulfide. Sour gas may include untreated fuel gas, amine stripper off-gas, or sour water stripper gas.

Sour natural gas means natural gas that contains significant concentrations of hydrogen sulfide (H₂S) and/or carbon dioxide (CO₂) that exceed the concentrations specified for commercially saleable natural gas delivered from transmission and distribution pipelines.

Special naphthas means all finished products with the naphtha boiling range (290 ° to 470 °F) that are generally used as paint thinners, cleaners or solvents. These products are refined to a specified flash point. Special naphthas include all commercial hexane and cleaning solvents conforming to ASTM Specification D1836–07, Standard Specification for Commercial Hexanes, and D225–02 (Reapproved 2007), Standard Specification for Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent), respectively. Naphthas to be blended or marketed as motor gasoline or aviation gasoline, or that are to be used as petrochemical and synthetic natural gas (SNG) feedstocks are excluded.

Spent liquor solids means the dry weight of the solids in the spent pulping liquor that enters the chemical recovery furnace or chemical recovery combustion unit.

Spent pulping liquor means the residual liquid collected from on-site pulping operations at chemical pulp facilities that is subsequently fired in chemical recovery furnaces at kraft and soda pulp facilities or chemical recovery combustion units at sulfite or semi-chemical pulp facilities.

Standard conditions or standard temperature and pressure (STP), for the purposes of this part, means either 60 or 68 degrees Fahrenheit and 14.7 pounds per square inch absolute.

Steam reforming means a catalytic process that involves a reaction between natural gas or other light hydrocarbons and steam. The result is a mixture of hydrogen, carbon monoxide, carbon dioxide, and water.

Still gas means any form or mixture of gases produced in refineries by distillation, cracking, reforming, and other processes. The principal constituents are methane, ethane, ethylene, normal butane, butylene, propane, and propylene.

Storage tank means a vessel (excluding sumps) that is designed to contain an accumulation of crude oil, condensate, intermediate hydrocarbon liquids, or produced water and that is constructed entirely of non-earthen materials (e.g., wood, concrete, steel, plastic) that provide structural support.

Sulfur recovery plant means all process units which recover sulfur or produce sulfuric acid from hydrogen sulfide (H₂S) and/or sulfur dioxide (SO₂) from a common source of sour gas at a petroleum refinery. The sulfur recovery plant also includes sulfur pits used to store the recovered sulfur product, but it does not include secondary sulfur storage vessels or loading facilities downstream of the sulfur pits. For example, a Claus sulfur recovery plant includes: Reactor furnace and waste heat boiler, catalytic reactors, sulfur pits, and, if present, oxidation or reduction
Environmental Protection Agency § 98.6

control systems, or incinerator, thermal oxidizer, or similar combustion device. Multiple sulfur recovery units are a single sulfur recovery plant only when the units share the same source of sour gas. Sulfur recovery units that receive source gas from completely segregated sour gas treatment systems are separate sulfur recovery plants.

Supplemental fuel means a fuel burned within a petrochemical process that is not produced within the process itself.

Supplier means a producer, importer, or exporter of a fossil fuel or an industrial greenhouse gas.

Sweet gas is natural gas with low concentrations of hydrogen sulfide (H\textsubscript{2}S) and/or carbon dioxide (CO\textsubscript{2}) that does not require (or has already had) acid gas treatment to meet pipeline corrosion-prevention specifications for transmission and distribution.

Taconite iron ore processing means an industrial process that separates and concentrates iron ore from taconite, a low grade iron ore, and heats the taconite in an indurating furnace to produce taconite pellets that are used as the primary feed material for the production of iron in blast furnaces at integrated iron and steel plants.

TAME means tertiary amyl methyl ether, \((\text{CH}_3)_2\text{C}_2\text{H}_5\text{COCH}_3\).

Trace concentrations means concentrations of less than 0.1 percent by mass of the process stream.

Transform means to use and entirely consume (except for trace concentrations) nitrous oxide or fluorinated GHGs in the manufacturing of other chemicals for commercial purposes. Transformation does not include burning of nitrous oxide.

Transshipment means the continuous shipment of a fluorinated GHG from a foreign state of origin through the United States or its territories to a second foreign state of final destination, as long as the shipment does not enter into United States jurisdiction. A transshipment, as it moves through the United States or its territories, cannot be re-packaged, sorted or otherwise changed in condition.

Trona means the raw material (mineral) used to manufacture soda ash; hydrated sodium bicarbonate carbonate (e.g., \(\text{Na}_2\text{CO}_3\cdot\text{NaHCO}_3\cdot2\text{H}_2\text{O}\)).

Ultimate analysis means the determination of the percentages of carbon, hydrogen, nitrogen, sulfur, and chlorine and (by difference) oxygen in the gaseous products and ash after the complete combustion of a sample of an organic material.

Unfinished oils are all oils requiring further processing, except those requiring only mechanical blending.

United States means the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, American Samoa, the Virgin Islands, Guam, and any other Commonwealth, territory or possession of the United States, as well as the territorial sea as defined by Presidential Proclamation No. 5928.

United States parent company(s) means the highest-level United States company(s) with an ownership interest in the reporting entity as of December 31 of the year for which data are being reported.

Unstabilized crude oil means, for the purposes of this part, crude oil that is pumped from the well to a pipeline or pressurized storage vessel for transport to the refinery without intermediate storage in a storage tank at atmospheric pressures. Unstabilized crude oil is characterized by having a true vapor pressure of 5 pounds per square inch absolute (psia) or greater.

Used oil means a petroleum-derived or synthetically-derived oil whose physical properties have changed as a result of handling or use, such that the oil cannot be used for its original purpose. Used oil consists primarily of automotive oils (e.g., used motor oil, transmission oil, hydraulic fluids, brake fluid, etc.) and industrial oils (e.g., industrial engine oils, metalworking oils, process oils, industrial grease, etc).

Valve means any device for halting or regulating the flow of a liquid or gas through a passage, pipeline, inlet, outlet, or orifice; including, but not limited to, gate, globe, plug, ball, butterfly and needle valves.

Vapor recovery system means any equipment located at the source of potential gas emissions to the atmosphere or to a flare, that is composed of piping, connections, and, if necessary, flow-inducing devices, and that is used
for routing the gas back into the process as a product and/or fuel.

**Vaporization unit** means a process unit that performs controlled heat input to vaporize LNG to supply transmission and distribution pipelines or consumers with natural gas.

**Vegetable oil** means oils extracted from vegetation that are generally used as a feedstock in making biodiesel.

**Vaporization unit** means a process unit that performs controlled heat input to vaporize LNG to supply transmission and distribution pipelines or consumers with natural gas.

**Vaporization unit** means a process unit that performs controlled heat input to vaporize LNG to supply transmission and distribution pipelines or consumers with natural gas.

**Ventilation well or shaft** means a well or shaft employed at an underground coal mine to serve as the outlet or conduit to move air from the ventilation system out of the mine.

**Ventilation system** means a system that is used to control the concentration of methane and other gases within mine working areas through mine ventilation, rather than a mine degasification system. A ventilation system consists of fans that move air through the mine workings to dilute methane concentrations. This includes all ventilation shafts and wells at the underground coal mine.

**Volatile solids** are the organic material in livestock manure and consist of both biodegradable and non-biodegradable fractions.

**Waelz kiln** means an inclined rotary kiln in which zinc-containing materials are charged together with a carbon reducing agent (e.g., petroleum coke, metallurgical coke, or anthracite coal).

**Waxes** means a solid or semi-solid material at 77 °F consisting of a mixture of hydrocarbons obtained or derived from petroleum fractions, or through a Fischer-Tropsch type process, in which the straight chained paraffin series predominates. This includes all marketable wax, whether crude or refined, with a congealing point between 80 (or 85) and 240 °F and a maximum oil content of 50 weight percent.

**Well completions** means the process that allows for the flow of petroleum or natural gas from newly drilled wells to expel drilling and reservoir fluids and test the reservoir flow characteristics, steps which may vent produced gas to the atmosphere via an open pit or tank. Well completion also involves connecting the well bore to the reservoir, which may include treating the formation or installing tubing, packer(s), or lifting equipment, steps that do not significantly vent natural gas to the atmosphere. This process may also include high-rate flowback of injected gas, water, oil, and proppant used to fracture or re-fracture and prop open new fractures in existing lower permeability gas reservoirs, steps that may vent large quantities of produced gas to the atmosphere.

**Well workover** means the process(es) of performing one or more of a variety of remedial operations on producing petroleum and natural gas wells to try to increase production. This process also includes high-rate flowback of injected gas, water, oil, and proppant used to re-fracture and prop-open new fractures in existing low permeability gas reservoirs, steps that may vent large quantities of produced gas to the atmosphere.

**Wellhead** means the piping, casing, tubing and connected valves protruding above the earth’s surface for an oil and/or natural gas well. The wellhead ends where the flow line connects to a wellhead valve. Wellhead equipment includes all equipment, permanent and portable, located on the improved land area (i.e. well pad) surrounding one or multiple wellheads.

**Wet natural gas** means natural gas in which water vapor exceeds the concentration specified for commercially saleable natural gas delivered from transmission and distribution pipelines. This input stream to a natural gas dehydrator is referred to as “wet gas.”

**Wood residuals** means materials recovered from three principal sources: Municipal solid waste (MSW); construction and demolition debris; and primary timber processing. Wood residuals recovered from MSW include wooden furniture, cabinets, pallets and containers, scrap lumber (from sources other than construction and demolition activities), and urban tree and landscape residues. Wood residuals from construction and demolition debris originate from the construction, repair, remodeling and demolition of houses and non-residential structures. Wood residuals from primary timber processing include bark, sawmill slabs and edgings, sawdust, and peeler log
cores. Other sources of wood residuals include, but are not limited to, railroad ties, telephone and utility poles, pier and dock timbers, wastewater process sludge from paper mills, trim, sander dust, and sawdust from wood products manufacturing (including resinated wood product residuals), and logging residues.

Wool fiberglass means fibrous glass of random texture, including fiberglass insulation, and other products listed in NAICS 327993.

Working capacity, for the purposes of subpart TT of this part, means the maximum volume or mass of waste that is actually placed in the landfill from an individual or representative type of container (such as a tank, truck, or roll-off bin) used to convey wastes to the landfill, taking into account that the container may not be able to 100 percent filled and/or 100 percent emptied for each load.

You means an owner or operator subject to Part 98.

Zinc smelters means a facility engaged in the production of zinc metal, zinc oxide, or zinc alloy products from zinc sulfide ore concentrates, zinc calcine, or zinc-bearing scrap and recycled materials through the use of pyrometallurgical techniques involving the reduction and volatilization of zinc-bearing feed materials charged to a furnace.

§ 98.7 What standardized methods are incorporated by reference into this part?

The materials listed in this section are incorporated by reference in the corresponding sections noted. These incorporations by reference were approved by the Director of Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of approval, and a notice of any change in the materials will be published in the FEDERAL REGISTER. The materials are available for purchase at the corresponding address in this section. The materials are available for inspection at the EPA Docket Center, Public Reading Room, EPA West Building, Room 3334, 1301 Constitution Avenue, NW., Washington, DC, phone (202) 566-1744 and at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-0030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(a) [Reserved]

(b) [Reserved]

(c) The following material is available for purchase from the ASM International, 9639 Kinsman Road, Materials Park, OH 44073, (440) 338-5151, http://www.asminternational.org.

(1) ASM CS–104 UNS No. G10460—Alloy Digest April 1985 (Carbon Steel of Medium Carbon Content), incorporation by reference (IBR) approved for § 98.174(b).

(2) [Reserved]

(d) The following material is available for purchase from the American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016–5996, (212) 843-2763, http://www.asme.org.

(1) ASME MFC–3M–2004 Measurement of Fluid Flow in Pipes Using Orifice, Nozzle, and Venturi, incorporation by reference (IBR) approved for § 98.124(m)(1), § 98.324(e), § 98.354(d), § 98.354(h), § 98.364(c) and § 98.364(e).

(2) ASME MFC–4M–1986 (Reaffirmed 1997) Measurement of Gas Flow by Turbine Meters, IBR approved for § 98.124(m)(2), § 98.324(e), § 98.344(c), § 98.354(h), and § 98.364(e).


(4) ASME MFC–6M–1998 Measurement of Fluid Flow in Pipes Using Vortex Flowmeters, IBR approved for § 98.124(m)(4), § 98.324(e), § 98.344(c), § 98.354(h), and § 98.364(e).


(7) ASME MFC-11M–2006 Measurement of Fluid Flow by Means of Coriolis Mass Flowmeters, IBR approved for §98.124(m)(7), §98.324(e), §98.344(c), and §98.354(h).

(8) ASME MFC–14M–2003 Measurement of Fluid Flow Using Small Bore Precision Orifice Meters, IBR approved for §98.124(m)(8), §98.324(e), §98.344(c), §98.354(h), and §98.364(e).


(e) The following material is available for purchase from the American Society for Testing and Material (ASTM), 100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428–B2959, (800) 262–1373, http://www.astm.org.

(1) ASTM C25–06 Standard Test Method for Chemical Analysis of Limestone, Quicklime, and Hydrated Lime, incorporation by reference (IBR) approved for §98.114(b), §98.174(b), §98.184(b), §98.194(c), §98.194(h), and §98.364(e).

(2) ASTM C114–09 Standard Test Methods for Chemical Analysis of Hydraulic Cement, IBR approved for §98.114(b), §98.174(b), §98.184(b), §98.194(c), and §98.334(b).

(3) ASTM D235–02 (Reapproved 2007) Standard Specification for Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent), IBR approved for §98.84(a), §98.84(b), and §98.84(c).


(5) ASTM D385–05 Standard Classification of Coals by Rank, IBR approved for §98.6.


(7) [Reserved]


(10) ASTM D1945–03 Standard Test Method for Analysis of Natural Gas by Gas Chromatography, IBR approved for §98.74(c), §98.164(b), §98.214(b), §98.254(d), §98.324(d), §98.344(g), and §98.344(h).


(12) ASTM D2013–07 Standard Practice for Preparing Coal Samples for Analysis, IBR approved for §98.164(b).


(15) ASTM D2503–92 (Reapproved 2007) Standard Test Method for Relative Molecular Mass (Molecular Weight) of Hydrocarbons by Thermoelectric Measurement of Vapor Pressure, IBR approved for §98.74(c) and §98.254(d)(6).

(16) ASTM D2505–88 (Reapproved 2004)e1 Standard Test Method for Ethylene, Other Hydrocarbons, and Carbon Dioxide in High-Purity Ethylene by Gas Chromatography, IBR approved for §98.244(b).


(18) ASTM D3176–89 (Reapproved 2002) Standard Practice for Ultimate Analysis of Coal and Coke, IBR approved for §98.74(c), §98.164(b), §98.214(b), §98.254(d), §98.284(c), §98.284(d), §98.314(c), §98.314(d), and §98.314(f).

the n-d-M Method, IBR approved for §98.74(c) and §98.164(b).


(26) ASTM D5291–02 (Reapproved 2007) Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants, IBR approved for §98.74(c), §98.164(b), §98.244(b), and §98.254(i).

(27) ASTM D5373–08 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal, IBR approved for §98.74(c), §98.164(b), §98.244(b), §98.254(i).

(28) ASTM D6751–08 Standard Practice for Mechanical Sampling of Stationary Coal from Railroad Cars, Barges, Trucks, or Stockpiles, IBR approved for §98.164(b).


(30) ASTM D6348–03 Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, IBR approved for §98.54(b), §98.124(e)(2), §98.224(b), and §98.414(n).

(31) ASTM D6609–08 Standard Guide for Part-Stream Sampling of Coal, IBR approved for §98.164(b).

(32) ASTM D6751–08 Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels, IBR approved for §98.6.

(33) ASTM D6866–08 Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples Using Radiocarbon Analysis, IBR approved for §98.34(d), §98.34(e), and §98.36(e).

(34) ASTM D6863–04 Standard Practice for Manual Sampling of Stationary Coal from Railroad Cars, Barges, Trucks, or Stockpiles, IBR approved for §98.164(b).

(35) ASTM D7430–08æ1 Standard Practice for Mechanical Sampling of Coal, IBR approved for §98.164(b).

(36) ASTM D7459–08 Standard Practice for Collection of Integrated Samples for the Speciation of Biomass (Biogenic) and Fossil-Derived Carbon Dioxide Emitted from Stationary Emissions Sources, IBR approved for §98.34(d), §98.34(e), and §98.36(e).

(37) ASTM E359–00 (Reapproved 2005)æ1 Standard Test Methods for Analysis of Soda Ash (Sodium Carbonate), IBR approved for §98.294(a) and §98.294(b).

(38) ASTM E1019–08 Standard Test Methods for Determination of Carbon, Sulfur, Nitrogen, and Oxygen in Steel, Iron, Nickel, and Cobalt Alloys by Various Combustion and Fusion Techniques, IBR approved for §98.34(d), §98.34(e), and §98.36(e).

(39) [Reserved]


(41) ASTM E1941–04 Standard Test Method for Determination of Carbon in Refractory and Reactive Metals and Their Alloys, IBR approved for §98.114(b), §98.184(b), §98.334(b).

(42) ASTM UOP539–97 Refinery Gas Analysis by Gas Chromatography, IBR approved for §98.164(b), §98.244(b), §98.254(d), §98.324(d), §98.344(b), and §98.354(g).

§ 98.7 40 CFR Ch. I (7–1–11 Edition)
the Parshall Flume, approved June 15, 2007, IBR approved for § 98.354(d).
(f) The following material is available for purchase from the Gas Processors Association (GPA), 6526 East 60th Street, Tulsa, Oklahoma 74115, (918) 493–3872, http://www.gasprocessors.com.
(1) [Reserved]
(2) GPA 2261–00 Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography, IBR approved for § 98.164(b), § 98.254(d), § 98.344(b), and § 98.354(g).
(g) The following material is available for purchase from the International Standards Organization (ISO), 1 ch. de la Voie-Creuse, Case postale 56, CH-1211 Geneva 20, Switzerland, +41 22 749 01 11, http://www.iso.org/iso/home.htm.
(3) [Reserved]
(b) The following material is available for purchase from the National Lime Association (NLA), 200 North Glebe Road, Suite 800, Arlington, Virginia 22203, (703) 243–5463, http://www.lime.org.
(1) CO2 Emissions Calculation Protocol for the Lime Industry—English Units Version, February 5, 2008 Revision—National Lime Association, incorporation by reference (IBR) approved for § 98.194(c) and § 98.194(e).
(2) [Reserved]
(i) The following material is available for purchase from the National Institute of Standards and Technology (NIST), 100 Bureau Drive, Stop 1070, Gaithersburg, MD 20899–1070, (800) 877–8339, http://www.nist.gov/index.html.
(1) Specifications, Tolerances, and Other Technical Requirements For Weighing and Measuring Devices, NIST Handbook 44 (2009), incorporation by reference (IBR) approved for § 98.244(b), § 98.254(h), and § 98.344(a).
(2) [Reserved]
(1) T650 om-05 Solids Content of Black Liquor, TAPPI, incorporation by reference (IBR) approved for § 98.276(c) and § 98.277(d).
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(2) T84 om-06 Gross Heating Value of Black Liquor, TAPPI, incorporation by reference (IBR) approved for § 98.274(b).

(k) The following material is available for purchase from Standard Methods, at http://www.standardmethods.org, (877) 574–1233; or, through a joint publication agreement from the American Public Health Association (APHA), P.O. Box 933019, Atlanta, GA 31193–3019, (888) 320–APHA (2742), http://www.apha.org/publications/pubscontact/.

(1) Method 2540G Total, Fixed, and Volatile Solids in Solid and Semisolid Samples, IBR approved for § 98.464(b).

(2) [Reserved]


(2) [Reserved]

(m) The following material is available from the U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460, (202) 272–0167, http://www.epa.gov.


§ 98.8  What are the compliance and enforcement provisions of this part?

Any violation of any requirement of this part shall be a violation of the Clean Air Act, including section 114 (42 U.S.C. 7414). A violation includes but is not limited to failure to report GHG emissions, failure to collect data needed to calculate GHG emissions, failure to continuously monitor and test as required, failure to retain records needed to verify the amount of GHG emissions, and failure to calculate GHG emissions following the methodologies specified in this part. Each day of a violation constitutes a separate violation.
§ 98.9 Addresses.

All requests, notifications, and communications to the Administrator pursuant to this part, other than submittal of the annual GHG report, shall be submitted to the following address:

Environmental Protection Agency
Pt. 98, Subpt. A, Table A–1

(a) For U.S. mail. Director, Climate Change Division, 1200 Pennsylvania Ave., NW., Mail Code: 6207J, Washington, DC 20460.

(b) For package deliveries. Director, Climate Change Division, 1310 L St. NW., Washington, DC 20005.

Table A–1 to Subpart A of Part 98—Global Warming Potentials

![Table A–1 to Subpart A of Part 98—Global Warming Potentials](image)
### TABLE A–2 TO SUBPART A OF PART 98—UNITS OF MEASURE CONVERSIONS

<table>
<thead>
<tr>
<th>To convert from</th>
<th>To</th>
<th>Multiply by</th>
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<tr>
<td>Cubic meters (m^3)</td>
<td>Cubic feet (ft^3)</td>
<td>35.3147</td>
</tr>
<tr>
<td>Metric tons</td>
<td>Cubic meters (m^3)</td>
<td>0.028317</td>
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<tr>
<td>Gallons (liquid, US)</td>
<td>Liters (l)</td>
<td>3.78541</td>
</tr>
<tr>
<td>Liters (l)</td>
<td>Gallons (liquid, US)</td>
<td>0.26417</td>
</tr>
<tr>
<td>Barrels of Liquid Fuel (bbl)</td>
<td>Cubic meters (m^3)</td>
<td>158.96</td>
</tr>
<tr>
<td>Cubic meters (m^3)</td>
<td>Barrels of Liquid Fuel (bbl)</td>
<td>0.06289</td>
</tr>
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<td>Barrels of Liquid Fuel (bbl)</td>
<td>0.003810</td>
</tr>
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<td>Gallons (liquid, US)</td>
<td>Cubic meters (m^3)</td>
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</tr>
<tr>
<td>Liters (l)</td>
<td>Cubic meters (m^3)</td>
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<td>Feet (ft)</td>
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</tr>
<tr>
<td>Miles (mi)</td>
<td>Kilometers (km)</td>
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</tr>
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<td>Kilometers (km)</td>
<td>Miles (mi)</td>
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<td>Acres</td>
<td>2.29568 x 10^-5</td>
</tr>
<tr>
<td>Acres</td>
<td>Square feet (ft^2)</td>
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<tr>
<td>Square meters (m^2)</td>
<td>Square kilometers (km^2)</td>
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<td>Degrees Fahrenheit (°F)</td>
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<tr>
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<td>Degrees Celsius (°C)</td>
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<tr>
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<td>Degrees Rankine (°R)</td>
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<tr>
<td>Joules</td>
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<tr>
<td>BTU</td>
<td>Joules</td>
<td>1 x 10^9</td>
</tr>
<tr>
<td>Pascals (Pa)</td>
<td>Inches of Mercury (in Hg)</td>
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</tr>
<tr>
<td>Inches of Mercury (in Hg)</td>
<td>Pascals (Pa)</td>
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<td>Pounds per square inch (psi)</td>
<td>Inches of Mercury (in Hg)</td>
<td>2.03625</td>
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</table>

### TABLE A–3 TO SUBPART A OF PART 98—SOURCE CATEGORY LIST FOR §98.2(a)(1)

Source Categories: Applicable in 2010 and Future Years

- Electricity generation units that report CO₂ mass emissions year round through 40 CFR part 75 (subpart D).
- Adipic acid production (subpart E).
- Aluminum production (subpart F).
- Ammonia manufacturing (subpart G).
- Cement production (subpart H).
- HCFC–22 production (subpart O).
- HFC–23 destruction processes that are not collocated with a HCFC–22 production facility and that destroy more than 2.14 metric tons of HFC–23 per year (subpart O).
Environmental Protection Agency
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Lime manufacturing (subpart S).
Nitric acid production (subpart V).
Petrochemical production (subpart X).
Petroleum refineries (subpart Y).
Phosphoric acid production (subpart Z).
Silicon carbide production (subpart BB).
Soda ash production (subpart CC).
Titanium dioxide production (subpart EE).
Municipal solid waste landfills that generate CH\(_4\) in amounts equivalent to 25,000 metric tons CO\(_2\)-e or more per year, as determined according to subpart HH of this part.
Manure management systems with combined CH\(_4\) and N\(_2\)O emissions in amounts equivalent to 25,000 metric tons CO\(_2\)-e or more per year, as determined according to subpart JJ of this part.

Additional Source Categories Applicable in 2011 and Future Years
Electrical transmission and distribution equipment use (subpart DD).
Underground coal mines that are subject to quarterly or more frequent sampling by Mine Safety and Health Administration (MSHA) of ventilation systems (subpart FF).
Geologic sequestration of carbon dioxide (subpart RR).
Electrical transmission and distribution equipment manufacture or refurbishment (subpart SS).
Injection of carbon dioxide (subpart UU).

* Source categories are defined in each applicable subpart.


Table A–4 to Subpart A of Part 98—Source Category List for §98.2(a)(2)

Source Categories Applicable in 2010 and Future Years

- Ferroalloy production (subpart K).
- Glass production (subpart N).
- Hydrogen production (subpart P).
- Iron and steel production (subpart Q).
- Lead production (subpart R).
- Pulp and paper manufacturing (subpart AA).
- Zinc production (subpart GG).

Additional Source Categories Applicable in 2011 and Future Years

- Electronics manufacturing (subpart I).
- Magnesium production (subpart T).
- Petroleum and Natural Gas Systems (subpart W).
- Industrial wastewater treatment (subpart II).
- Industrial waste landfills (subpart TT).

* Source categories are defined in each applicable subpart.


Table A–5 to Subpart A of Part 98—Supplier Category List for §98.2(a)(4)

Supplier Categories Applicable in 2010 and Future Years

- Coal-to-liquids suppliers (subpart LL):
  - All producers of coal-to-liquid products.
  - Importers of an annual quantity of coal-to-liquid products that is equivalent to 25,000 metric tons CO\(_2\)-e or more.
  - Exporters of an annual quantity of coal-to-liquid products that is equivalent to 25,000 metric tons CO\(_2\)-e or more.

- Petroleum product suppliers (subpart MM):
  - All petroleum refineries that distill crude oil.
  - Importers of an annual quantity of petroleum products that is equivalent to 25,000 metric tons CO\(_2\)-e or more.
  - Exporters of an annual quantity of petroleum products that is equivalent to 25,000 metric tons CO\(_2\)-e or more.

- Natural gas and natural gas liquids suppliers (subpart NN):
  - All fractionators.
  - Local natural gas distribution companies that deliver 460,000 thousand standard cubic feet or more of natural gas per year.

- Industrial greenhouse gas suppliers (subpart OO):
  - All producers of industrial greenhouse gases.
(B) Importers of industrial greenhouse gases with annual bulk imports of N₂O, fluorinated GHG, and CO₂ that in combination are equivalent to 25,000 metric tons CO₂e or more.
(C) Exporters of industrial greenhouse gases with annual bulk exports of N₂O, fluorinated GHG, and CO₂ that in combination are equivalent to 25,000 metric tons CO₂e or more.

Carbon dioxide suppliers (subpart PP):
(A) All producers of CO₂.
(B) Importers of CO₂ with annual bulk imports of N₂O, fluorinated GHG, and CO₂ that in combination are equivalent to 25,000 metric tons CO₂e or more.
(C) Exporters of CO₂ with annual bulk exports of N₂O, fluorinated GHG, and CO₂ that in combination are equivalent to 25,000 metric tons CO₂e or more.

Additional Supplier Categories Applicable * in 2011 and Future Years
Importers and exporters of fluorinated greenhouse gases contained in pre-charged equipment or closed-cell foams (subpart QQ):
(A) Importers of an annual quantity of fluorinated greenhouse gases contained in pre-charged equipment or closed-cell foams that is equivalent to 25,000 metric tons CO₂e or more.
(B) Exporters of an annual quantity of fluorinated greenhouse gases contained in pre-charged equipment or closed-cell foams that is equivalent to 25,000 metric tons CO₂e or more.

* Suppliers are defined in each applicable subpart.

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(B) Importers of industrial greenhouse gases with annual bulk imports of N₂O, fluorinated GHG, and CO₂ that in combination are equivalent to 25,000 metric tons CO₂e or more.
(C) Exporters of industrial greenhouse gases with annual bulk exports of N₂O, fluorinated GHG, and CO₂ that in combination are equivalent to 25,000 metric tons CO₂e or more.

Carbon dioxide suppliers (subpart PP):
(A) All producers of CO₂.
(B) Importers of CO₂ with annual bulk imports of N₂O, fluorinated GHG, and CO₂ that in combination are equivalent to 25,000 metric tons CO₂e or more.
(C) Exporters of CO₂ with annual bulk exports of N₂O, fluorinated GHG, and CO₂ that in combination are equivalent to 25,000 metric tons CO₂e or more.

Additional Supplier Categories Applicable * in 2011 and Future Years
Importers and exporters of fluorinated greenhouse gases contained in pre-charged equipment or closed-cell foams (subpart QQ):
(A) Importers of an annual quantity of fluorinated greenhouse gases contained in pre-charged equipment or closed-cell foams that is equivalent to 25,000 metric tons CO₂e or more.
(B) Exporters of an annual quantity of fluorinated greenhouse gases contained in pre-charged equipment or closed-cell foams that is equivalent to 25,000 metric tons CO₂e or more.

* Suppliers are defined in each applicable subpart.

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**Table A–6 to Subpart A of Part 98—Data Elements That Are Inputs to Emission Equations and for Which the Reporting Deadline Is Changed to September 30, 2011**

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<tr>
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<td>All. Only estimate of the heat input from each type of fuel listed in Table C–2.</td>
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<tr>
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</tr>
<tr>
<td>C</td>
<td>98.36(2)(ii)(i)(G)</td>
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</tr>
<tr>
<td>C</td>
<td>98.36(2)(ii)(i)(I)</td>
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</tr>
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</tr>
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</tr>
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<td>98.66(f)(1)</td>
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<td>98.246(b)(5)(ii)</td>
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</tr>
<tr>
<td>X</td>
<td>98.246(b)(5)(iv)</td>
<td>All.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(e)(6)</td>
<td>Only molar volume conversion factor for each flare.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(e)(7)</td>
<td>Only molar volume conversion factor for each flare.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(e)(7)(ii)</td>
<td>All.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(e)(9)</td>
<td>Only annual volume of flare gas combusted, annual average higher heating value of the flare gas, volume of gas flared, average molecular weight, carbon content of the flare, and molar volume conversion factor if using Eq. Y–3.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(e)(10)</td>
<td>Only coke burn-off factor, annual throughput of unit, and average carbon content of coke.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(f)(7)</td>
<td>Only the unit-specific CH₄ emission factor, activity data for calculating emissions, and site-specific emissions factor.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(f)(10)</td>
<td>Only coke burn-off factor, annual throughput of unit, and average carbon content of coke.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(f)(11)</td>
<td>Only units of measure for the unit-specific CH₄ emission factor, activity data for calculating emissions, and unit-specific emission factor for CH₄.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(f)(12)</td>
<td>Only unit-specific emission factor for N₂O, units of measure for the unit-specific N₂O emission factor, and activity data for calculating emissions.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(f)(13)</td>
<td>Only average coke burn-off quantity per cycle or measurement period, and average carbon content of coke.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(h)(4)</td>
<td>All.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(h)(5)</td>
<td>Only value of the correction, annual volume of recycled tail gas, and annual average mole fraction of carbon in the tail gas (if used to calculate recycling correction factor).</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(i)(5)</td>
<td>Only annual mass of green coke fed, carbon content of green coke fed, annual mass of marketable coke produced, carbon content of marketable coke produced, and annual mass of coke dust removed from the process.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(i)(7)</td>
<td>Only the unit-specific CH₄ emission factor, units of measure for unit-specific CH₄ emission factor, and activity data for calculating emissions.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(i)(8)</td>
<td>Only units of measure for the unit-specific factor, activity data used for calculating emissions, and site-specific emissions factor.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(j)(2)</td>
<td>All.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(j)(5)</td>
<td>Only CO₂ emission factor.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(j)(6)</td>
<td>Only CH₄ emission factor.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(j)(7)</td>
<td>Only carbon emission factor.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(j)(8)</td>
<td>Only CO₂ emission factor and carbon emission factor.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(j)(9)</td>
<td>Only CH₄ emission factor.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(k)(3)</td>
<td>Only dimensions of coke drum or vessel, typical gauge pressure of the coking drum, typical void fraction of coke drum or vessel, annual number of coke-cutting cycles of coke drum or vessel, and molar volume conversion factor for each coke drum or vessel.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(k)(4)</td>
<td>Only height and diameter of the coke drums, cumulative number of vessel openings for all delayed coking drums, typical venting pressure, void fraction, mole fraction of methane in coking gas.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(k)(5)</td>
<td>Only molar volume conversion factor.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(m)(3)</td>
<td>Only total quantity of crude oil plus the quantity of intermediate products received from off-site, CH₄ emission factor used, and molar volume conversion factor.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(n)(3)</td>
<td>All (if used in Equation Y–21 to calculate emissions from equipment leaks).</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(o)(2)(ii)</td>
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</tr>
<tr>
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<td>98.256(o)(4)(ii)</td>
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<td>98.256(o)(4)(v)</td>
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</tr>
<tr>
<td>Y</td>
<td>98.256(o)(4)(vii)</td>
<td>Only tank-specific methane composition data and gas generation rate data.</td>
</tr>
<tr>
<td>Y</td>
<td>98.256(p)(2)</td>
<td>Only quantity of materials loaded that have an equilibrium vapor-phase concentration of CH₄ of 0.5 volume percent or greater.</td>
</tr>
<tr>
<td>Z</td>
<td>98.266(f)(5)</td>
<td>All.</td>
</tr>
<tr>
<td>Z</td>
<td>98.266(f)(6)</td>
<td>All.</td>
</tr>
<tr>
<td>AA</td>
<td>98.276(b)</td>
<td>All.</td>
</tr>
<tr>
<td>AA</td>
<td>98.276(c)</td>
<td>Only annual mass of the spent liquor solids combusted.</td>
</tr>
<tr>
<td>AA</td>
<td>98.276(d)</td>
<td>All.</td>
</tr>
<tr>
<td>AA</td>
<td>98.276(e)</td>
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<tr>
<th>Subpart</th>
<th>Rule Citation (40 CFR part 98)</th>
<th>Specific Data Elements for Which Reporting Date is Changed (&quot;All&quot; means that the date is changed for all data elements in the cited paragraph)</th>
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<td>AA</td>
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<td>AA</td>
<td>98.276(g)</td>
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<td>AA</td>
<td>98.276(h)</td>
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<td>98.276(i)</td>
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<td>BB</td>
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<td>BB</td>
<td>98.286(b)(6)</td>
<td>All.</td>
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<td>CC</td>
<td>98.296(b)(5)</td>
<td>Only monthly production of soda ash for each manufacturing line (for facilities using Equation CC-2).</td>
</tr>
<tr>
<td>CC</td>
<td>98.296(b)(6)</td>
<td>Only monthly production of soda ash for each manufacturing line (for facilities using Equation CC-2).</td>
</tr>
<tr>
<td>CC</td>
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</tr>
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</tr>
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<td>98.296(b)(10)(ii)</td>
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<td>98.296(b)(10)(v)</td>
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<td>98.296(b)(10)(x)</td>
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<td>EE</td>
<td>98.316(b)(6)</td>
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<tr>
<td>EE</td>
<td>98.316(b)(9)</td>
<td>All.</td>
</tr>
<tr>
<td>GG</td>
<td>98.336(b)(8)</td>
<td>All.</td>
</tr>
<tr>
<td>GG</td>
<td>98.336(b)(7)</td>
<td>All.</td>
</tr>
<tr>
<td>GH</td>
<td>98.346(a)</td>
<td>Only year in which landfill first accepted waste, last year the landfill accepted waste, capacity of the landfill, and waste disposal quantity for each year of landfilling.</td>
</tr>
<tr>
<td>HH</td>
<td>98.346(b)</td>
<td>Only quantity of waste determined using the methods in §98.343(a)(3)(ii), quantity of waste determined using the methods in §98.343(a)(3)(ii), population served by the landfill for each year, and the value of landfill capacity (LFC) used in the calculation.</td>
</tr>
<tr>
<td>HH</td>
<td>98.346(c)</td>
<td>All.</td>
</tr>
<tr>
<td>HH</td>
<td>98.346(d)(1)</td>
<td>Only degradable organic carbon (DOC) value, methane correction factor (MCF) values, and fraction of DOC dissimilated (DOCF) values.</td>
</tr>
<tr>
<td>HH</td>
<td>98.346(d)(2)</td>
<td>All.</td>
</tr>
<tr>
<td>HH</td>
<td>98.346(e)</td>
<td>Only fraction of CH₄ in landfill gas.</td>
</tr>
<tr>
<td>HH</td>
<td>98.346(f)</td>
<td>Only surface area associated with each cover type.</td>
</tr>
<tr>
<td>HH</td>
<td>98.346(g)</td>
<td>All.</td>
</tr>
<tr>
<td>HH</td>
<td>98.346h(i)(5)</td>
<td>Only annual operating hours for the primary destruction device, annual operating hours for the backup destruction device, destruction efficiency for the primary destruction device, and destruction efficiency for the backup destruction device.</td>
</tr>
<tr>
<td>HH</td>
<td>98.346h(i)(6)</td>
<td>All.</td>
</tr>
<tr>
<td>HH</td>
<td>98.346h(i)(7)</td>
<td>Only surface area specified in Table HH–3, estimated gas collection system efficiency, and annual operating hours of the gas collection system.</td>
</tr>
<tr>
<td>HH</td>
<td>98.346h(i)(9)</td>
<td>Only CH₄ generation value.</td>
</tr>
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</table>

(75 FR 81344, Dec. 27, 2010)

Subpart B [Reserved]

Subpart C—General Stationary Fuel Combustion Sources

§ 98.30 Definition of the source category.

(a) Stationary fuel combustion sources are devices that combust solid, liquid, or gaseous fuel, generally for the purposes of producing electricity, generating steam, or providing useful heat or energy for industrial, commercial, or institutional use, or reducing the volume of waste by removing combustible matter. Stationary fuel combustion sources include, but are not limited to, boilers, simple and combined-cycle combustion turbines, engines, incinerators, and process heaters.

(b) This source category does not include:

1. Portable equipment, as defined in §98.6.

2. Emergency generators and emergency equipment, as defined in §98.6.

3. Irrigation pumps at agricultural operations.

4. Flares, unless otherwise required by provisions of another subpart of this
(5) Electricity generating units that are subject to subpart D of this part.

(c) For a unit that combusts hazardous waste (as defined in §261.3 of this chapter), reporting of GHG emissions is not required unless either of the following conditions apply:

(1) Continuous emission monitors (CEMS) are used to quantify CO₂ mass emissions.

(2) Any fuel listed in Table C–1 of this subpart is also combusted in the unit. In this case, report GHG emissions from combustion of all fuels listed in Table C–1 of this subpart.

(d) You are not required to report GHG emissions from pilot lights. A pilot light is a small auxiliary flame that ignites the burner of a combustion device when the control valve opens.


§ 98.31 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains one or more stationary fuel combustion sources and the facility meets the applicability requirements of either §§98.2(a)(1), 98.2(a)(2), or 98.2(a)(3).

§ 98.32 GHGs to report.

You must report CO₂, CH₄, and N₂O mass emissions from each stationary fuel combustion unit, except as otherwise indicated in this subpart.

[75 FR 79140, Dec. 17, 2010]

\[ CO_2 = 1 \times 10^{-3} \times Fuel \times HHV \times EF \]

(\text{Eq. C-1})

Where:

\( CO_2 \) = Annual CO₂ mass emissions for the specific fuel type (metric tons).

Fuel = Mass or volume of fuel combusted per year, from company records as defined in §98.6 (express mass in short tons for solid fuel, volume in standard cubic feet for gaseous fuel, and volume in gallons for liquid fuel).

HHV = Default high heat value of the fuel, from Table C–1 of this subpart (mmBtu per mass or mmBtu per volume, as applicable).

EF = Fuel-specific default CO₂ emission factor, from Table C–1 of this subpart (kg CO₂/mmBtu).

1 \times 10^{-3} = Conversion factor from kilograms to metric tons.

(ii) If natural gas consumption is obtained from billing records and fuel usage is expressed in therms, use Equation C–1a.

[75 FR 79140, Dec. 17, 2010]
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\[ CO_2 = 1 \times 10^{-3} \left[ 0.1 \times \text{Gas} \times \text{EF} \right] \]  
(Eq. C-1a)

Where:
- \( CO_2 \) = Annual \( CO_2 \) mass emissions from natural gas combustion (metric tons).
- \( \text{Gas} \) = Annual natural gas usage, from billing records (therms).
- \( \text{EF} \) = Fuel-specific default \( CO_2 \) emission factor for natural gas, from Table C–1 of this subpart (kg \( CO_2 \)/mmBtu).

\( 0.1 \) = Conversion factor from therms to mmBtu.
\( 1 \times 10^{-3} \) = Conversion factor from kilograms to metric tons.

(iii) If natural gas consumption is obtained from billing records and fuel usage is expressed in mmBtu, use Equation C-1b.

\[ CO_2 = 1 \times 10^{-3} \times \text{Gas} \times \text{EF} \]  
(Eq. C-1b)

Where:
- \( CO_2 \) = Annual \( CO_2 \) mass emissions from natural gas combustion (metric tons).
- \( \text{Gas} \) = Annual natural gas usage, from billing records (mmBtu).
- \( \text{EF} \) = Fuel-specific default \( CO_2 \) emission factor for natural gas, from Table C–1 of this subpart (kg \( CO_2 \)/mmBtu).

\( 1 \times 10^{-3} \) = Conversion factor from kilograms to metric tons.

(2) Tier 2 Calculation Methodology.
Calculate the annual \( CO_2 \) mass emissions for each type of fuel by using either Equation C2a or C2c of this section, as appropriate.

(i) Equation C–2a of this section applies to any type of fuel listed in Table C–1 of the subpart, except for municipal solid waste (MSW). For MSW combustion, use Equation C–2c of this section.

\[ CO_2 = 1 \times 10^{-3} \times \text{Fuel} \times \text{HHV} \times \text{EF} \]  
(Eq. C-2a)

Where:
- \( CO_2 \) = Annual \( CO_2 \) mass emissions for a specific fuel type (metric tons).
- \( \text{Fuel} \) = Mass or volume of the fuel combusted during the year, from company records as defined in §98.6 (express mass in short tons for solid fuel, volume in standard cubic feet for gaseous fuel, and volume in gallons for liquid fuel).
- \( \text{HHV} \) = Annual average high heat value of the fuel (mmBtu per mass or volume). The average HHV shall be calculated according to the requirements of paragraph (a)(2)(ii) of this section.
- \( \text{EF} \) = Fuel-specific default \( CO_2 \) emission factor, from Table C–1 of this subpart (kg \( CO_2 \)/mmBtu).

\( 1 \times 10^{-3} \) = Conversion factor from kilograms to metric tons.

(ii) The minimum required sampling frequency for determining the annual average HHV (e.g., monthly, quarterly, semi-annually, or by lot) is specified in §98.34. The method for computing the annual average HHV is a function of unit size and how frequently you perform or receive from the fuel supplier the results of fuel sampling for HHV.

(A) If the results of fuel sampling are received monthly or more frequently, then for each unit with a maximum rated heat input capacity greater than or equal to 100 mmBtu/hr (or for a group of units that includes at least one unit of that size), the annual average HHV shall be calculated using Equation C–2b of this section. If multiple HHV determinations are made in any month, average the values for the month arithmetically.
Where:

\[ (HHV)_{annual} = \frac{\sum_{i=1}^{n} (HHV)_i \times (Fuel)_i}{\sum_{i=1}^{n} (Fuel)_i} \] (Eq. C-2b)

\( (HHV)_{annual} \) = Weighted annual average high heat value of the fuel (mmBtu per mass or volume).

\( (HHV)_i \) = Measured high heat value of the fuel, for month "i" (which may be the arithmetic average of multiple determinations), or, if applicable, an appropriate substitute data value (mmBtu per mass or volume).

\( (Fuel)_i \) = Mass or volume of the fuel combusted during month "i" from company records (express mass in short tons for solid fuel, volume in standard cubic feet for gaseous fuel, and volume in gallons for liquid fuel).

\( n \) = Number of months in the year that the fuel is burned in the unit.

(B) If the results of fuel sampling are received less frequently than monthly, or, for a unit with a maximum rated heat input capacity less than 100 mmBtu/hr (or a group of such units) regardless of the HHV sampling frequency, the annual average HHV shall either be computed according to paragraph (a)(2)(ii)(A) of this section or as the arithmetic average HHV for all values for the year (including valid samples and substitute data values under §98.35).

(iii) For units that combust municipal solid waste (MSW) and that produce steam, use Equation C–2c of this section. Equation C–2c of this section may also be used for any other solid fuel listed in Table C–1 of this subpart provided that steam is generated by the unit.

\[ CO_2 = 1 \times 10^{-3} \times Steam \times B \times EF \] (Eq. C–2c)

Where:

\( CO_2 \) = Annual CO\(_2\) mass emissions from MSW or solid fuel combustion (metric tons).

\( Steam \) = Total mass of steam generated by MSW or solid fuel combustion during the reporting year (lb steam).

\( B \) = Ratio of the boiler’s maximum rated heat input capacity to its design rated steam output capacity (mmBtu/lb steam).

\( EF \) = Fuel-specific default CO\(_2\) emission factor, from Table C–1 of this subpart (kg CO\(_2\)/mmBtu).

\( 1 \times 10^{-3} \) = Conversion factor from kilograms to metric tons.

(3) Tier 3 Calculation Methodology. Calculate the annual CO\(_2\) mass emissions for each fuel by using either Equation C3, C4, or C5 of this section, as appropriate.

(i) For a solid fuel, use Equation C–3 of this section.

\[ CO_2 = \frac{44}{12} \times Fuel \times CC \times 0.91 \] (Eq. C–3)

Where:

\( CO_2 \) = Annual mass of the solid fuel combusted, from company records as defined in §98.6 (short tons).

\( Fuel \) = Annual mass of the solid fuel combusted, from company records as defined in §98.6 (short tons).

\( CC \) = Annual average carbon content of the solid fuel (percent by weight, expressed as a decimal fraction, e.g., 95% = 0.95). The
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annual average carbon content shall be determined using the same procedures as specified for HHV in paragraph (a)(2)(ii) of this section. 44/12 = Ratio of molecular weights, CO₂ to carbon.

(ii) For a liquid fuel, use Equation C–4 of this section.

\[
\text{CO}_2 = \frac{44}{12} \times \text{Fuel} \times \text{CC} \times 0.001 \quad \text{(Eq. C–4)}
\]

Where:

- \( \text{CO}_2 \) = Annual \( \text{CO}_2 \) mass emissions from the combustion of the specific liquid fuel (metric tons).
- \( \text{Fuel} \) = Annual volume of the liquid fuel combusted (gallons). The volume of fuel combusted must be measured directly, using fuel flow meters calibrated according to §98.3(i). Fuel billing meters may be used for this purpose. Tank drop measurements may also be used.
- \( \text{CC} \) = Annual average carbon content of the liquid fuel (kg C per gallon of fuel). The annual average carbon content shall be determined using the same procedures as specified for HHV in paragraph (a)(2)(ii) of this section.
- \( \frac{44}{12} \) = Ratio of molecular weights, \( \text{CO}_2 \) to carbon.
- 0.001 = Conversion factor from kg to metric tons.

(iii) For a gaseous fuel, use Equation C–5 of this section.

\[
\text{CO}_2 = \frac{44}{12} \times \text{Fuel} \times \text{CC} \times \frac{\text{MW}}{\text{MVC}} \times 0.001 \quad \text{(Eq. C–5)}
\]

Where:

- \( \text{CO}_2 \) = Annual \( \text{CO}_2 \) mass emissions from combustion of the specific gaseous fuel (metric tons).
- \( \text{Fuel} \) = Annual volume of the gaseous fuel combusted (scf). The volume of fuel combusted must be measured directly, using fuel flow meters calibrated according to §98.3(i). Fuel billing meters may be used for this purpose.
- \( \text{CC} \) = Annual average carbon content of the gaseous fuel (kg C per kg of fuel). The annual average carbon content shall be determined using the same procedures as specified for HHV in paragraph (a)(2)(ii) of this section.
- \( \text{MW} \) = Annual average molecular weight of the gaseous fuel (kg/kg-mole). The annual average molecular weight shall be determined using the same procedures as specified for HHV in paragraph (a)(2)(ii) of this section.
- \( \text{MVC} \) = Molar volume conversion factor at standard conditions, as defined in §98.6. Use 849.5 scf per kg mole if you select 68 °F as standard temperature and 836.6 scf per kg mole if you select 60 °F as standard temperature.
- \( \frac{44}{12} \) = Ratio of molecular weights, \( \text{CO}_2 \) to carbon.
- 0.001 = Conversion factor from kg to metric tons.

(iv) Fuel flow meters that measure mass flow rates may be used for liquid or gaseous fuels, provided that the fuel density is used to convert the readings to volumetric flow rates. The density shall be measured at the same frequency as the carbon content. You must measure the density using one of the following appropriate methods. You may use a method published by a consensus-based standards organization, if such a method exists, or you may use industry standard practice. Consensus-based standards organizations include, but are not limited to, the following: ASTM International (100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428–B2959, (800) 262–1373, http://www.astm.org), the American National Standards Institute (ANSI, 1819 L Street, NW., 6th floor, Washington, DC 20036, (202) 265–8020, http://www.ansi.org), the American Gas Association (AGA), 400 North Capitol Street, NW., 4th
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(v) The following default density values may be used for fuel oil, in lieu of using the methods in paragraph (a)(3)(iv) of this section: 6.8 lb/gal for No. 1 oil; 7.2 lb/gal for No. 2 oil; 8.1 lb/gal for No. 6 oil.

(4) Tier 4 Calculation Methodology. Calculate the annual CO₂ mass emissions from all fuels combusted in a unit, by using quality-assured data from continuous emission monitoring systems (CEMS).

(i) This methodology requires a CO₂ concentration monitor and a stack gas volumetric flow rate monitor, except as otherwise provided in paragraph (a)(4)(iv) of this section. Hourly measurements of CO₂ concentration and stack gas flow rate are converted to CO₂ mass emission rates in metric tons per hour.

(ii) When the CO₂ concentration is measured on a wet basis, Equation C–6 of this section is used to calculate the hourly CO₂ emission rates:

\[
CO₂ = 5.18 \times 10^{-7} \times C_{CO₂} \times Q \quad \text{(Eq. C-6)}
\]

Where:

\( C_{CO₂} \) = Hourly average CO₂ concentration (\% CO₂).

\( Q \) = Hourly average stack gas volumetric flow rate (scfh).

\( 5.18 \times 10^{-7} \) = Conversion factor (metric tons/scf/% CO₂).

(iii) If the CO₂ concentration is measured on a dry basis, a correction for the stack gas moisture content is required. You shall either continuously monitor the stack gas moisture content using a method described in §75.11(b)(2) of this chapter or use an appropriate default moisture percentage. For coal, wood, and natural gas combustion, you may use the default moisture values specified in §75.11(b)(1) of this chapter. Alternatively, for any type of fuel, you may determine an appropriate site-specific default moisture value (or values), using measurements made with EPA Method 4—Determination Of Moisture Content In Stack Gases, in appendix A–3 to part 60 of this chapter. Moisture data from the relative accuracy test audit (RATA) of a CEMS may be used for this purpose. If this option is selected, the site-specific moisture default value(s) must represent the fuel(s) or fuel blends that are combusted in the unit during normal, stable operation, and must account for any distinct difference(s) in the stack gas moisture content associated with different process operating conditions. For each site-specific default moisture percentage, at least nine Method 4 runs are required, except where the option to use moisture data from a RATA is selected, and the applicable regulation allows a single moisture determination to represent two or more RATA runs. In that case, you may base the site-specific moisture percentage on the number of moisture runs allowed by the RATA regulation. Calculate each site-specific default moisture value by taking the arithmetic average of the Method 4 runs. Each site-specific moisture default value shall be updated whenever the owner or operator believes the current value is non-representative, due to changes in unit or process operation, but in any event no less frequently than annually. Use the updated moisture value in the subsequent CO₂ emissions calculations. For each unit operating hour, a moisture correction must be applied to Equation C–6 of this section as follows:
(iv) An oxygen (O\textsubscript{2}) concentration monitor may be used in lieu of a CO\textsubscript{2} concentration monitor to determine the hourly CO\textsubscript{2} concentrations, in accordance with Equation F–14a or F–14b (as applicable) in appendix F to part 75 of this chapter, if the effluent gas stream monitored by the CEMS consists solely of combustion products (i.e., no process CO\textsubscript{2} emissions or CO\textsubscript{2} emissions from sorbent are mixed with the combustion products) and if only fuels that are listed in Table 1 in section 3.3.5 of appendix F to part 75 of this chapter, if the effluent gas stream monitored by the CEMS consists solely of combustion products (i.e., no process CO\textsubscript{2} emissions or CO\textsubscript{2} emissions from sorbent are mixed with the combustion products) and if only fuels that are listed in Table 1 in section 3.3.5 of appendix F to part 75 of this chapter are combusted in the unit.

If the O\textsubscript{2} monitoring option is selected, the F-factors used in Equations F–14a and F–14b shall be determined according to section 3.3.5 or section 3.3.6 of appendix F to part 75 of this chapter, as applicable. If Equation F–14b is used, the hourly moisture percentage in the stack gas shall be determined in accordance with paragraph (a)(4)(iii) of this section.

(v) Each hourly CO\textsubscript{2} mass emission rate from Equation C–6 or C–7 of this section is multiplied by the operating time to convert it from metric tons per hour to metric tons. The operating time is the fraction of the hour during which fuel is combusted (e.g., the unit operating time is 1.0 if the unit operates for the whole hour and is 0.5 if the unit operates for 30 minutes in the hour). For common stack configurations, the operating time is the fraction of the hour during which effluent gases flow through the common stack.

(vi) The hourly CO\textsubscript{2} mass emissions are then summed over each calendar quarter and the quarterly totals are summed to determine the annual CO\textsubscript{2} mass emissions.

(vii) If both biomass and fossil fuel are combusted during the year, determine and report the biogenic CO\textsubscript{2} mass emissions separately, as described in paragraph (e) of this section.

(viii) If a portion of the flue gases generated by a unit subject to Tier 4 (e.g., a slip stream) is continuously diverted from the main flue gas exhaust system for the purpose of heat recovery or some other similar process, and then exhausts through a stack that is not equipped with the continuous emission monitors to measure CO\textsubscript{2} mass emissions, CO\textsubscript{2} emissions shall be determined as follows:

(A) At least once a year, use EPA Methods 2 and 3A, and (if necessary) Method 4 in appendices A–2 and A–3 to part 60 of this chapter to perform emissions testing at a set point that best represents normal, stable process operating conditions. A minimum of three one-hour Method 3A tests are required, to determine the CO\textsubscript{2} concentration. A Method 2 test shall be performed during each Method 3A run, to determine the stack gas volumetric flow rate. If moisture correction is necessary, a Method 4 run shall also be performed during each Method 3A run. Important parametric information related to the stack gas flow rate (e.g., damper positions, fan settings, etc.) shall also be recorded during the test.

(B) Calculate a CO\textsubscript{2} mass emission rate (in metric tons/hr) from the stack test data, using a version of Equation C–6 in paragraph (a)(4)(ii) of this section, modified as follows. In the Equation C–6 nomenclature, replace the words “Hourly average” in the definitions of “C\textsubscript{CO2}” and “Q” with the words “3-run average”. Substitute the arithmetic average values of CO\textsubscript{2} concentration and stack gas flow rate from the emission testing into modified Equation C–6. If CO\textsubscript{2} is measured on a dry basis, a moisture correction of the calculated CO\textsubscript{2} mass emission rate is required. Use Equation C–7 in paragraph (a)(4)(ii) of this section to make this correction; replace the word “Hourly”
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with the words “3-run average” in the equation nomenclature.

(C) The results of each annual stack test shall be used in the GHG emissions calculations for the year of the test.

(D) If, for the majority of the operating hours during the year, the diverted stream is withdrawn at a steady rate at or near the tested set point (as evidenced by fan and damper settings and/or other parameters), you may use the calculated CO₂ mass emission rate from paragraph (a)(4)(viii)(B) of this section to estimate the CO₂ mass emissions for all operating hours in which flue gas is diverted from the main exhaust system. Otherwise, you must account for the variation in the flow rate of the diverted stream, as described in paragraph (c)(4)(viii)(E) of this section.

(E) If the flow rate of the diverted stream varies significantly throughout the year, except as provided below, repeat the stack test and emission rate calculation procedures described in paragraphs (c)(4)(viii)(A) and (c)(4)(viii)(B) of this section at a minimum of two more set points across the range of typical operating conditions to develop a correlation between CO₂ mass emission rate and the parametric data. If additional testing is not feasible, use the following approach to develop the necessary correlation. Assume that the average CO₂ concentration obtained in the annual stack test is the same at all operating set points. Then, beginning with the measured flow rate from the stack test and the associated parametric data, perform an engineering analysis to estimate the stack gas flow rate at two or more additional set points. Calculate the CO₂ mass emission rate at each set point.

(F) Calculate the annual CO₂ mass emissions for the diverted stream as follows. For a steady-state process, multiply the number of hours in which flue gas was diverted from the main exhaust system by the CO₂ mass emission rate from the stack test. Otherwise, using the best available information and engineering judgment, apply the most representative CO₂ mass emission rate from the correlation in paragraph (c)(4)(viii)(E) of this section to determine the CO₂ mass emissions for each hour in which flue gas was diverted, and sum the results. To simplify the calculations, you may count partial operating hours as full hours.

(G) Finally, add the CO₂ mass emissions from paragraph (c)(4)(viii)(F) of this section to the annual CO₂ mass emissions measured by the CEMS at the main stack. Report this sum as the total annual CO₂ mass emissions for the unit.

(H) The exact method and procedures used to estimate the CO₂ mass emissions for the diverted portion of the flue gas exhaust stream shall be documented in the Monitoring Plan required under §98.3(g)(5).

(5) Alternative methods for certain units subject to Part 75 of this chapter. Certain units that are not subject to subpart D of this part and that report data to EPA according to part 75 of this chapter may qualify to use the alternative methods in this paragraph (a)(5), in lieu of using any of the four calculation methodology tiers.

(i) For a unit that combusts only natural gas and/or fuel oil, is not subject to subpart D of this part, monitors and reports heat input data year-round according to appendix D to part 75 of this chapter, and that report data to the applicable part 75 program to report CO₂ mass emissions data, calculate the annual CO₂ mass emissions for the purposes of this part as follows:

(A) Use the hourly heat input data from appendix D to part 75 of this chapter, together with Equation G–4 in appendix G to part 75 of this chapter to determine the hourly CO₂ mass emission rates, in units of tons/hr;

(B) Use Equations F–12 and F–13 in appendix F to part 75 of this chapter to calculate the quarterly and cumulative annual CO₂ mass emissions, respectively, in units of short tons; and

(C) Divide the cumulative annual CO₂ mass emissions value by 1.1 to convert it to metric tons.

(ii) For a unit that combusts only natural gas and/or fuel oil, is not subject to subpart D of this part, monitors and reports heat input data year-round according to §75.19 of this chapter but is not required by the applicable part 75 program to report CO₂ mass emissions data, calculate the annual CO₂ mass emissions for the purposes of this part as follows:
(A) Calculate the hourly \( \text{CO}_2 \) mass emissions, in units of short tons, using Equation LM–11 in §75.19(c)(4)(iii) of this chapter.

(B) Sum the hourly \( \text{CO}_2 \) mass emissions values over the entire reporting year to obtain the cumulative annual \( \text{CO}_2 \) mass emissions, in units of short tons.

(C) Divide the cumulative annual \( \text{CO}_2 \) mass emissions value by 1.1 to convert it to metric tons.

(iii) For a unit that is not subject to subpart D of this part, uses flow rate and \( \text{CO}_2 \) (or \( \text{O}_2 \)) CEMS to report heat input data year-round according to part 75 of this chapter, but is not required by the applicable part 75 program to report \( \text{CO}_2 \) mass emissions data, calculate the annual \( \text{CO}_2 \) mass emissions as follows:

(A) Use Equation F–11 or F–2 (as applicable) in appendix F to part 75 of this chapter to calculate the hourly \( \text{CO}_2 \) mass emission rates from the CEMS data. If an \( \text{O}_2 \) monitor is used, convert the hourly average \( \text{O}_2 \) readings to \( \text{CO}_2 \) using Equation F–14a or F–14b in appendix F to part 75 of this chapter (as applicable), before applying Equation F–11 or F–2.

(B) Use Equations F–12 and F–13 in appendix F to part 75 of this chapter to calculate the quarterly and cumulative annual \( \text{CO}_2 \) mass emissions, respectively, in units of short tons.

(C) Divide the cumulative annual \( \text{CO}_2 \) mass emissions value by 1.1 to convert it to metric tons.

(iv) For units that qualify to use the alternative \( \text{CO}_2 \) emissions calculation methods in paragraphs (a)(5)(i) through (a)(5)(iii) of this section, if both biomass and fossil fuel are combusted during the year, separate calculation and reporting of the biogenic \( \text{CO}_2 \) mass emissions (as described in paragraph (e) of this section) is optional, only for the 2010 reporting year, as provided in §98.3(c)(12).

(b) Use of the four tiers. Use of the four tiers of \( \text{CO}_2 \) emissions calculation methodologies described in paragraph (a) of this section is subject to the following conditions, requirements, and restrictions:

(1) The Tier 1 Calculation Methodology:

(i) May be used for any fuel listed in Table C–1 of this subpart that is combusted in a unit with a maximum rated heat input capacity of 250 \( \text{mmBtu/hr} \) or less.

(ii) May be used for MSW in a unit of any size that does not produce steam, if the use of Tier 4 is not required.

(iii) May be used for solid, gaseous, or liquid biomass fuels in a unit of any size provided that the fuel is listed in Table C–1 of this subpart.

(iv) May not be used if you routinely perform fuel sampling and analysis for the fuel high heat value (HHV) or routinely receive the results of HHV sampling and analysis from the fuel supplier at the minimum frequency specified in §98.34(a), or at a greater frequency. In such cases, Tier 2 shall be used. This restriction does not apply to paragraphs (b)(1)(ii), (b)(1)(v), (b)(1)(vi), and (b)(1)(vii) of this section.

(v) May be used for natural gas combustion in a unit of any size, in cases where the annual natural gas consumption is obtained from fuel billing records in units of therms or \( \text{mmBtu} \).

(vi) May be used for MSW combustion in a small, batch incinerator that burns no more than 1,000 tons per year of MSW.

(vii) May be used for the combustion of MSW and/or tires in a unit, provided that no more than 10 percent of the unit's annual heat input is derived from those fuels, combined. Notwithstanding this requirement, if a unit combusts both MSW and tires and the reporter elects not to separately calculate and report biogenic \( \text{CO}_2 \) emissions from the combustion of tires, Tier 1 may be used for the MSW combustion, provided that no more than 10 percent of the unit's annual heat input is derived from MSW.

(2) The Tier 2 Calculation Methodology:

(i) May be used for the combustion of any type of fuel in a unit with a maximum rated heat input capacity of 250 \( \text{mmBtu/hr} \) or less provided that the fuel is listed in Table C–1 of this subpart.

(ii) May be used in a unit with a maximum rated heat input capacity greater than 250 \( \text{mmBtu/hr} \) for the combustion of natural gas and/or distillate fuel oil.
(iii) May be used for MSW in a unit of any size that produces steam, if the use of Tier 4 is not required.

(3) The Tier 3 Calculation Methodology:
   (i) May be used for a unit of any size that combusts any type of fuel listed in Table C–1 of this subpart (except for MSW), unless the use of Tier 4 is required.
   (ii) Shall be used for a unit with a maximum rated heat input capacity greater than 250 mmBtu/hr that combusts any type of fuel listed in Table C–1 of this subpart (except MSW), unless either of the following conditions apply:
       (A) The use of Tier 1 or 2 is permitted, as described in paragraphs (b)(1)(ii), (b)(1)(v), and (b)(2)(ii) of this section.
       (B) The use of Tier 4 is required.
   (iii) Shall be used for a fuel not listed in Table C–1 of this subpart if the fuel is combusted in a unit with a maximum rated heat input capacity of 250 mmBtu/hr or less and for a unit that combusts municipal solid waste with a maximum rated input capacity of 600 tons of MSW per day or less, if the unit meets all of the following three conditions:
       (A) The unit has both a stack gas volumetric flow rate monitor and a CO₂ concentration monitor.
       (B) The unit meets the conditions specified in paragraphs (b)(4)(ii)(B) through (b)(4)(ii)(D) of this section.
       (C) The CO₂ and stack gas volumetric flow rate monitors meet the conditions specified in paragraphs (b)(4)(ii)(E) and (b)(4)(ii)(F) of this section.
   (iv) May apply to common stack or duct configurations where:
       (A) The combined effluent gas streams from two or more stationary fuel combustion units are vented through a monitored common stack or duct. In this case, Tier 4 shall be used if all of the conditions in paragraph (b)(4)(iv)(A)(1) of this section or if the conditions in paragraph (b)(4)(iv)(A)(2) of this section are met.
       (B) The unit combats solid fossil fuel or MSW as the primary fuel.
       (C) The unit has operated for more than 1,000 hours in any calendar year since 2005.
       (D) The unit has installed CEMS that are required either by an applicable Federal or State regulation or the unit’s operating permit.
       (E) The installed CEMS include a gas monitor of any kind or a stack gas volumetric flow rate monitor, or both and the monitors have been certified, either in accordance with the requirements of part 75 of this chapter, part 60 of this chapter, or an applicable State continuous monitoring program.
       (F) The installed gas or stack gas volumetric flow rate monitors are required, either by an applicable Federal or State regulation or by the unit’s operating permit, to undergo periodic quality assurance testing in accordance with either appendix B to part 75 of this chapter, appendix F to part 60 of this chapter, or an applicable State continuous monitoring program.

(B) The unit combusts solid fossil fuel or MSW as the primary fuel.

(C) The unit has operated for more than 1,000 hours in any calendar year since 2005.

(D) The unit has installed CEMS that are required either by an applicable Federal or State regulation or the unit’s operating permit.

(E) The installed CEMS include a gas monitor of any kind or a stack gas volumetric flow rate monitor, or both and the monitors have been certified, either in accordance with the requirements of part 75 of this chapter, part 60 of this chapter, or an applicable State continuous monitoring program.

(F) The installed gas or stack gas volumetric flow rate monitors are required, either by an applicable Federal or State regulation or by the unit’s operating permit, to undergo periodic quality assurance testing in accordance with either appendix B to part 75 of this chapter, appendix F to part 60 of this chapter, or an applicable State continuous monitoring program.

(iii) Shall be used for a unit with a maximum rated heat input capacity greater than 250 mmBtu/hr or less and for a unit that combusts municipal solid waste with a maximum rated input capacity of 600 tons of MSW per day or less, if the unit meets all of the following three conditions:
       (A) The unit has both a stack gas volumetric flow rate monitor and a CO₂ concentration monitor.
       (B) The unit meets the conditions specified in paragraphs (b)(4)(ii)(B) through (b)(4)(ii)(D) of this section.
       (C) The CO₂ and stack gas volumetric flow rate monitors meet the conditions specified in paragraphs (b)(4)(ii)(E) and (b)(4)(ii)(F) of this section.

(iv) May apply to common stack or duct configurations where:
       (A) The combined effluent gas streams from two or more stationary fuel combustion units are vented through a monitored common stack or duct. In this case, Tier 4 shall be used if all of the conditions in paragraph (b)(4)(iv)(A)(1) of this section or if the conditions in paragraph (b)(4)(iv)(A)(2) of this section are met.

Finally, at least one of the units meets the requirements of paragraphs (b)(4)(ii)(A) through (b)(4)(ii)(C) of this section.
section, and the CEMS installed at the common stack (or duct) meet the requirements of paragraphs (b)(4)(ii)(D) through (b)(4)(ii)(F) of this section.

(2) At least one of the units and the monitors installed at the common stack or duct meet the requirements of paragraphs (b)(4)(ii)(D) through (b)(4)(ii)(F) of this section.

(B) The combined effluent gas streams from a process or manufacturing unit and a stationary fuel combustion unit are vented through a monitored common stack or duct. In this case, Tier 4 shall be used if the combustion unit and the monitors installed at the common stack or duct meet the applicability criteria specified in paragraph (b)(4)(iv)(A)(1), or (b)(4)(iv)(A)(2) of this section.

(C) The combined effluent gas streams from two or more manufacturing or process units are vented through a common stack or duct. In this case, if any of the units is required by an applicable subpart of this part to use Tier 4, the CO$_2$ mass emissions may be monitored at each individual unit, or the combined CO$_2$ mass emissions may be monitored at the common stack or duct. However, if it is not feasible to monitor the individual units, the combined CO$_2$ mass emissions shall be monitored at the common stack or duct.

(5) The Tier 4 Calculation Methodology shall be used:

(i) Starting on January 1, 2010, for a unit that is required to report CO$_2$ mass emissions beginning on that date, if all of the monitors needed to measure CO$_2$ mass emissions have been installed and certified by that date.

(ii) No later than January 1, 2011, for a unit that is required to report CO$_2$ mass emissions beginning on January 1, 2010, if all of the monitors needed to measure CO$_2$ mass emissions have not been installed and certified by January 1, 2010. In this case, you may use Tier 2 or Tier 3 to report GHG emissions for 2010. However, if the required CEMS are certified some time in 2010, you need not wait until January 1, 2011 to begin using Tier 4. Rather, you may switch from Tier 2 or Tier 3 to Tier 4 as soon as CEMS certification testing is successfully completed. If this reporting option is chosen, you must document the change in CO$_2$ calculation methodology in the Monitoring Plan required under §98.3(g)(5) and in the GHG emissions report under §98.3(c).

Data recorded by the CEMS during a certification test period in 2010 may be used for reporting under this part, provided that the following two conditions are met:

(A) The certification tests are passed in sequence, with no test failures.

(B) No unscheduled maintenance or repair of the CEMS is performed during the certification test period.

(iii) No later than 180 days following the date on which a change is made that triggers Tier 4 applicability under paragraph (b)(4)(ii) or (b)(4)(iii) of this section (e.g., a change in the primary fuel, manner of unit operation, or installed continuous monitoring equipment).

You may elect to use any applicable higher tier for one or more of the fuels combusted in a unit. For example, if a 100 mmBtu/hr unit combusts natural gas and distillate fuel oil, you may elect to use Tier 1 for natural gas and Tier 3 for the fuel oil, even though Tier 1 could have been used for both fuels. However, for units that use either the Tier 4 or the alternative calculation methodology specified in paragraph (a)(5)(iii) of this section, CO$_2$ emissions from the combustion of all fuels shall be based solely on CEMS measurements.

(c) Calculation of CH$_4$ and N$_2$O emissions from stationary combustion sources.

You must calculate annual CH$_4$ and N$_2$O mass emissions only for units that are required to report CO$_2$ emissions using the calculation methodologies of this subpart and for only those fuels that are listed in Table C–2 of this subpart.

(1) Use Equation C–8 of this section to estimate CH$_4$ and N$_2$O emissions for any fuels for which you use the Tier 1 or Tier 3 calculation methodologies for CO$_2$, except when natural gas usage in units of therms or mmBtu is obtained from gas billing records. In that case, use Equation C–8a in paragraph (c)(1)(i) of this section or Equation C–8b in paragraph (c)(1)(ii) of this section (as applicable). For Equation C–8, use the same values for fuel consumption that you use for the Tier 1 or Tier 3 calculation.
Where:

\(CH_4\) or \(N_2O\) = Annual \(CH_4\) or \(N_2O\) emissions from the combustion of a particular type of fuel (metric tons).

\(Fuel\) = Mass or volume of the fuel combusted during the reporting year.

\(HHV\) = Default high heat value of the fuel from Table C–1 of this subpart; alternatively, for Tier 3, if actual HHV data are available for the reporting year, you may average these data using the procedures specified in paragraph (a)(2)(ii) of this section, and use the average value in Equation C–8 (mmBtu per mass or volume).

\(EF\) = Fuel-specific default emission factor for \(CH_4\) or \(N_2O\), from Table C–2 of this subpart (kg \(CH_4\) or \(N_2O\) per mmBtu).

\(1 \times 10^{-3} =\) Conversion factor from kilograms to metric tons.

(i) Use Equation C–8a to calculate \(CH_4\) and \(N_2O\) emissions when natural gas usage is obtained from gas billing records in units of therms.

\[CH_4\ or \ N_2O = 1 \times 10^{-3} \times Fuel \times HHV \times EF\]  

(Eq. C–8a)

Where:

\(CH_4\) or \(N_2O\) = Annual \(CH_4\) or \(N_2O\) emissions from the combustion of natural gas (metric tons).

\(Fuel\) = Annual natural gas usage, from gas billing records (therms).

\(EF\) = Fuel-specific default emission factor for \(CH_4\) or \(N_2O\), from Table C–2 of this subpart (kg \(CH_4\) or \(N_2O\) per mmBtu).

\(0.1 =\) Conversion factor from therms to mmBtu.

\(1 \times 10^{-3} =\) Conversion factor from kilograms to metric tons.

(ii) Use Equation C–8b to calculate \(CH_4\) and \(N_2O\) emissions when natural gas usage is obtained from gas billing records in units of mmBtu.

\[CH_4\ or \ N_2O = 1 \times 10^{-3} \times Fuel \times EF\]  

(Eq. C–8b)

Where:

\(CH_4\) or \(N_2O\) = Annual \(CH_4\) or \(N_2O\) emissions from the combustion of natural gas (metric tons).

\(Fuel\) = Annual natural gas usage, from gas billing records (mmBtu).

\(EF\) = Fuel-specific default emission factor for \(CH_4\) or \(N_2O\), from Table C–2 of this subpart (kg \(CH_4\) or \(N_2O\) per mmBtu).

\(1 \times 10^{-3} =\) Conversion factor from kilograms to metric tons.

(2) Use Equation C–9a of this section to estimate \(CH_4\) and \(N_2O\) emissions for any fuels for which you use the Tier 2 Equation C–2a of this section to estimate CO\(_2\) emissions. Use the same values for fuel consumption and HHV that you use for the Tier 2 calculation.

\[CH_4\ or \ N_2O = 1 \times 10^{-3} \times HHV \times EF \times Fuel\]  

(Eq. C–9a)

Where:

\(CH_4\) or \(N_2O\) = Annual \(CH_4\) or \(N_2O\) emissions from the combustion of a particular type of fuel (metric tons).

\(Fuel\) = Mass or volume of the fuel combusted during the reporting year.

\(HHV\) = High heat value of the fuel, averaged for all valid measurements for the reporting year (mmBtu per mass or volume).

\(EF\) = Fuel-specific default emission factor for \(CH_4\) or \(N_2O\), from Table C–2 of this subpart (kg \(CH_4\) or \(N_2O\) per mmBtu).

\(1 \times 10^{-3} =\) Conversion factor from kilograms to metric tons.

(3) Use Equation C–9b of this section to estimate \(CH_4\) and \(N_2O\) emissions for any fuels for which you use Equation C–2c of this section to calculate the CO\(_2\) emissions. Use the same values for steam generation and the ratio “B” that you use for Equation C–2c.
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\[ \text{CH}_4 \text{ or } \text{N}_2\text{O} = 1 \times 10^{-3} \text{ Steam } \times B \times EF \quad (\text{Eq. C-9b}) \]

Where:
- \( \text{CH}_4 \) or \( \text{N}_2\text{O} \) = Annual \( \text{CH}_4 \) or \( \text{N}_2\text{O} \) emissions from the combustion of a solid fuel (metric tons).
- \( \text{Steam} \) = Total mass of steam generated by solid fuel combustion during the reporting year (lb steam).
- \( B \) = Ratio of the boiler’s maximum rated heat input capacity to its design rated steam output (mmBtu/lb steam).
- \( EF \) = Fuel-specific emission factor for \( \text{CH}_4 \) or \( \text{N}_2\text{O} \), from Table C-2 of this subpart (kg \( \text{CH}_4 \) or \( \text{N}_2\text{O} \) per mmBtu).
- \( 1 \times 10^{-3} \) = Conversion factor from kilograms to metric tons.

(4) Use Equation C-10 of this section for: units subject to subpart D of this part; units that qualify for and elect to use the alternative \( \text{CO}_2 \) mass emissions calculation methodologies described in paragraph (a)(5) of this section; and units that use the Tier 4 Calculation Methodology.

\[ \text{CH}_4 \text{ or } \text{N}_2\text{O} = 0.001 \times (\text{HI})_A \times EF \quad (\text{Eq. C-10}) \]

Where:
- \( \text{CH}_4 \) or \( \text{N}_2\text{O} \) = Annual \( \text{CH}_4 \) or \( \text{N}_2\text{O} \) emissions from the combustion of a particular type of fuel (metric tons).
- \( (\text{HI})_A \) = Cumulative annual heat input from combustion of the fuel (mmBtu).
- \( EF \) = Fuel-specific emission factor for \( \text{CH}_4 \) or \( \text{N}_2\text{O} \), from Table C-2 of this section (kg \( \text{CH}_4 \) or \( \text{N}_2\text{O} \) per mmBtu).
- 0.001 = Conversion factor from kg to metric tons.

(i) If only one type of fuel listed in Table C-2 of this subpart is combusted during the reporting year, substitute the cumulative annual heat input from combustion of the fuel into Equation C-10 of this section to calculate the annual \( \text{CH}_4 \) or \( \text{N}_2\text{O} \) emissions. For units in the Acid Rain Program and units that report heat input data to EPA year-round according to part 75 of this chapter, the value of \( (\text{HI})_A \) obtained from the electronic data reports required under §75.64 of this chapter, except as otherwise provided in paragraphs (c)(4)(ii)(B) and (c)(4)(ii)(D) of this section.

(ii) If more than one type of fuel listed in Table C-2 of this subpart is combusted during the reporting year, use Equation C-10 of this section separately for each type of fuel, except as provided in paragraph (c)(4)(ii)(B) of this section. Determine the appropriate values of \( (\text{HI})_A \) as follows:

(A) For units in the Acid Rain Program and other units that report heat input data to EPA year-round according to part 75 of this chapter, obtain \( (\text{HI})_A \) for each type of fuel from the electronic data reports required under §75.64 of this chapter, except as otherwise provided in paragraphs (c)(4)(ii)(B) and (c)(4)(ii)(D) of this section.

(B) For a unit that uses CEMS to monitor hourly heat input according to part 75 of this chapter, the value of \( (\text{HI})_A \) may be attributed exclusively to the fuel with the highest F-factor, when the reporting option in 3.3.6.5 of appendix F to part 75 of this chapter is selected and implemented.

(C) For Tier 4 units, use the best available information (e.g., fuel feed rate measurements, fuel heating values, engineering analysis) to estimate the value of \( (\text{HI})_A \) for each type of fuel. The estimates are based on the calibration requirements of §98.3(i) or to the QA requirements of §98.34.

(D) Units in the Acid Rain Program and other units that report heat input data to EPA year-round according to part 75 of this chapter may use the best available information described in paragraph (c)(4)(ii)(B) of this section, to estimate \( (\text{HI})_A \) for each fuel type,
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whenever fuel-specific heat input values cannot be directly obtained from the electronic data reports under § 75.64 of this chapter.

(5) When multiple fuels are combusted during the reporting year, sum the fuel-specific results from Equations C-8, C-8a, C-8b, C-9a, C-9b, or C-10 of this section (as applicable) to obtain the total annual CH₄ and N₂O emissions, in metric tons.

(6) Calculate the annual CH₄ and N₂O mass emissions from the combustion of blended fuels as follows:

(i) If the mass or volume of each component fuel in the blend is measured before the fuels are mixed and combusted, calculate and report CH₄ and N₂O emissions separately for each component fuel, using the applicable procedures in this paragraph (c).

(ii) If the mass or volume of each component fuel in the blend is not measured before the fuels are mixed and combusted, a reasonable estimate of the percentage composition of the blend, based on best available information, is required. Perform the following calculations for each component fuel “i” that is listed in Table C-2:

(A) Multiply (% Fuel), the estimated mass or volume percentage (decimal fraction) of component fuel “i”, by the total annual mass or volume of the blended fuel combusted during the reporting year, to obtain an estimate of the annual consumption of component “i”;

(B) Multiply the result from paragraph (c)(6)(ii)(A) of this section by the HHV of the fuel (default value or, if available, the measured annual average value), to obtain an estimate of the annual heat input from component “i”, using Equation C-8, C-8a, C-8b, C-9a, or C-10 of this section, as applicable;

(C) Calculate the annual CH₄ and N₂O emissions from component “i”, using Equation C-8, C-8a, C-8b, C-9a, or C-10 of this section, as applicable;

(D) Sum the annual CH₄ emissions across all component fuels to obtain the annual CH₄ emissions for the blend. Similarly sum the annual N₂O emissions across all component fuels to obtain the annual N₂O emissions for the blend. Report these annual emissions totals.

(d) Calculation of CO₂ from sorbent.

(1) When a unit is a fluidized bed boiler, is equipped with a wet flue gas desulfurization system, or uses other acid gas emission controls with sorbent injection to remove acid gases, if the chemical reaction between the acid gas and the sorbent produces CO₂ emissions, use Equation C-11 of this section to calculate the CO₂ emissions from the sorbent, except when those CO₂ emissions are monitored by CEMS. When a sorbent other than CaCO₃ is used, determine site-specific values of R and MWₛ.

$$CO₂ = 0.91 \times S \times R \times \left( \frac{MW_{CO₂}}{MW_S} \right) \quad \text{(Eq. C-11)}$$

Where:

CO₂ = CO₂ emitted from sorbent for the reporting year (metric tons).
S = Limestone or other sorbent used in the reporting year, from company records (short tons).
R = The number of moles of CO₂ released upon capture of one mole of the acid gas species being removed (R = 1.00 when the sorbent is CaCO₃ and the targeted acid gas species is SO₂).
MWₐ₂ = Molecular weight of carbon dioxide (44).
MWₛ = Molecular weight of sorbent (100 if calcium carbonate).
0.91 = Conversion factor from short tons to metric tons.

(2) The total annual CO₂ mass emissions reported for the unit shall include the CO₂ emissions from the combustion process and the CO₂ emissions from the sorbent.

(e) Biogenic CO₂ emissions from combustion of biomass with other fuels. Use the applicable procedures of this paragraph (e) to estimate biogenic CO₂ emissions from units that combust a combination of biomass and fossil fuels (i.e., either co-fired or blended fuels). Separate reporting of biogenic CO₂ emissions from the combined combustion of biomass and fossil fuels is required for those
biomass fuels listed in Table C–1 of this section and for municipal solid waste. In addition, when a biomass fuel that is not listed in Table C–1 is combusted in a unit that has a maximum rated heat input greater than 250 mmBtu/hr, if the biomass fuel accounts for 10% or more of the annual heat input to the unit, and if the unit does not use CEMS to quantify its annual CO₂ mass emissions, then, pursuant to §98.33(b)(3)(iii), Tier 3 must be used to determine the carbon content of the biomass fuel and to calculate the biogenic CO₂ emissions from combustion of the fuel. Notwithstanding these requirements, in accordance with §98.3(c)(12), separate reporting of biogenic CO₂ emissions is optional for the 2010 reporting year for units subject to subpart D of this part and for units that use the CO₂ mass emissions calculation methodologies in part 75 of this chapter, pursuant to paragraph (a)(5) of this section. However, if the owner or operator opts to report biogenic CO₂ emissions separately for these units, the appropriate methodology in this paragraph (e) shall be used. Separate reporting of biogenic CO₂ emissions from the combustion of tires is also optional, but may be reported by following the provisions of paragraph (e)(3) of this section.

(1) You may use Equation C–1 of this subpart to calculate the annual CO₂ mass emissions from the combustion of the biomass fuels listed in Table C–1 of this subpart (except MSW and tires), in a unit of any size, including units equipped with a CO₂ CEMS, except when the use of Tier 2 is required as specified in paragraph (b)(1)(iv) of this section. Determine the quantity of biomass combusted using one of the following procedures in this paragraph (e)(1), as appropriate, and document the selected procedures in the Monitoring Plan under §98.3(g):

(i) Company records.

(ii) The procedures in paragraph (e)(5) of this section.

(iii) The best available information for premixed fuels that contain biomass and fossil fuels (e.g., liquid fuel mixtures containing biodiesel).

(2) You may use the procedures of this paragraph if the following three conditions are met: First, a CO₂ CEMS (or a surrogate O₂ monitor) and a stack gas flow rate monitor are used to determine the annual CO₂ mass emissions (either according to part 75 of this chapter, the Tier 4 Calculation Methodology, or the alternative calculation methodology specified in paragraph (a)(5)(iii) of this section); second, neither MSW nor tires is combusted in the unit during the reporting year; and third, the CO₂ emissions consist solely of combustion products (i.e., no process or sorbent emissions included).

(i) For each operating hour, use Equation C–12 of this section to determine the volume of CO₂ emitted.

\[
V_{\text{CO}_2 h} = \frac{\text{(%CO}_2 \text{)}_h \times Q_h \times t_h}{100} \quad (\text{Eq. C-12})
\]

Where:

- \(V_{\text{CO}_2 h}\) = Hourly volume of CO₂ emitted (scf).
- \(\text{(%CO}_2 \text{)}_h\) = Hourly average CO₂ concentration, measured by the CO₂ concentration monitor, or, if applicable, calculated from the hourly average O₂ concentration (%O₂).
- \(Q_h\) = Hourly average stack gas volumetric flow rate, measured by the stack gas volumetric flow rate monitor (scfh).
- \(t_h\) = Source operating time (decimal fraction of the hour during which the source combusts fuel, i.e., 1.0 for a full operating hour, 0.5 for 30 minutes of operation, etc.).
- 100 = Conversion factor from percent to a decimal fraction.

(ii) Sum all of the hourly \(V_{\text{CO}_2 h}\) values for the reporting year, to obtain \(V_{\text{CO}_2 \text{total}}\), the total annual volume of CO₂ emitted.

(iii) Calculate the annual volume of CO₂ emitted from fossil fuel combustion using Equation C–13 of this section. If two or more types of fossil fuel are combusted during the year, perform a separate calculation with Equation C–13 of this section for each fuel and sum the results.
\[ V_{ff} = \frac{\text{Fuel} \times F_f \times \text{HHV}}{10^6} \]  
(Eq. C-13)

Where:

- \( V_f \) = Annual volume of CO\(_2\) emitted from combustion of a particular fossil fuel (scf).
- \( \text{Fuel} \) = Total quantity of the fossil fuel combusted in the reporting year, from company records, as defined in §98.6 (lb for solid fuel, gallons for liquid fuel, and scf for gaseous fuel).
- \( F_f \) = Fuel-specific carbon based F-factor, either a default value from Table 1 in section 3.3.5 of appendix F to part 75 of this chapter, or a site-specific value determined under section 3.3.6 of appendix F to part 75 (scf CO\(_2\)-mmBtu).
- \( \text{HHV} \) = High heat value of the fossil fuel, calculated according to the requirements of section 3.3.6 of appendix F to part 75.

\( 10^6 = \) Conversion factor, Btu per mmBtu.

(iv) Subtract \( V_f \) from \( V_{total} \), the annual volume of CO\(_2\) from the combustion of biomass.

(v) Calculate the biogenic percentage of the annual CO\(_2\) emissions, expressed as a decimal fraction, using Equation C-14 of this section:

\[ \% \text{Biogenic} = \frac{V_{bio}}{V_{total}} \]  
(Eq. C-14)

(vi) Calculate the annual biogenic CO\(_2\) mass emissions, in metric tons, by multiplying the results obtained from Equation C-14 of this section by the annual CO\(_2\) mass emissions in metric tons, as determined:

(A) Under paragraph (a)(4)(vi) of this section, for units using the Tier 4 Calculation Methodology.

(B) Under paragraph (a)(5)(iii)(B) of this section, for units using the alternative calculation methodology specified in paragraph (a)(5)(iii).

(C) From the electronic data report required under §75.64 of this chapter, for units in the Acid Rain Program and other units using CEMS to monitor and report CO\(_2\) mass emissions according to part 75 of this chapter. However, before calculating the annual biogenic CO\(_2\) mass emissions, multiply the cumulative annual CO\(_2\) mass emissions by 0.91 to convert from short tons to metric tons.

(3) You must use the procedures in paragraphs (e)(3)(i) through (e)(3)(iii) of this section to determine the annual biogenic CO\(_2\) emissions from the combustion of MSW, except as otherwise provided in paragraph (e)(3)(iv) of this section. These procedures also may be used for any unit that co-fires biomass and fossil fuels, including units equipped with a CO\(_2\) CEMS, and units for which optional separate reporting of biogenic CO\(_2\) emissions from the combustion of tires is selected.

(i) Use an applicable CO\(_2\) emissions calculation method in this section to quantify the total annual CO\(_2\) mass emissions from the unit.

(ii) Determine the relative proportions of biogenic and non-biogenic CO\(_2\) emissions in the flue gas on a quarterly basis using the method specified in §98.34(d) (for units that combust MSW as the primary fuel or as the only fuel used for any unit that co-fires biomass and fossil fuels, including units equipped with a CO\(_2\) CEMS, and units for which optional separate reporting of biogenic CO\(_2\) emissions from the combustion of tires is selected).

(iii) For units that combust MSW and/or tires, you may estimate the annual biogenic CO\(_2\) mass emissions from the unit by multiplying the total annual CO\(_2\) mass emissions by the annual average biogenic decimal fraction obtained from §98.34(d) or §98.34(e), as applicable.

(iv) If the combustion of MSW and/or tires provides no more than 10 percent of the annual heat input to a unit, or if a small, batch incinerator combusts no more than 1,000 tons per year of MSW, you may estimate the annual biogenic CO\(_2\) emissions as follows, in lieu of following the procedures in paragraphs (e)(3)(i) through (e)(3)(iii) of this section:

(A) Calculate the total annual CO\(_2\) emissions from combustion of MSW and/or tires in the unit, using the Tier 1 calculation methodology in paragraph (a)(1) of this section.

(B) Multiply the result from paragraph (e)(3)(iv)(A) of this section by the appropriate default factor to determine the annual biogenic CO\(_2\) emissions, in metric tons. For MSW, use a default factor of 0.60 and for tires, use a default factor of 0.20.

(4) If Equation C-1 or Equation C-2a of this section is selected to calculate the annual biogenic mass emissions for
wood, wood waste, or other solid bio-
mass-derived fuel, Equation C-15 of
this section may be used to quantify
biogenic fuel consumption, provided
that all of the required input param-
eters are accurately quantified. Simi-
lar equations and calculation meth-
odies based on steam generation
and boiler efficiency may be used, pro-
vided that they are documented in the
GHG Monitoring Plan required by
§98.3(g)(5).

\[
(Fuel)_p = \frac{[H \times S] - (HI)_{nb}}{2000 (HHV)_{bio} (Eff)_{bio}} \quad \text{(Eq. C-15)}
\]

Where:
- \((Fuel)_p\) = Quantity of biomass consumed dur-
ing the measurement period "p" (tons/year
or tons/month, as applicable).
- \(H\) = Average enthalpy of the boiler steam for
the measurement period (Btu/lb).
- \(S\) = Total boiler steam production for the
measurement period (lb/month or lb/year,
as applicable).
- \((HI)_{nb}\) = Heat input from co-fired fossil fuels
and non-biomass-derived fuels for the
measurement period, based on company
records of fuel usage and default or meas-
ured HHV values (Btu/month or Btu/year,
as applicable).
- \((HHV)_{bio}\) = Default or measured high heat
value of the biomass fuel (Btu/lb).
- \((Eff)_{bio}\) = Percent efficiency of biomass-to-en-
ergy conversion, expressed as a decimal
fraction.
- 2000 = Conversion factor (lb/ton).

(5) For units subject to subpart D of
this part and for units that use the
methods in part 75 of this chapter to
quantify CO\(_2\) mass emissions in accord-
ance with paragraph (a)(5) of this sec-
tion, you may calculate biogenic CO\(_2\)
emissions from the combustion of bio-
mass fuels listed in Table C-1 of this
subpart using Equation C-15a. This
equation may not be used to calculate
biogenic CO\(_2\) emissions from the com-
bustion of tires or MSW; the methods
described in paragraph (e)(3) of this
section must be used for those fuels.
Whenever \((HI)_{A}\), the annual heat input
from combustion of biomass fuel in
Equation C-15a, cannot be determined
solely from the information in the
electronic emissions reports under
§75.64 of this chapter (e.g., in cases
where a unit uses CEMS in combina-
tion with multiple F-factors, a worst-
case F-factor, or a prorated F-factor to
report heat input rather than reporting
heat input based on fuel type), use the
best available information (as de-
scribed in §§98.33(c)(4)(i)(C) and
(c)(4)(i)(D)) to determine \((HI)_{A}\).

\[
CO_2 = 0.001 \times (HI)_{A} \times EF \quad \text{(Eq. C-15a)}
\]

Where:
- \(CO_2\) = Annual CO\(_2\) mass emissions from the
combustion of a particular type of bio-
mass fuel listed in Table C-1 (metric
tons)
- \((HI)_{A}\) = Annual heat input from the biomass
fuel, obtained, where feasible, from the
electronic emissions reports required
under §75.64 of this chapter. Where this is
not feasible use best available informa-
tion, as described in §§98.33(c)(4)(i)(C)
and (c)(4)(i)(D) (mmBtu)
- \(EF\) = CO\(_2\) emission factor for the biomass
fuel, from Table C-1 (kg CO\(_2\)/mmBtu)
- 0.001 = Conversion factor from kg to metric
tons

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FR 70140, Dec. 17, 2010)
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is combusted. The owner or operator may perform fuel sampling and analysis more often than the minimum required frequency, in order to obtain a more representative annual average HHV.

(i) For natural gas, semiannual sampling and analysis is required (i.e., twice in a calendar year, with consecutive samples taken at least four months apart).

(ii) For coal and fuel oil, and for any other solid or liquid fuel that is delivered in lots, analysis of at least one representative sample from each fuel lot is required. For fuel oil, as an alternative to sampling each fuel lot, a sample may be taken upon each addition of oil to the unit's storage tank. Flow proportional sampling, continuous drip sampling, or daily manual oil sampling may also be used, in lieu of sampling each fuel lot. If the daily manual oil sampling option is selected, sampling from a particular tank is required only on days when oil from the tank is combusted by the unit (or units) served by the tank. If you elect to sample from the storage tank upon each addition of oil to the tank, you must take at least one sample from each tank that is currently in service and whenever oil is added to the tank, for as long as the tank remains in service. You need not take any samples from a storage tank while it is out of service. Rather, take a sample when the tank is brought into service and whenever oil is added to the tank, for as long as the tank remains in service. If multiple additions of oil are made to a particular in-service tank on a given day (e.g., from multiple deliveries), one sample taken after the final addition of oil is sufficient. For the purposes of this section, a fuel lot is defined as a shipment or delivery of a single type of fuel (e.g., ship load, barge load, group of trucks, group of railroad cars, oil delivery via pipeline from a tank farm, etc.). However, if multiple deliveries of a particular type of fuel are received from the same supply source in a given calendar month, the deliveries for that month may be considered, collectively, to comprise a fuel lot, requiring only one representative sample, subject to the following conditions:

(A) For coal, the “type” of fuel means the rank of the coal (i.e., anthracite, bituminous, sub-bituminous, or lignite). For fuel oil, the “type” of fuel means the grade number or classification of the oil (e.g., No. 1 oil, No. 2 oil, kerosene, Jet A fuel, etc.).

(B) The owner or operator shall document in the monitoring plan under §98.3(g)(5) how the monthly sampling of each type of fuel is performed.

(iii) For liquid fuels other than fuel oil, and for gaseous fuels other than natural gas (including biogas), sampling and analysis is required at least once per calendar quarter. To the extent practicable, consecutive quarterly samples shall be taken at least 30 days apart.

(iv) For other solid fuels (except MSW), weekly sampling is required to obtain composite samples, which are then analyzed monthly.

(v) For fuel blends that are received already mixed, or that are mixed on-site without measuring the exact amount of each component, as described in paragraph (a)(3)(ii) of this section, determine the HHV of the blend as follows. For blends of solid fuels (except MSW), weekly sampling is required to obtain composite samples, which are analyzed monthly. For blends of liquid or gaseous fuels, sampling and analysis is required at least once per calendar quarter. More frequent sampling is recommended if the composition of the blend varies significantly during the year.

(3) Special considerations for blending of fuels. In situations where different types of fuel listed in Table C–1 of this subpart (for example, different ranks of coal or different grades of fuel oil) are in the same state of matter (i.e., solid, liquid, or gas), and are blended prior to combustion, use the following procedures to determine the appropriate CO2 emission factor and HHV for the blend.

(i) If the fuels to be blended are received separately, and if the quantity (mass or volume) of each fuel is measured before the fuels are mixed and combusted, then, for each component of the blend, calculate the CO2 mass emissions separately. Substitute into Equation C–2a of this subpart the total measured mass or volume of the component fuel (from company records),
together with the appropriate default CO₂ emission factor from Table C–1, and the annual average HHV, calculated according to §98.33(a)(2)(ii). In this case, the fact that the fuels are blended prior to combustion is of no consequence.

(ii) If the fuel is received as a blend (i.e., already mixed) or if the components are mixed on site without precisely measuring the mass or volume of each one individually, a reasonable estimate of the relative proportions of the components of the blend must be made, using the best available information (e.g., the approximate annual average mass or volume percentage of each fuel, based on the typical or expected range of values). Determine the appropriate CO₂ emission factor and HHV for use in Equation C–2a of this subpart, as follows:

\[
(\text{EF})_B = \frac{\sum (\text{HHV})_i (\%\text{Fuel})_i (\text{EF})_i}{(\text{HHV})_B}
\]

(Eq. C–16)

Where:

- \((\text{EF})_B\) = Heat-weighted CO₂ emission factor for the blend (kg CO₂/mmBtu)
- \((\text{HHV})_B\) = Default high heat value for fuel “i” in the blend, from Table C–1 (mmBtu per mass or volume)
- \((\%\text{Fuel})_i\) = Estimated mass or volume percentage of fuel “i” (mass % or volume %, as applicable, expressed as a decimal fraction; e.g., 25% = 0.25)
- \((\text{EF})_i\) = Default CO₂ emission factor for fuel “i” from Table C–1 (mmBtu per mass or volume)
- \((\text{HHV})_B\) = Annual average high heat value for the blend, calculated according to §98.33(a)(2)(ii) (mmBtu per mass or volume)

(iii) Note that for the case described in paragraph (a)(3)(ii) of this section, if measured HHV values for the individual fuels in the blend or for the blend itself are not routinely received at the minimum frequency prescribed in paragraph (a)(2) of this section (or at a greater frequency), and if the unit qualifies to use Tier 1, calculate \((\text{HHV})_B^*\) the heat-weighted default HHV for the blend, using Equation C–17 of this section. Then, use Equation C–16 of this section, replacing the term \((\text{HHV})_B\) with \((\text{HHV})_B^*\) in the denominator, to determine the heat-weighted CO₂ emission factor for the blend. Finally, substitute into Equation C–1 of this subpart, the calculated values of \((\text{HHV})_B^*\) and \((\text{EF})_B\) along with the total mass or volume of the blend combusted during the reporting year, to determine the annual CO₂ mass emissions from combustion of the blend.
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Where:

\((\text{HHV})_{\star}\) = Heat-weighted default high heat value for the blend (mmBtu per mass or volume)

\((\text{HHV})_i\) = Default high heat value for fuel “i” in the blend, from Table C–1 (mmBtu per mass or volume)

\((%\text{Fuel})_i\) = Estimated mass or volume percentage of fuel “i” in the blend (mass % or volume %, as applicable, expressed as a decimal fraction)

(iv) If the fuel blend described in paragraph (a)(3)(ii) of this section consists of a mixture of fuel(s) listed in Table C–1 of this subpart and one or more fuels not listed in Table C–1, calculate \(\text{CO}_2\) and other GHG emissions only for the Table C–1 fuel(s), using the best available estimate of the mass or volume percentage(s) of the Table C–1 fuel(s) in the blend. In this case, Tier 1 shall be used, with the following modifications to Equations C–17 and C–1, to account for the fact that not all of the fuels in the blend are listed in Table C–1:

(A) In Equation C–17, apply the term \((\text{Fuel})_i\) only to the Table C–1 fuels. For each Table C–1 fuel, \((\text{Fuel})_i\) will be the estimated mass or volume percentage of the fuel in the blend, divided by the sum of the mass or volume percentages of the Table C–1 fuels. For example, suppose that a blend consists of two Table C–1 fuels (“A” and “B”) and one fuel type (“C”) not listed in the Table, and that the volume percentages of fuels A, B, and C in the blend, expressed as decimal fractions, are, respectively, 0.50, 0.30, and 0.20. The term \((\text{Fuel})_i\), in Equation C–17 for fuel A will be 0.50/(0.50 + 0.30) = 0.625, and for fuel B, \((\text{Fuel})_i\) will be 0.30/(0.50 + 0.30) = 0.375.

(B) In Equation C–1, the term “Fuel” will be equal to the total mass or volume of the blended fuel combusted during the year multiplied by the sum of the mass or volume percentages of the Table C–1 fuels in the blend. For the example in paragraph (a)(3)(iv)(A) of this section, “Fuel” = (Annual volume of the blend combusted)(0.80).

(4) If, for a particular type of fuel, HHV sampling and analysis is performed more often than the minimum frequency specified in paragraph (a)(2) of this section, the results of all valid fuel analyses shall be used in the GHG emission calculations.

(5) If, for a particular type of fuel, valid HHV values are obtained at less than the minimum frequency specified in paragraph (a)(2) of this section, appropriate substitute data values shall be used in the emissions calculations, in accordance with missing data procedures of §98.35.

(6) You must use one of the following appropriate fuel sampling and analysis methods. The HHV may be calculated using chromatographic analysis together with standard heating values of the fuel constituents, provided that the gas chromatograph is operated, maintained, and calibrated according to the manufacturer’s instructions. Alternatively, you may use a method published by a consensus-based standards organization if such a method exists, or you may use industry standard practice to determine the high heat values. Consensus-based standards organizations include, but are not limited to, the following: ASTM International (100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428–B2959, (800) 262–1373, http://www.astm.org), the American National Standards Institute (ANSI, 1819 L Street, NW., 6th floor, Washington, DC 20036, (202) 293–8020, http://wwwansi.org), the American Gas Association (AGA, 400 North Capitol Street, NW., 4th Floor, Washington, DC 20001, (202) 824–7000, http://www.aga.org), the American Society of Mechanical Engineers (ASME, Three Park Avenue, New York, NY 10016–5990, (800) 843–2763, http://www.asme.org), the American Petroleum Institute (API, 1220 L Street, NW., Washington, DC 20005–4070, (202) 682–8000, http://www.api.org), and the North American Energy Standards Board (NAESB, 801 Travis Street, Suite 1675, Houston, TX 77002, (713) 356–0060, http://www.api.org). The method(s) used shall be documented in the Monitoring Plan required under §98.3(g)(5).

(b) For the Tier 3 Calculation Methodology:

(1) You must calibrate each oil and gas flow meter according to §98.3(1) and the provisions of this paragraph (b)(1).

(i) Perform calibrations using any of the test methods and procedures in this paragraph (b)(1)(i). The method(s) used shall be documented in the Monitoring Plan required under §98.3(g)(5).
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(A) You may use the calibration procedures specified by the flow meter manufacturer.


(C) You may use an industry-accepted practice.

(ii) In addition to the initial calibration required by §98.3(i), recalibrate each fuel flow meter (except as otherwise provided in paragraph (b)(1)(iii) of this section) according to one of the following. You may recalibrate annually, at the minimum frequency specified by the manufacturer, or at the interval specified by industry standard practice.

(iii) Fuel billing meters are exempted from the initial and ongoing calibration requirements of this paragraph.

(iv) For the initial calibration of an orifice, nozzle, or venturi meter; in-situ calibration of the transmitters is sufficient. A primary element inspection (PEI) shall be performed at least once every three years.

(v) For the continuously-operating units and processes described in §98.3(i)(6), the required flow meter recalibrations and, if necessary, the PEIs may be postponed until the next scheduled maintenance outage.

(vi) If a mixture of liquid or gaseous fuels is transported by a common pipe, you may either separately meter each of the fuels prior to mixing, using flow meters calibrated according to §98.3(i), or consider the fuel mixture to be the "fuel type" and meter the mixed fuel, using a flow meter calibrated according to §98.3(i).

(2) Oil tank drop measurements (if used to determine liquid fuel use volume) shall be performed according to any an appropriate method published by a consensus-based standards organization (e.g., the American Petroleum Institute).

(3) The carbon content and, if applicable, molecular weight of the fuels shall be determined according to the procedures in this paragraph (b)(3).

(i) All fuel samples shall be taken at a location in the fuel handling system that provides a sample representative of the fuel combusted. The fuel sampling and analysis may be performed by either the owner or operator or by the supplier of the fuel.

(ii) For each type of fuel, the minimum required frequency for collecting and analyzing samples for carbon content and (if applicable) molecular weight is specified in this paragraph. When the sampling frequency is based on a specified time period (e.g., week, month, quarter, or half-year), fuel sampling and analysis is required for only those time periods in which the fuel is combusted.

(A) For natural gas, semiannual sampling and analysis is required (i.e., twice in a calendar year, with consecutive samples taken at least four months apart).
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(B) For coal and fuel oil and for any other solid or liquid fuel that is delivered in lots, analysis of at least one representative sample from each fuel lot is required. For fuel oil, as an alternative to sampling each fuel lot, a sample may be taken upon each addition of oil to the storage tank. Flow proportional sampling, continuous drip sampling, or daily manual oil sampling may also be used, in lieu of sampling each fuel lot. If the daily manual oil sampling option is selected, sampling from a particular tank is required only on days when oil from the tank is combusted by the unit (or units) served by the tank. If you elect to sample from the storage tank upon each addition of oil to the tank, you must take at least one sample from each tank that is currently in service and whenever oil is added to the tank, for as long as the tank remains in service. Rather, take a sample when the tank is brought into service and whenever oil is added to the tank, for as long as the tank remains in service. If multiple additions of oil are made to a particular service tank on a given day (e.g., from multiple deliveries), one sample taken after the final addition of oil is sufficient. For the purposes of this section, a fuel lot is defined as a shipment or delivery of a single type of fuel (e.g., ship load, barge load, group of trucks, group of railroad cars, oil delivery via pipeline from a tank farm, etc.). However, if multiple deliveries of a particular type of fuel are received from the same supply source in a given calendar month, the deliveries for that month may be considered, collectively, to comprise a fuel lot, requiring only one representative sample, subject to the following conditions:

1. For coal, the “type” of fuel means the rank of the coal (i.e., anthracite, bituminous, sub-bituminous, or lignite). For fuel oil, the “type” of fuel means the grade number or classification of the oil (e.g., No. 1 oil, No. 2 oil, kerosene, Jet A fuel, etc.).

2. The owner or operator shall document in the monitoring plan under §98.3(g)(5) how the monthly sampling of each type of fuel is performed.

(C) For liquid fuels other than fuel oil and for biogas, sampling and analysis is required at least once per calendar quarter. To the extent practicable, consecutive quarterly samples shall be taken at least 30 days apart.

(D) For other solid fuels (except MSW), weekly sampling is required to obtain composite samples, which are then analyzed monthly.

(E) For gaseous fuels other than natural gas and biogas (e.g., process gas), daily sampling and analysis to determine the carbon content and molecular weight of the fuel is required if continuous, on-line equipment, such as a gas chromatograph, is in place to make these measurements. Otherwise, weekly sampling and analysis shall be performed.

(F) For mixtures (blends) of solid fuels, weekly sampling is required to obtain composite samples, which are analyzed monthly. For blends of liquid fuels, and for gas mixtures consisting only of natural gas and biogas, sampling and analysis is required at least once per calendar quarter. For gas mixtures that contain gases other than natural gas (including biogas), daily sampling and analysis to determine the carbon content and molecular weight of the fuel is required if continuous, on-line equipment is in place to make these measurements. Otherwise, weekly sampling and analysis shall be performed.

(iii) If, for a particular type of fuel, sampling and analysis for carbon content and molecular weight is performed more often than the minimum frequency specified in paragraph (b)(3) of this section, the results of all valid fuel analyses shall be used in the GHG emission calculations.

(iv) If, for a particular type of fuel, sampling and analysis for carbon content and molecular weight is performed at less than the minimum frequency specified in paragraph (b)(3) of this section, appropriate substitute data values shall be used in the emissions calculations, in accordance with the missing data procedures of §98.35.

(v) To calculate the CO₂ mass emissions from combustion of a blend of fuels in the same state of matter (solid, liquid, or gas), you may either:
(A) Apply Equation C–3, C–4 or C–5 of this subpart (as applicable) to each component of the blend, if the mass or volume, the carbon content, and (if applicable), the molecular weight of each component are accurately measured prior to blending; or

(B) Consider the blend to be the “fuel type.” Then, at the frequency specified in paragraph (b)(3)(ii)(F) of this section, measure the carbon content and, if applicable, the molecular weight of the blend and calculate the annual average value of each parameter in the manner described in §98.33(a)(2)(ii). Also measure the mass or volume of the blended fuel combusted during the reporting year. Substitute these measured values into Equation C–3, C–4, or C–5 of this subpart (as applicable).

(4) You must use one of the following appropriate fuel sampling and analysis methods. The results of chromatographic analysis of the fuel may be used, provided that the gas chromatograph is operated, maintained, and calibrated according to the manufacturer’s instructions. Alternatively, you may use a method published by a consensus-based standards organization if such a method exists, or you may use industry standard practice to determine the carbon content and molecular weight (for gaseous fuel) of the fuel. Consensus-based standards organizations include, but are not limited to, the following: ASTM International (100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428–B2959, (800) 262–1373, http://www.astm.org), the American National Standards Institute (ANSI, 1819 L Street, NW., 6th floor, Washington, DC 20036, (202) 293–8020, http://www.ansi.org), the American Gas Association (AGA, 400 North Capitol Street, NW., 4th floor, Washington, DC 20001, (202) 824–7000, http://www.agan.org), the American Society of Mechanical Engineers (ASME, Three Park Avenue, New York, NY 10016–5990, (800) 843–2763, http://www.asme.org), the American Petroleum Institute (API, 1220 L Street, NW., Washington, DC 20005–4070, (202) 682–8000, http://www.api.org), and the North American Energy Standards Board (NAESB, 801 Travis Street, Suite 1675, Houston, TX 77002, (713) 336–6060, http://www.api.org). The method(s) used shall be documented in the Monitoring Plan required under §98.3(g)(5).

(c) For the Tier 4 Calculation Methodology, the CO₂, flow rate, and, if applicable) moisture monitors must be certified prior to the applicable deadline specified in §98.33(b)(5).

(1) For initial certification, you may use any one of the following three procedures in this paragraph.

(i) §§75.20(c)(2), (c)(4), and (c)(5) through (c)(7) of this chapter and appendix A to part 75 of this chapter.

(ii) The calibration drift test and relative accuracy test audit (RATA) procedures of Performance Specification 3 in appendix B to part 60 of this chapter (for the CO₂ concentration monitor) and Performance Specification 6 in appendix B to part 60 of this chapter (for the continuous emission rate monitoring system (CERMS)).

(iii) The provisions of an applicable State continuous monitoring program.

(2) If an O₂ concentration monitor is used to determine CO₂ concentrations, the applicable provisions of part 75 of this chapter, part 60 of this chapter, or an applicable State continuous monitoring program shall be followed for initial certification and on-going quality assurance, and all required RATAs of the monitor shall be done on a percent CO₂ basis.

(3) For ongoing quality assurance, follow the applicable procedures in either appendix B to part 75 of this chapter, appendix F to part 60 of this chapter, or an applicable State continuous monitoring program. If appendix F to part 60 of this chapter is selected for on-going quality assurance, perform daily calibration drift assessments for both the CO₂ monitor (or surrogate O₂ monitor) and the flow rate monitor, conduct cylinder gas audits of the CO₂ concentration monitor in three of the four quarters of each year (except for non-operating quarters), and perform annual RATAs of the CO₂ concentration monitor and the CERMS.

(4) For the purposes of this part, the stack gas volumetric flow rate monitor RATAs required by appendix B to part 75 of this chapter and the annual RATAs of the CERMS required by appendix F to part 60 of this chapter need only be done at one operating level, representing normal load or normal...
process operating conditions, both for initial certification and for ongoing quality assurance.

(5) If, for any source operating hour, quality assured data are not obtained with a CO₂ monitor (or surrogate O₂ monitor), flow rate monitor, or (if applicable) moisture monitor, use appropriate substitute data values in accordance with the missing data provisions of §98.35.

(6) For certain applications where combined process emissions and combustion emissions are measured, the CO₂ concentrations in the flue gas may be considerably higher than for combustion emissions alone. In such cases, the span of the CO₂ monitor may, if necessary, be set higher than the specified levels in the applicable regulations. If the CO₂ span value is set higher than 20 percent CO₂, the cylinder gas audits of the CO₂ monitor under appendix F to part 60 of this chapter may be performed at 40 to 60 percent and 80 to 100 percent of span, in lieu of the prescribed calibration levels of 5 to 8 percent CO₂ and 10 to 14 percent CO₂.

(7) Hourly average data from the CEMS shall be validated in a manner consistent with one of the following: §§60.13(h)(2)(i) through (h)(2)(vi) of this chapter; §75.10(d)(1) of this chapter; or the hourly data validation requirements of an applicable State CEM regulation.

(d) Except as otherwise provided in §98.33 (b)(1)(vi) and (b)(1)(vii), when municipal solid waste (MSW) is either the primary fuel combusted in a unit or the only fuel with a biogenic component combusted in the unit, determine the biogenic portion of the CO₂ emissions using ASTM D6866–08 Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples Using Radiocarbon Analysis (incorporated by reference, see §98.7) and ASTM D7459–08 Standard Practice for Collection of Integrated Samples for the Speciation of Biomass (Biogenic) and Fossil-Derived Carbon Dioxide Emitted from Stationary Emissions Sources (incorporated by reference, see §98.7). Perform the ASTM D7459–08 sampling and the ASTM D6866–08 analysis at least once in every calendar quarter in which MSW is combusted in the unit. Collect each gas sample during normal unit operating conditions for at least 24 total (not necessarily consecutive) hours, or longer if the facility deems it necessary to obtain a representative sample. Notwithstanding this requirement, if the types of fuels combusted and their relative proportions are consistent throughout the year, the minimum required sampling time may be reduced to 8 hours if at least two 8-hour samples and one 24-hour sample are collected under normal operating conditions, and arithmetic average of the biogenic fraction of the flue gas from the 8-hour samples (expressed as a decimal) is within ± 5 percent of the biogenic fraction from the 24-hour test. There must be no overlapping of the 8-hour and 24-hour test periods. Document the results of the demonstration in the unit's monitoring plan. If the types of fuels and their relative proportions are not consistent throughout the year, an optional sampling approach that facilities may wish to consider to obtain a more representative sample is to collect an integrated sample by extracting a small amount of flue gas (e.g., 1 to 5 cc) in each unit operating hour during the quarter. Separate the total annual CO₂ emissions into the biogenic and non-biogenic fractions using the average proportion of biogenic emissions of all samples analyzed during the reporting year. Express the results as a decimal fraction (e.g., 0.30, if 30 percent of the CO₂ is biogenic). When MSW is the primary fuel for multiple units at the facility, and the units are fed from a common fuel source, testing at only one of the units is sufficient.

(e) For other units that combust combinations of biomass fuel(s) (or heterogeneous fuels that have a biomass component, e.g., tires) and fossil (or other non-biogenic) fuel(s), in any proportions, ASTM D6866–08 (incorporated by reference, see §98.7) and ASTM D7459–08 (incorporated by reference, see §98.7) may be used to determine the biogenic portion of the CO₂ emissions in every calendar quarter in which biomass and non-biogenic fuels are co-fired in the unit. Follow the procedures in paragraph (d) of this section.

If the primary fuel for multiple units at the facility consists of tires, and the
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units are fed from a common fuel source, testing at only one of the units is sufficient.

(f) The records required under §98.3(g)(2)(i) shall include an explanation of how the following parameters are determined from company records (or, if applicable, from the best available information):

(1) Fuel consumption, when the Tier 1 and Tier 2 Calculation Methodologies are used, including cases where §98.36(c)(4) applies.

(2) Fuel consumption, when solid fuel is combusted and the Tier 3 Calculation Methodology is used.

(3) Fossil fuel consumption when §98.33(e)(2) applies to a unit that uses CEMS to quantify CO₂ emissions and that combusts both fossil and biomass fuels.

(4) Sorbent usage, when §98.33(d) applies.

(5) Quantity of steam generated by a unit when §98.33(a)(2)(iii) applies.

(6) Biogenic fuel consumption and high heating value, as applicable, under §§98.33(e)(5) and (e)(6).

(7) Fuel usage for CH₄ and N₂O emissions calculations under §98.33(c)(4)(ii).

(8) Mass of biomass combusted, for premixed fuels that contain biomass and fossil fuels under §98.33(e)(1)(iii).


§ 98.35 Procedures for estimating missing data.

Whenever a quality-assured value of a required parameter is unavailable (e.g., if a CEMS malfunction during unit operation or if a required fuel sample is not taken), a substitute data value for the missing parameter shall be used in the calculations.

(a) For all units subject to the requirements of the Acid Rain Program, and all other stationary combustion units subject to the requirements of this part that monitor and report emissions and heat input data year-round in accordance with part 75 of this chapter, the missing data substitution procedures in part 75 of this chapter shall be followed for CO₂ concentration, stack gas flow rate, percent moisture, fuel usage, and sorbent usage, the substitute data value shall be the best available estimate of the parameter, based on all available process data (e.g., electrical load, steam production, operating hours). You must document and retain records of the procedures used for all such estimates.

(b) Units that use the four tiers. You shall report the following information for stationary combustion units that use the Tier 1, Tier 2, Tier 3, or Tier 4 methodology in §98.33(a) to calculate CO₂ emissions, except as otherwise provided in paragraphs (c) and (d) of this section:

(1) The unit ID number.

(2) A code representing the type of unit.

(3) Maximum rated heat input capacity of the unit, in mmBtu/hr for boilers
and process heaters only and relevant units of measure for other combustion sources.

(4) Each type of fuel combusted in the unit during the report year.

(5) The methodology (i.e., tier) used to calculate the CO\textsubscript{2} emissions for each type of fuel combusted (i.e., Tier 1, 2, 3, or 4).

(6) The methodology start date, for each fuel type.

(7) The methodology end date, for each fuel type.

(8) For a unit that uses Tiers 1, 2, or 3:

(i) The annual CO\textsubscript{2} mass emissions (including biogenic CO\textsubscript{2}), and the annual CH\textsubscript{4}, and N\textsubscript{2}O mass emissions for each type of fuel combusted during the reporting year, expressed in metric tons of each gas and in metric tons of CO\textsubscript{2}e; and

(ii) Metric tons of biogenic CO\textsubscript{2} emissions (if applicable).

(9) For a unit that uses Tier 4:

(i) If the total annual CO\textsubscript{2} mass emissions measured by the CEMS consists entirely of non-biogenic CO\textsubscript{2} (i.e., CO\textsubscript{2} from fossil fuel combustion plus, if applicable, CO\textsubscript{2} from sorbent and/or process CO\textsubscript{2}), report the total annual CO\textsubscript{2} mass emissions, expressed in metric tons. You are not required to report the combustion CO\textsubscript{2} emissions by fuel type.

(ii) Report the total annual CO\textsubscript{2} mass emissions measured by the CEMS. If this total includes both biogenic and non-biogenic CO\textsubscript{2}, separately report the annual non-biogenic CO\textsubscript{2} mass emissions and the annual CO\textsubscript{2} mass emissions from biomass combustion, each expressed in metric tons. You are not required to report the combustion CO\textsubscript{2} emissions by fuel type.

(iii) An estimate of the heat input from each type of fuel listed in Table C–2 of this subpart that was combusted in the unit during the report year, and the annual CH\textsubscript{4} and N\textsubscript{2}O emissions for each of these fuels, expressed in metric tons of each gas and in metric tons of CO\textsubscript{2}e.

(10) Annual CO\textsubscript{2} emissions from sorbent (if calculated using Equation C–11 of this subpart), expressed in metric tons.

(c) Reporting alternatives for units using the four Tiers. You may use any of the applicable reporting alternatives of this paragraph to simplify the unit-level reporting required under paragraph (b) of this section:

(1) Aggregation of units. If a facility contains two or more units (e.g., boilers or combustion turbines), each of which has a maximum heat input capacity of 250 mmBtu/hr or less, you may report the combined GHG emissions for the group of units in lieu of reporting GHG emissions from the individual units, provided that the use of Tier 4 is not required or elected for any of the units and the units use the same tier for any common fuels combusted. If this option is selected, the following information shall be reported instead of the information in paragraph (b) of this section:

(i) Group ID number, beginning with the prefix “GP”.

(ii) [Reserved]

(iii) [Reserved]

(iv) The highest maximum rated heat input capacity of any unit in the group (mmBtu/hr).

(v) Each type of fuel combusted in the group of units during the reporting year.

(vi) Annual CO\textsubscript{2} mass emissions and annual CH\textsubscript{4}, and N\textsubscript{2}O mass emissions, aggregated for each type of fuel combusted in the group of units during the reporting year, expressed in metric tons of each gas and in metric tons of CO\textsubscript{2}e. If any of the units burn both fossil fuels and biomass, report also the annual CO\textsubscript{2} emissions from combustion of all fossil fuels combined and annual CO\textsubscript{2} emissions from combustion of all biomass fuels combined, expressed in metric tons.

(vii) The methodology (i.e., tier) used to calculate the CO\textsubscript{2} mass emissions for each type of fuel combusted in the units (i.e., Tier 1, Tier 2, or Tier 3).

(viii) The methodology start date, for each fuel type.

(ix) The methodology end date, for each fuel type.

(x) The calculated CO\textsubscript{2} mass emissions (if any) from sorbent expressed in metric tons.

(2) Monitored common stack or duct configurations. When the flue gases from two or more stationary fuel combustion units at a facility are combined together in a common stack or
duct before exiting to the atmosphere and if CEMS are used to continuously monitor CO$_2$ mass emissions at the common stack or duct according to the Tier 4 Calculation Methodology, you may report the combined emissions from the units sharing the common stack or duct, in lieu of separately reporting the GHG emissions from the individual units. This monitoring and reporting alternative may also be used when process off-gases or a mixture of combustion products and process gases are combined together in a common stack or duct before exiting to the atmosphere. Whenever the common stack or duct monitoring option is applied, the following information shall be reported instead of the information in paragraph (b) of this section:

(i) Common stack or duct identification number, beginning with the prefix “CS”.

(ii) Number of units sharing the common stack or duct. Report “1” when the flue gas flowing through the common stack or duct includes combustion products and/or process off-gases, and all of the effluent comes from a single unit (e.g., a furnace, kiln, petrochemical production unit, or smelter).

(iii) Combined maximum rated heat input capacity of the units sharing the common stack or duct (mmBtu/hr). This data element is required only when all of the units sharing the common stack are stationary fuel combustion units.

(iv) Each type of fuel combusted in the units during the year.

(v) The methodology (tier) used to calculate the CO$_2$ mass emissions, i.e., Tier 4.

(vi) The methodology start date.

(vii) The methodology end date.

(viii) Total annual CO$_2$ mass emissions measured by the CEMS, expressed in metric tons. If any of the units burn both fossil fuels and biomass, separately report the annual non-biogenic CO$_2$ mass emissions (i.e., CO$_2$ from fossil fuel combustion plus, if applicable, CO$_2$ from sorbent and/or process CO$_2$) and the annual CO$_2$ mass emissions from biomass combustion, each expressed in metric tons.

(ix) An estimate of the heat input from each type of fuel listed in Table C–2 of this subpart that was combusted during the report year in the units sharing the common stack or duct during the report year, and, for each of these fuels, the annual CH$_4$ and N$_2$O mass emissions from the units sharing the common stack or duct, expressed in metric tons of each gas and in metric tons of CO$_2$e.

(3) Common pipe configurations. When two or more stationary combustion units at a facility combust the same type of liquid or gaseous fuel and the fuel is fed to the individual units through a common supply line or pipe, you may report the combined emissions from the units served by the common supply line, in lieu of separately reporting the GHG emissions from the individual units, provided that the total amount of fuel combusted by the units is accurately measured at the common pipe or supply line using a fuel flow meter, or, for natural gas, the amount of fuel combusted may be obtained from gas billing records. For Tier 3 applications, the flow meter shall be calibrated in accordance with §98.34(b). If a portion of the fuel measured (or obtained from gas billing records) at the main supply line is diverted to either: A flare; or another stationary fuel combustion unit (or units), including units that use a CO$_2$ mass emissions calculation method in part 75 of this chapter; or a chemical or industrial process (where it is used as a raw material but not combusted), and the remainder of the fuel is distributed to a group of combustion units for which you elect to use the common pipe reporting option, you may use company records to subtract out the diverted portion of the fuel from the fuel measured (or obtained from gas billing records) at the main supply line prior to performing the GHG emissions calculations for the group of units using the common pipe option. If the diverted portion of the fuel is combusted, the GHG emissions from the diverted portion shall be accounted for in accordance with the applicable provisions of this part. When the common pipe option is selected, the applicable tier shall be used based on the maximum rated heat input capacity of the largest unit served by the common pipe configuration, except where the applicable tier is based on criteria other
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than unit size. For example, if the maximum rated heat input capacity of the largest unit is greater than 250 mmBtu/hr, Tier 3 will apply, unless the fuel transported through the common pipe is natural gas or distillate oil, in which case Tier 2 may be used, in accordance with §98.33(b)(2)(ii). As a second example, in accordance with §98.33(b)(1)(v), Tier 1 may be used regardless of unit size when natural gas is transported through the common pipe, if the annual fuel consumption is obtained from gas billing records in units of therms. When the common pipe reporting option is selected, the following information shall be reported instead of the information in paragraph (b) of this section:

(i) Common pipe identification number, beginning with the prefix “CP”.

(ii) [Reserved]

(iii) The highest maximum rated heat input capacity of any unit served by the common pipe (mmBtu/hr).

(iv) The fuels combusted in the units during the reporting year.

(v) The methodology used to calculate the CO₂ mass emissions (i.e., Tier 1, Tier 2, or Tier 3).

(vi) If the any of the units burns both fossil fuels and biomass, the annual CO₂ mass emissions from combustion of all fossil fuels and annual CO₂ emissions from combustion of all biomass fuels from the units served by the common pipe, expressed in metric tons.

(vii) Annual CO₂ mass emissions and annual CH₄ and N₂O emissions from each fuel type for the units served by the common pipe, expressed in metric tons of each gas and in metric tons of CO₂e.

(viii) Methodology start date.

(ix) Methodology end date.

The following alternative reporting option applies to facilities at which a common liquid or gaseous fuel supply is shared between one or more large combustion units, such as boilers or combustion turbines (including units subject to subpart D of this part and other units subject to part 75 of this chapter) and small combustion sources, including, but not limited to, space heaters, hot water heaters, and lab burners. In this case, you may simplify reporting by attributing all of the GHG emissions from combustion of the shared fuel to the large combustion unit(s), provided that:

(i) The total quantity of the fuel combusted during the report year in the units sharing the fuel supply is measured, either at the “gate” to the facility or at a point inside the facility, using a fuel flow meter, billing meter, or tank drop measurements (as applicable);

(ii) On an annual basis, at least 95 percent (by mass or volume) of the shared fuel is combusted in the large combustion unit(s), and the remainder is combusted in the small combustion sources. Company records may be used to determine the percentage distribution of the shared fuel to the large and small units; and

(iii) The use of this reporting option is documented in the Monitoring Plan required under §98.3(g)(5). Indicate in the Monitoring Plan which units share the common fuel supply and the method used to demonstrate that this alternative reporting option applies. For the small combustion sources, a description of the types of units and the approximate number of units is sufficient.

(d) Units subject to part 75 of this chapter.

(1) For stationary combustion units that are subject to subpart D of this part, you shall report the following unit-level information:

(i) Unit or stack identification numbers. Use exact same unit, common stack, common pipe, or multiple stack identification numbers that represent the monitored locations (e.g., 1, 2, CS001, MS1A, CP001, etc.) that are reported under §75.64 of this chapter.

(ii) Annual CO₂ emissions at each monitored location, expressed in both short tons and metric tons. Separate reporting of biogenic CO₂ emissions under §98.3(c)(4)(ii) and §98.3(c)(4)(ii)(A) is optional only for the 2010 reporting year, as provided in §98.3(c)(12).

(iii) Annual CH₄ and N₂O emissions at each monitored location, for each fuel type listed in Table C–2 that was combusted during the year (except as otherwise provided in §98.33(c)(4)(ii)(B)), expressed in metric tons of CO₂e.
(iv) The total heat input from each fuel listed in Table C–2 that was combusted during the year (except as otherwise provided in §98.33(c)(4)(ii)(B)), expressed in mmBtu.

(v) Identification of the Part 75 methodology used to determine the CO₂ mass emissions.

(vi) Methodology start date.

(vii) Methodology end date.

(viii) Acid Rain Program indicator.

(ix) Annual CO₂ mass emissions from the combustion of biomass, expressed in metric tons of CO₂e, except where the reporting provisions of §§98.3(c)(12)(i) through (c)(12)(ii) are implemented for the 2010 reporting year.

(2) For units that use the alternative CO₂ mass emissions calculation methods provided in §98.33(a)(5), you shall report the following unit-level information:

(i) Unit, stack, or pipe ID numbers. Use exact same unit, common stack, common pipe, or multiple stack identification numbers that represent the monitored locations (e.g., 1, 2, CS001, MS1A, CP001, etc.) that are reported under §75.64 of this chapter.

(ii) For units that use the alternative methods specified in §98.33(a)(5)(i) and (ii) to monitor and report heat input data year-round according to appendix D to part 75 of this chapter or §75.19 of this chapter:

(A) Each type of fuel combusted during the reporting year.

(B) The methodology used to calculate the CO₂ mass emissions for each fuel type.

(C) Methodology start date.

(D) Methodology end date.

(E) A code or flag to indicate whether heat input is calculated according to appendix D to part 75 of this chapter or §75.19 of this chapter.

(F) Annual CO₂ emissions at each monitored location, expressed in metric tons of CO₂e.

(G) Annual heat input from each type of fuel listed in Table C–2 of this subpart that was combusted during the reporting year, expressed in mmBtu.

(H) Annual CH₄ and N₂O emissions at each monitored location, from each fuel type listed in Table C–2 of this subpart that was combusted during the reporting year (except as otherwise provided in §98.33(c)(4)(ii)(D)), expressed in metric tons CO₂e.

(i) Annual CO₂ mass emissions from the combustion of biomass, expressed in metric tons CO₂e, except where the reporting provisions of §§98.3(c)(12)(i) through (c)(12)(ii) are implemented for the 2010 reporting year.

(iii) For units with continuous monitoring systems that use the alternative method for units with continuous monitoring systems in §98.33(a)(5)(iii) to monitor heat input year-round according to part 75 of this chapter:

(A) Each type of fuel combusted during the reporting year.

(B) Methodology used to calculate the CO₂ mass emissions.

(C) Methodology start date.

(D) Methodology end date.

(E) A code or flag to indicate that the heat input data is derived from CEMS measurements.

(F) The total annual CO₂ emissions at each monitored location, expressed in metric tons of CO₂e.

(G) Annual heat input from each type of fuel listed in Table C–2 of this subpart that was combusted during the reporting year, expressed in mmBtu.

(H) Annual CH₄ and N₂O emissions at each monitored location, from each fuel type listed in Table C–2 of this subpart that was combusted during the reporting year (except as otherwise provided in §98.33(c)(4)(ii)(B)), expressed in metric tons CO₂e.

(i) Annual CO₂ mass emissions from the combustion of biomass, expressed in metric tons CO₂e, except where the reporting provisions of §§98.3(c)(12)(i) through (c)(12)(ii) are implemented for the 2010 reporting year.

(e) Verification data. You must keep on file, in a format suitable for inspection and auditing, sufficient data to verify the reported GHG emissions. This data and information must, where indicated in this paragraph (e), be included in the annual GHG emissions report.

(1) The applicable verification data specified in this paragraph (e) are not required to be kept on file or reported for units that meet any one of the three following conditions:

(i) Are subject to the Acid Rain Program.

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(ii) Use the alternative methods for units with continuous monitoring systems provided in §98.33(a)(5).

(iii) Are not in the Acid Rain Program, but are required to monitor and report CO$_2$ mass emissions and heat input data year-round, in accordance with part 75 of this chapter.

(2) For stationary combustion sources using the Tier 1, Tier 2, Tier 3, and Tier 4 Calculation Methodologies in §98.33(a) to quantify CO$_2$ emissions, the following additional information shall be kept on file and included in the GHG emissions report, where indicated:

(i) For the Tier 1 Calculation Methodology, report the total quantity of each type of fuel combusted in the unit or group of aggregated units (as applicable) during the reporting year, in short tons for solid fuels, gallons for liquid fuels and standard cubic feet for gaseous fuels, or, if applicable, therms or mmBtu for natural gas.

(ii) For the Tier 2 Calculation Methodology, report:

(A) The total quantity of each type of fuel combusted in the unit or group of aggregated units (as applicable) during each month of the reporting year. Express the quantity of each fuel combusted during the measurement period in short tons for solid fuels, gallons for liquid fuels and scf for gaseous fuels.

(B) The frequency of the HHV determinations (e.g., once a month, once per fuel lot).

(C) The high heat values used in the CO$_2$ emissions calculations for each type of fuel combusted during the reporting year, in mmBtu per short ton for solid fuels, mmBtu per gallon for liquid fuels, and mmBtu per scf for gaseous fuels. Report a HHV value for each calendar month in which HHV determination is required. If multiple values are obtained in a given month, report the arithmetic average value for the month. Express carbon content as a decimal fraction for solid fuels, kg C per gallon for liquid fuels, and kg C per kg of fuel for gaseous fuels. Express the gas molecular weights in units of kg per kg-mole.

(D) The total number of valid carbon content determinations and, if applicable, molecular weight determinations made during the reporting year, for each fuel type.

(E) The number of substitute data values used for carbon content and, if applicable, molecular weight used in the annual GHG emissions calculations.

(F) The annual average HHV, when measured HHV data, rather than a default HHV from Table C–1 of this subpart, are used to calculate CH$_4$ and N$_2$O
emissions for a Tier 3 unit, in accordance with §98.33(c)(1).

(G) The value of the molar volume constant (MVC) used in Equation C–5 (if applicable).

(v) For the Tier 3 Calculation Methodology, keep records of the following:
(A) For liquid and gaseous fuel combustion, the dates and results of the initial calibrations and periodic recalibrations of the required fuel flow meters.
(B) For fuel oil combustion, the method from §98.34(b) used to make tank drop measurements (if applicable).
(C) The methods used to determine the carbon content and (if applicable) the molecular weight of each type of fuel combusted.
(D) The methods used to calibrate the fuel flow meters.
(E) The date on which each fuel sample was taken, except where fuel sampling data are received from the fuel supplier. In that case, keep records of the dates on which the results of the fuel analyses for carbon content and (if applicable) molecular weight are received.

(vi) For the Tier 4 Calculation Methodology, report:
(A) The total number of source operating hours in the reporting year.
(B) The cumulative CO\textsubscript{2} mass emissions in each quarter of the reporting year, i.e., the sum of the hourly values calculated from Equation C–6 or C–7 of this subpart (as applicable), in metric tons.
(C) For CO\textsubscript{2} concentration, stack gas flow rate, and (if applicable) stack gas moisture content, the percentage of source operating hours in which a substitute data value of each parameter was used in the emissions calculations.

(vii) For the Tier 4 Calculation Methodology, keep records of:
(A) Whether the CEMS certification and quality assurance procedures of part 75 of this chapter, part 60 of this chapter, or an applicable State continuous monitoring program were used.
(B) The dates and results of the initial certification tests of the CEMS.
(C) The dates and results of the major quality assurance tests performed on the CEMS during the reporting year, i.e., linearity checks, cylinder gas audits, and relative accuracy test audits (RATAs).

(viii) If CO\textsubscript{2} emissions that are generated from acid gas scrubbing with sorbent injection are not captured using CEMS, report:
(A) The total amount of sorbent used during the report year, in short tons.
(B) The molecular weight of the sorbent.
(C) The ratio ("R") in Equation C–11 of this subpart.

(ix) For units that combust both fossil fuel and biomass, when biogenic CO\textsubscript{2} is determined according to §98.33(e)(2), you shall report the following additional information, as applicable:
(A) The annual volume of CO\textsubscript{2} emitted from the combustion of all fuels\textit{i.e.}, \(V_{\text{total}}\), in scf.
(B) The annual volume of CO\textsubscript{2} emitted from the combustion of fossil fuels, \(V_{\text{ff}}\), in scf. If more than one type of fossil fuel was combusted, report the combustion volume of CO\textsubscript{2} for each fuel separately as well as the total.
(C) The annual volume of CO\textsubscript{2} emitted from the combustion of biomass\textit{i.e.}, \(V_{\text{bio}}\), in scf.
(D) The carbon-based F-factor used in Equation C–13 of this subpart, for each type of fossil fuel combusted, in scf CO\textsubscript{2} per mmBtu.
(E) The total quantity of each type of fossil fuel combusted during the reporting year, in lb, gallons, or scf, as appropriate.
(F) Annual biogenic CO\textsubscript{2} mass emissions, in metric tons.

(x) When ASTM methods D7459–08 (incorporated by reference, see §98.7) and D6866–08 (incorporated by reference, see §98.7) are used to determine the biogenic portion of the annual CO\textsubscript{2} emissions from MSW combustion, as described in §98.34(d), report:
(A) The results of each quarterly sample analysis, expressed as a decimal fraction (e.g., if the biogenic fraction of the CO\textsubscript{2} emissions from MSW combustion is 30 percent, report 0.30).
(B) The annual biogenic CO\textsubscript{2} mass emissions from MSW combustion, in metric tons.
§ 98.37 Records that must be retained.

In addition to the requirements of §98.3(g), you must retain the applicable records specified in §§98.34(f) and (g), 98.35(b), and 98.36(e).

§ 98.38 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Table C–1 to Subpart C of Part 98—Default CO₂ Emission Factors and High Heat Values for Various Types of Fuel

<table>
<thead>
<tr>
<th>Fuel type</th>
<th>Default high heat value</th>
<th>Default CO₂ emission factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthracite</td>
<td>25.09 mmBtu/short ton</td>
<td>103.54 kg CO₂/mmBtu</td>
</tr>
<tr>
<td>Bituminous</td>
<td>24.93</td>
<td>93.40</td>
</tr>
<tr>
<td>Subbituminous</td>
<td>17.25</td>
<td>97.02</td>
</tr>
<tr>
<td>Lignite</td>
<td>14.21</td>
<td>96.36</td>
</tr>
<tr>
<td>Coke</td>
<td>24.80</td>
<td>102.04</td>
</tr>
<tr>
<td>Coke (Commercial sector)</td>
<td>21.39</td>
<td>95.26</td>
</tr>
<tr>
<td>Coke (Industrial coking)</td>
<td>26.28</td>
<td>93.91</td>
</tr>
<tr>
<td>Coke (Industrial sector)</td>
<td>22.35</td>
<td>93.91</td>
</tr>
<tr>
<td>Coke (Electric Power sector)</td>
<td>19.73</td>
<td>94.38</td>
</tr>
<tr>
<td>Natural gas</td>
<td>1.028 × 10⁻³ mmBtu/scf</td>
<td>53.02 kg CO₂/mmBtu</td>
</tr>
<tr>
<td>Petroleum products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil No. 1</td>
<td>0.139</td>
<td>73.25</td>
</tr>
<tr>
<td>Distillate Fuel Oil No. 2</td>
<td>0.138</td>
<td>73.99</td>
</tr>
<tr>
<td>Distillate Fuel Oil No. 4</td>
<td>0.146</td>
<td>75.04</td>
</tr>
<tr>
<td>Residual Fuel Oil No. 5</td>
<td>0.140</td>
<td>72.93</td>
</tr>
<tr>
<td>Residual Fuel Oil No. 6</td>
<td>0.150</td>
<td>75.10</td>
</tr>
<tr>
<td>Used Oil</td>
<td>0.135</td>
<td>74.00</td>
</tr>
<tr>
<td>Kerosene</td>
<td>0.135</td>
<td>75.20</td>
</tr>
<tr>
<td>Liquefied petroleum gases (LPG)</td>
<td>0.092</td>
<td>62.98</td>
</tr>
<tr>
<td>Propane</td>
<td>0.091</td>
<td>61.46</td>
</tr>
<tr>
<td>Propylene</td>
<td>0.091</td>
<td>65.95</td>
</tr>
<tr>
<td>Ethane</td>
<td>0.089</td>
<td>62.64</td>
</tr>
</tbody>
</table>
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**Pt. 98, Subpt. C, Table C-2**

<table>
<thead>
<tr>
<th>Fuel type</th>
<th>Default high heat value</th>
<th>Default CO₂ emission factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethanol</td>
<td>0.084</td>
<td>68.44</td>
</tr>
<tr>
<td>Ethylene</td>
<td>0.100</td>
<td>67.43</td>
</tr>
<tr>
<td>Isobutane</td>
<td>0.097</td>
<td>64.91</td>
</tr>
<tr>
<td>Isobutylene</td>
<td>0.103</td>
<td>67.74</td>
</tr>
<tr>
<td>Butane</td>
<td>0.101</td>
<td>65.15</td>
</tr>
<tr>
<td>Butylene</td>
<td>0.103</td>
<td>67.73</td>
</tr>
<tr>
<td>Naphtha (&lt;401 deg F)</td>
<td>0.125</td>
<td>68.02</td>
</tr>
<tr>
<td>Natural Gasoline</td>
<td>0.110</td>
<td>66.83</td>
</tr>
<tr>
<td>Other Oil (&gt;401 deg F)</td>
<td>0.139</td>
<td>76.22</td>
</tr>
<tr>
<td>Pentanes Plus</td>
<td>0.110</td>
<td>70.02</td>
</tr>
<tr>
<td>Petrochemical Feedstocks</td>
<td>0.129</td>
<td>70.97</td>
</tr>
<tr>
<td>Petroleum Coke</td>
<td>0.143</td>
<td>102.41</td>
</tr>
<tr>
<td>Special Naphtha</td>
<td>0.125</td>
<td>72.34</td>
</tr>
<tr>
<td>Unfinished Oils</td>
<td>0.139</td>
<td>74.49</td>
</tr>
<tr>
<td>Heavy Gas Oils</td>
<td>0.148</td>
<td>74.92</td>
</tr>
<tr>
<td>Lubricants</td>
<td>0.144</td>
<td>74.27</td>
</tr>
<tr>
<td>Motor Gasoline</td>
<td>0.125</td>
<td>70.22</td>
</tr>
<tr>
<td>Aviation Gasoline</td>
<td>0.120</td>
<td>69.25</td>
</tr>
<tr>
<td>Kerosene-Type Jet Fuel</td>
<td>0.135</td>
<td>72.22</td>
</tr>
<tr>
<td>Asphalt and Road Oil</td>
<td>0.158</td>
<td>75.36</td>
</tr>
<tr>
<td>Crude Oil</td>
<td>0.138</td>
<td>74.49</td>
</tr>
</tbody>
</table>

Other fuels-solid

<table>
<thead>
<tr>
<th>Fuel type</th>
<th>Default high heat value</th>
<th>Default CO₂ emission factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Municipal Solid Waste</td>
<td>9.95</td>
<td>90.7</td>
</tr>
<tr>
<td>Tires</td>
<td>26.87</td>
<td>85.97</td>
</tr>
<tr>
<td>Plastics</td>
<td>38.00</td>
<td>75.00</td>
</tr>
<tr>
<td>Petroleum Coke</td>
<td>30.00</td>
<td>102.41</td>
</tr>
<tr>
<td>Other fuels—gaseous</td>
<td>mmBtu/scf kg CO₂/mmBtu</td>
<td></td>
</tr>
<tr>
<td>Blast Furnace Gas</td>
<td>$0.092 \times 10^{-3}$</td>
<td>274.32</td>
</tr>
<tr>
<td>Coke Oven Gas</td>
<td>$0.599 \times 10^{-3}$</td>
<td>46.85</td>
</tr>
<tr>
<td>Propane Gas</td>
<td>$2.516 \times 10^{-3}$</td>
<td>61.46</td>
</tr>
<tr>
<td>Fuel Gas</td>
<td>$1.388 \times 10^{-3}$</td>
<td>59.00</td>
</tr>
<tr>
<td>Biomass fuels—solid</td>
<td>mmBtu/short ton kg CO₂/mmBtu</td>
<td></td>
</tr>
<tr>
<td>Wood and Wood Residuals</td>
<td>15.38</td>
<td>93.80</td>
</tr>
<tr>
<td>Agricultural Byproducts</td>
<td>8.25</td>
<td>118.17</td>
</tr>
<tr>
<td>Peat</td>
<td>8.00</td>
<td>111.84</td>
</tr>
<tr>
<td>Solid Byproducts</td>
<td>25.83</td>
<td>105.51</td>
</tr>
<tr>
<td>Biomass fuels—gaseous</td>
<td>mmBtu/scf kg CO₂/mmBtu</td>
<td></td>
</tr>
<tr>
<td>Biogas (Captured methane)</td>
<td>$0.841 \times 10^{-3}$</td>
<td>52.07</td>
</tr>
<tr>
<td>Biomass Fuels—Liquid</td>
<td>mmBtu/gallon kg CO₂/mmBtu</td>
<td></td>
</tr>
<tr>
<td>Ethanol</td>
<td>0.084</td>
<td>68.44</td>
</tr>
<tr>
<td>Biodiesel</td>
<td>0.128</td>
<td>73.84</td>
</tr>
<tr>
<td>Biodiesel (100%)</td>
<td>0.128</td>
<td>73.84</td>
</tr>
<tr>
<td>Rendered Animal Fat</td>
<td>0.125</td>
<td>71.06</td>
</tr>
<tr>
<td>Vegetable Oil</td>
<td>0.120</td>
<td>81.55</td>
</tr>
</tbody>
</table>

---

1 Use of this default HHV is allowed only for: (a) Units that combust MSW, do not generate steam, and are allowed to use Tier 1; (b) units that derive no more than 10 percent of their annual heat input from MSW and/or tires; and (c) small batch incin-erators that combust no more than 1,000 tons of MSW per year.

2 Reporters subject to subpart X of this part that are complying with § 98.243(d) or subpart Y of this part may only use the default HHV and the default CO₂ emission factor for fuel gas combustion under the conditions prescribed in § 98.243(d)(2)(i) and (d)(2)(ii) and § 98.252(a)(1) and (a)(2), respectively. Otherwise, reporters subject to subpart X or subpart Y shall use either Tier 3 (Equation C–5) or Tier 4.


**TABLE C-2 TO SUBPART C—DEFAULT CH₄ AND N₂O EMISSION FACTORS FOR VARIOUS TYPES OF FUEL**

<table>
<thead>
<tr>
<th>Fuel type</th>
<th>Default CH₄ emission factor (kg CH₄/mmBtu)</th>
<th>Default N₂O emission factor (kg N₂O/mmBtu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal and Coke (All fuel types in Table C–1)</td>
<td>$1.1 \times 10^{-3}$</td>
<td>$1.6 \times 10^{-5}$</td>
</tr>
</tbody>
</table>
§ 98.40 Definition of the source category.

(a) The electricity generation source category comprises electricity generating units that are subject to the requirements of the Acid Rain Program and any other electricity generating units that are required to monitor and report to EPA CO\(_2\) mass emissions year-round according to 40 CFR part 75.

(b) This source category does not include portable equipment, emergency equipment, or emergency generators, as defined in §98.6.

§ 98.41 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains one or more electricity generating units and the facility meets the requirements of §98.2(a)(1).

§ 98.42 GHGs to report.

(a) For each electricity generating unit that is subject to the requirements of the Acid Rain Program or is otherwise required to monitor and report to EPA CO\(_2\) emissions year-round according to 40 CFR part 75, you must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO\(_2\), CH\(_4\), and N\(_2\)O by following the requirements of subpart C.

(b) For each stationary fuel combustion unit that does not generate electricity, you must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO\(_2\), CH\(_4\), and N\(_2\)O by following the requirements of subpart C of this part.

§ 98.43 Calculating GHG emissions.

(a) Except as provided in paragraph (b) of this section, continue to monitor and report CO\(_2\) mass emissions as required under §75.13 or section 2.3 of appendix G to 40 CFR part 75, and §75.64. Calculate CO\(_2\), CH\(_4\), and N\(_2\)O emissions as follows:

1. Convert the cumulative annual CO\(_2\) mass emissions reported in the fourth quarter electronic data report required under §75.64 from units of short tons to metric tons. To convert tons to metric tons, divide by 1.1023.

2. Calculate annual CH\(_4\) and N\(_2\)O mass emissions under this subpart by following the applicable method specified in §98.33(c).

(b) Calculate and report biogenic CO\(_2\) emissions under this subpart by following the applicable methods specified in §98.33(e). The CO\(_2\) emissions (excluding biogenic CO\(_2\)) for units subject to this subpart that are reported under §§98.33(c)(4)(i) and (c)(4)(iii)(B) shall be calculated by subtracting the biogenic CO\(_2\) mass emissions calculated according to §98.33(e) from the cumulative annual CO\(_2\) mass emissions from paragraph (a)(1) of this section. Separate calculation and reporting of biogenic...
CO₂ emissions is optional only for the 2010 reporting year pursuant to §98.3(c)(12) and required every year thereafter.

§ 98.44 Monitoring and QA/QC requirements.

Follow the applicable quality assurance procedures for CO₂ emissions in appendices B, D, and G to 40 CFR part 75.

§ 98.45 Procedures for estimating missing data.

Follow the applicable missing data substitution procedures in 40 CFR part 75 for CO₂ concentration, stack gas flow rate, fuel flow rate, high heating value, and fuel carbon content.

§ 98.46 Data reporting requirements.

The annual report shall comply with the data reporting requirements specified in §98.36(d)(1).

§ 98.47 Records that must be retained.

You shall comply with the recordkeeping requirements of §§98.3(g) and 98.37. Records retained under §75.57(h) of this chapter for missing data events satisfy the recordkeeping requirements of §98.3(g)(4) for those same events.

§ 98.48 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart E—Adipic Acid Production

§ 98.50 Definition of source category.

The adipic acid production source category consists of all adipic acid production facilities that use oxidation to produce adipic acid.

§ 98.51 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains an adipic acid production process and the facility meets the requirements of either §98.2(a)(1) or (2).

§ 98.52 GHGs to report.

(a) You must report N₂O process emissions at the facility level.

(b) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO₂, CH₄, and N₂O from each stationary combustion unit following the requirements of subpart C.

§ 98.53 Calculating GHG emissions.

(a) You must determine annual N₂O emissions from adipic acid production according to paragraphs (a)(1) or (2) of this section.

(1) Use a site-specific emission factor and production data according to paragraphs (b) through (i) of this section.

(2) Request Administrator approval for an alternative method of determining N₂O emissions according to paragraphs (a)(2)(i) and (ii) of this section.

(i) You must submit the request within 45 days following promulgation of this subpart or within the first 30 days of each subsequent reporting year.

(ii) If the Administrator does not approve your requested alternative method within 150 days of the end of the reporting year, you must determine the N₂O emissions for the current reporting period using the procedures specified in paragraphs (b) through (h) of this section.

(b) You must conduct an annual performance test according to paragraphs (b)(1) through (3) of this section.

(1) You must conduct the test on the vent stream from the nitric acid oxidation step of the process, referred to as the test point, according to the methods specified in §98.54(b) through (f). If multiple adipic acid production units exhaust to a common abatement technology and/or emission point, you must sample each process in the ducts before the emissions are combined, sample each process when only one process is operating, or sample the combined emissions when multiple processes are operating and base the site-specific emission factor on the combined production rate of the multiple adipic acid production units.

(2) You must conduct the performance test under normal process operating conditions.
(3) You must measure the adipic acid production rate during the test and calculate the production rate for the test period in metric tons per hour.

\[
EF_{N2O} = \frac{\sum_{i=1}^{n} C_{N2O} \times 1.14 \times 10^{-7} \times Q}{P}
\]  
(Eq. E-1)

Where:
- \( EF_{N2O} \) = Average facility-specific N\(_2\)O emission factor for each adipic acid production unit “\( z \)” (lb N\(_2\)O/ton adipic acid produced).
- \( C_{N2O} \) = N\(_2\)O concentration per test run during the performance test (ppm N\(_2\)O).
- \( 1.14 \times 10^{-7} \) = Conversion factor (lb/dscf-ppm N\(_2\)O).
- \( Q \) = Volumetric flow rate of effluent gas per test run during the performance test (dscf/hr).
- \( P \) = Production rate per test run during the performance test (tons adipic acid produced/hr).
- \( n \) = Number of test runs.

(c) Using the results of the performance test in paragraph (b) of this section, you must calculate an emission factor for each adipic acid unit according to Equation E-1 of this section.

(d) If any N\(_2\)O abatement technology “\( N \)” is located after your test point, you must determine the destruction efficiency according to paragraphs (d)(1), (2), or (3) of this section.

(1) Use the manufacturer’s specified destruction efficiency.

(2) Estimate the destruction efficiency through process knowledge. Examples of information that could constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current vent stream conditions. You must document how process knowledge was used to determine the destruction efficiency.

(3) Calculate the destruction efficiency by conducting an additional performance test on the vent stream following the N\(_2\)O abatement technology.

(e) If any N\(_2\)O abatement technology “\( N \)” is located after your test point, you must determine the annual amount of adipic acid produced while N\(_2\)O abatement technology “\( N \)” is operating according to §98.54(f). Then you must calculate the abatement factor for N\(_2\)O abatement technology “\( N \)” according to Equation E-2 of this section.

\[
AF_N = \frac{P_{z,N}}{P_z}
\]  
(Eq. E-2)

Where:
- \( AF_N \) = Abatement utilization factor of N\(_2\)O abatement technology “\( N \)” (fraction of annual production that abatement technology is operating).
- \( P_{z,N} \) = Annual adipic acid production during which N\(_2\)O abatement technology “\( N \)” was used on unit “\( z \)” (ton adipic acid produced).
- \( P_z \) = Total annual adipic acid production from unit “\( z \)” (ton acid produced).

(f) You must determine the annual amount of adipic acid produced according to §98.54(f).

(g) You must calculate N\(_2\)O emissions according to paragraph (g)(1), (2), (3), or (4) of this section for each adipic acid production unit.

(1) If one N\(_2\)O abatement technology “\( N \)” is located after your test point, you must use the emissions factor (determined in Equation E-1 of this section), the destruction efficiency (determined in paragraph (d) of this section), the annual adipic acid production (determined in paragraph (f) of this section), and the abatement utilization factor (determined in paragraph (e) of this section), according to Equation E-3a of this section.
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\[ E_{a,z} = \frac{EF_{N2O,z} \cdot P_z}{2205} \cdot (1 - (DF \cdot AF)) \]  
(Eq. E-3a)

Where:
- \( E_{a,z} \) = Annual \( N_2O \) mass emissions from adipic acid production unit “\( z \)” according to this Equation E-3a (metric tons).
- \( EF_{N2O,z} \) = \( N_2O \) emissions factor for unit “\( z \)” (lb \( N_2O/ \) ton adipic acid produced).
- \( P_z \) = Annual adipic acid produced from unit “\( z \)” (tons).
- \( DF \) = Destruction efficiency of \( N_2O \) abatement technology “\( N \)” (percent of \( N_2O \) removed from vent stream).
- \( AF \) = Abatement utilization factor of \( N_2O \) abatement technology “\( N \)” (percent of time that the abatement technology is operating).
- 2205 = Conversion factor (lb/metric ton).

(2) If multiple \( N_2O \) abatement technologies are located in series after your test point, you must use the emissions factor (determined in Equation E-1 of this section), the destruction efficiency (determined in paragraph (d) of this section), the annual adipic acid production (determined in paragraph (f) of this section), and the abatement utilization factor (determined in paragraph (e) of this section), according to Equation E-3b of this section:

\[ E_{b,z} = \frac{EF_{N2O,z} \cdot P_z}{2205} \cdot \left[ (1 - (DF_1 \cdot AF_1)) \cdot (1 - (DF_2 \cdot AF_2)) \cdot \ldots \cdot (1 - (DF_N \cdot AF_N)) \right] \]  
(Eq. E-3b)

Where:
- \( E_{b,z} \) = Annual \( N_2O \) mass emissions from adipic acid production unit “\( z \)” according to this Equation E-3b (metric tons).
- \( EF_{N2O,z} \) = \( N_2O \) emissions factor for unit “\( z \)” (lb \( N_2O/ \) ton adipic acid produced).
- \( P_z \) = Annual adipic acid produced from unit “\( z \)” (tons).
- \( DF_1 \) = Destruction efficiency of \( N_2O \) abatement technology 1 (percent of \( N_2O \) removed from vent stream).
- \( AF_1 \) = Abatement utilization factor of \( N_2O \) abatement technology 1 (percent of time that abatement technology 1 is operating).
- \( DF_2 \) = Destruction efficiency of \( N_2O \) abatement technology 2 (percent of \( N_2O \) removed from vent stream).
- \( AF_2 \) = Abatement utilization factor of \( N_2O \) abatement technology 2 (percent of time that abatement technology 2 is operating).
- 2205 = Conversion factor (lb/metric ton).
- \( N \) = Number of different \( N_2O \) abatement technologies.

(3) If multiple \( N_2O \) abatement technologies are located in parallel after your test point, you must use the emissions factor (determined in Equation E-1 of this section), the destruction efficiency (determined in paragraph (d) of this section), the annual adipic acid production (determined in paragraph (f) of this section), and the abatement utilization factor (determined in paragraph (e) of this section), according to Equation E-3c of this section:

\[ E_{c,z} = \frac{EF_{N2O,z} \cdot P_z}{2205} \cdot \left[ \sum_{1}^{N} \left( (1 - (DF_N \cdot AF_N)) \cdot FC_N \right) \right] \]  
(Eq. E-3c)

Where:
- \( E_{c,z} \) = Annual \( N_2O \) mass emissions from adipic acid production unit “\( z \)” according to this Equation E-3c (metric tons).
EF$_{N_{2}O}$ = $N_{2}O$ emissions factor for unit “z” (lb $N_{2}O$/ton adipic acid produced).
P$_{z}$ = Annual adipic acid produced from unit “z” (tons).
DF$_{N}$ = Destruction efficiency of $N_{2}O$ abatement technology “N” (percent of $N_{2}O$ removed from vent stream).
AF$_{N}$ = Abatement utilization factor of $N_{2}O$ abatement technology “N” (percent of total emissions from unit “z” that are sent to abatement technology “N”).
FC$_{N}$ = Fraction control factor of $N_{2}O$ abatement technology “N” (percent of time that the abatement technology is operating).
2205 = Conversion factor (lb/metric ton).
N = Number of different $N_{2}O$ abatement technologies with a fraction control factor.

(4) If no $N_{2}O$ abatement technologies are located after your test point, you must use the emissions factor (determined using Equation E–1 of this section) and the annual adipic acid production (determined in paragraph (f) of this section) according to Equation E–3d of this section for each adipic acid production unit.

$$E_{d,z} = \frac{EF_{N_{2}O}}{2205} \cdot \frac{P_{z}}{2205} \quad \text{(Eq. E-3d)}$$

Where:
E$_{d,z}$ = Annual $N_{2}O$ mass emissions from adipic acid production unit “z” according to this Equation E–3d (metric tons).
EF$_{N_{2}O}$ = $N_{2}O$ emissions factor for unit “z” (lb $N_{2}O$/ton adipic acid produced).
P$_{z}$ = Annual adipic acid produced from unit “z” (tons).
2205 = Conversion factor (lb/metric ton).

(h) You must determine the emissions for the facility by summing the unit level emissions according to Equation E–4 of this section.

$$N_{2}O = \sum_{z=1}^{M} E_{a,z} + E_{b,z} + E_{c,z} + E_{d,z} \quad \text{(Eq. E-4)}$$

Where:
E$_{a,z}$ = Annual $N_{2}O$ mass emissions from adipic acid production unit “z” according to Equation E–3a of this section (metric tons).
E$_{b,z}$ = Annual $N_{2}O$ mass emissions from adipic acid production unit “z” according to Equation E–3b of this section (metric tons).
E$_{c,z}$ = Annual $N_{2}O$ mass emissions from adipic acid production unit “z” according to Equation E–3c of this section (metric tons).
E$_{d,z}$ = Annual $N_{2}O$ mass emissions from adipic acid production unit “z” according to Equation E–3d of this section (metric tons).
M = Total number of adipic acid production units.

(i) You must determine the amount of process $N_{2}O$ emissions that is sold or transferred off site (if applicable). You can determine the amount using existing process flow meters and $N_{2}O$ analyzers.

[75 FR 66458, Oct. 28, 2010]
(1) EPA Method 320, Measurement of Vapor Phase Organic and Inorganic Emissions by Extractive Fourier Transform Infrared (FTIR) Spectroscopy in 40 CFR part 63, Appendix A;
(2) ASTM D6348–03 Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy (incorporated by reference, see §98.7); or
(3) An equivalent method, with Administrator approval.

(c) You must determine the adipic acid production rate during the performance test according to paragraph (c)(1) or (c)(2) of this section.

(1) Direct measurement (such as using flow meters or weigh scales).
(2) Existing plant procedures used for accounting purposes.

(d) You must determine the volumetric flow rate during the performance test in conjunction with the applicable EPA methods in 40 CFR part 60, appendices A–1 through A–4. Conduct three emissions test runs of 1 hour each. All QA/QC procedures specified in the reference test methods and any associated performance specifications apply. For each test, the facility must prepare an emissions factor determination report that must include the items in paragraphs (d)(1) through (d)(3) of this section:

(1) Analysis of samples, determination of emissions, and raw data.
(2) All information and data used to derive the emissions factor.
(3) The production rate(s) during the performance test and how each production rate was determined.

(e) You must determine the monthly amount of adipic acid produced. You must also determine the monthly amount of adipic acid produced during which N₂O abatement technology, located after the test point, is operating. These monthly amounts are determined according to the methods in paragraphs (c)(1) or (2) of this section.

(f) You must determine the annual amount of adipic acid produced. You must also determine the annual amount of adipic acid produced during which N₂O abatement technology located after the test point is operating. These are determined by summing the respective monthly adipic acid production quantities determined in paragraph (e) of this section.


§ 98.55 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter shall be used in the calculations as specified in paragraphs (a) and (b) of this section.

(a) For each missing value of monthly adipic acid production, the substitute data shall be the best available estimate based on all available process data or data used for accounting purposes (such as sales records).

(b) For missing values related to the performance test, including emission factors, production rate, and N₂O concentration, you must conduct a new performance test according to the procedures in §98.54 (a) through (d).

§ 98.56 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) through (l) of this section at the facility level.

(a) Annual process N₂O emissions from adipic acid production (metric tons).
(b) Annual adipic acid production (tons).
(c) Annual adipic acid production during which N₂O abatement technology (located after the test point) is operating (tons).
(d) Annual process N₂O emissions from adipic acid production facility that is sold or transferred off site (metric tons).
(e) Number of abatement technologies (if applicable).
(f) Types of abatement technologies used (if applicable).
(g) Abatement technology destruction efficiency for each abatement technology (percent destruction).
(h) Abatement utilization factor for each abatement technology (fraction of annual production that abatement technology is operating).
(i) Number of times in the reporting year that missing data procedures were followed to measure adipic acid production (months).

(j) If you conducted a performance test and calculated a site-specific emissions factor according to §98.53(a)(1), each annual report must also contain the information specified in paragraphs (j)(1) through (7) of this section for each adipic acid production unit.

(1) Emission factor (lb N₂O/ton adipic acid);

(2) Test method used for performance test;

(3) Production rate per test run during performance test (tons/hr);

(4) N₂O concentration per test run during performance test (ppm N₂O);

(5) Volumetric flow rate per test run during performance test (dscf/hr);

(6) Number of test runs;

(7) Number of times in the reporting year that a performance test had to be repeated (number).

(k) If you requested Administrator approval for an alternative method of determining N₂O emissions under §98.53(a)(2), each annual report must also contain the information specified in paragraphs (k)(1) through (4) of this section for each adipic acid production facility.

(1) Name of alternative method;

(2) Description of alternative method;

(3) Request date;

(4) Approval date.

(l) Fraction control factor for each abatement technology (percent of total emissions from the production unit that are sent to the abatement technology) if equation E–3c is used.

§ 98.58 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart F—Aluminum Production

§ 98.60 Definition of the source category.

(a) A primary aluminum production facility manufactures primary aluminum using the Hall-Héroult manufacturing process. The primary aluminum manufacturing process comprises the following operations:

(1) Electrolysis in prebake and Sderberg cells.

(2) Anode baking for prebake cells.

(b) This source category does not include experimental cells or research and development process units.

§ 98.61 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains an aluminum production process and the facility meets the requirements of either §98.2(a)(1) or (a)(2).

§ 98.62 GHGs to report.

You must report:

(a) Perfluoromethane (CF₃), and perfluoroethane (C₂F₆) emissions from
anode effects in all prebake and Sderberg electrolysis cells.

(b) CO₂ emissions from anode consumption during electrolysis in all prebake and Sderberg electrolysis cells.

(c) CO₂ emissions from on-site anode baking.

(d) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO₂, N₂O, and CH₄ emissions from each stationary fuel combustion unit by following the requirements of subpart C.

§ 98.63 Calculating GHG emissions.

(a) The annual value of each PFC compound (CF₄, C₂F₆) shall be estimated from the sum of monthly values using Equation F-1 of this section:

\[ E_{PFC} = \sum_{m=1}^{m=12} E_m \]  
(Eq. F-1)

Where:
\[ E_{PFC} = \text{Annual emissions of each PFC compound from aluminum production (metric tons PFC).} \]
\[ E_m = \text{Emissions of the individual PFC compound from aluminum production for the month “m” (metric tons PFC).} \]

(b) Use Equation F-2 of this section to estimate CF₄ emissions from anode effect duration or Equation F-3 of this section to estimate CF₄ emissions from overvoltage, and use Equation F-4 of this section to estimate C₂F₆ emissions from anode effects from each prebake and Sderberg electrolysis cell.

\[ E_{CF4} = S_{CF4} \times AEM \times MP \times 0.001 \]  
(Eq. F-2)

Where:
\[ E_{CF4} = \text{Monthly CF}_4 \text{ emissions from aluminum production (metric tons CF}_4\text{).} \]
\[ S_{CF4} = \text{The slope coefficient ((kg CF}_4/\text{metric ton Al})/(AE-Mins/cell-day)).} \]
\[ AEM = \text{The anode effect minutes per cell-day (AE-Mins/cell-day).} \]
\[ MP = \text{Metal production (metric tons Al), where AEM and MP are calculated monthly.} \]

\[ E_{CF4} = ER_{CF4} \times MP \times 0.001 \]  
(Eq. F-3)

Where:
\[ E_{CF4} = \text{Monthly CF}_4 \text{ emissions from aluminum production (metric tons CF}_4\text{).} \]
\[ ER_{CF4} = \text{The overvoltage emission factor (kg CF}_4/\text{metric ton Al).} \]
\[ MP = \text{Metal production (metric tons Al), where MP is calculated monthly.} \]

\[ E_{C2F6} = E_{CF4} \times \frac{F_{C2F6/CF4}}{0.001} \]  
(Eq. F-4)

Where:
\[ E_{C2F6} = \text{Monthly C}_2\text{F}_6 \text{ emissions from aluminum production (metric tons C}_2\text{F}_6\text{).} \]
\[ E_{CF4} = \text{CF}_4 \text{ emissions from aluminum production (kg CF}_4). \]
\[ F_{C2F6/CF4} = \text{The weight fraction of C}_2\text{F}_6/\text{CF}_4 \text{ (kg C}_2\text{F}_6/\text{kg CF}_4).} \]
\[ 0.001 = \text{Conversion factor from kg to metric tons, where E_{C2F6} is calculated monthly.} \]

(c) You must calculate and report the annual process CO₂ emissions from anode consumption during electrolysis and anode baking of prebake cells using either the procedures in paragraph (d) of this section, the procedures in paragraphs (e) and (f) of this section, or the procedures in paragraph (g) of this section.

(d) Calculate and report under this subpart the process CO₂ emissions by
operating and maintaining CEMS according to the Tier 4 Calculation Methodology in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(e) Use the following procedures to calculate CO₂ emissions from anode consumption during electrolysis:

(1) For Prebake cells: you must calculate CO₂ emissions from anode consumption using Equation F-5 of this section:

\[
E_{CO2} = NAC \times MP \times \left(\left[100 - S_a - Ash_a\right]/100\right) \times (44/12) \quad \text{(Eq. F-5)}
\]

Where:
- \( E_{CO2} \) = Annual CO₂ emissions from prebaked anode consumption (metric tons CO₂).
- \( NAC \) = Net annual prebaked anode consumption per metric ton Al (metric tons C/metric tons Al).
- \( MP \) = Annual metal production (metric tons Al).
- \( S_a \) = Sulfur content in baked anode (percent weight).
- \( Ash_a \) = Ash content in baked anode (percent weight).
- \( 44/12 \) = Ratio of molecular weights, CO₂ to carbon.

(2) For Sderberg cells you must calculate CO₂ emissions using Equation F-6 of this section:

\[
E_{CO2} = (PC \times MP - \left[CSM \times MP\right]/1000 - BC/100 \times PC \times MP \times [S_p + Ash_p + H_p]/100 - [100 - BC]/100 \times PC \times MP \times [S_c + Ash_c]/100 - MP \times CD) \times (44/12) \quad \text{(Eq. F-6)}
\]

Where:
- \( E_{CO2} \) = Annual CO₂ emissions from paste consumption (metric ton CO₂).
- \( PC \) = Annual paste consumption (metric ton Al).
- \( MP \) = Annual metal production (metric ton Al).
- \( CSM \) = Annual emissions of cyclohexane soluble matter (kg/metric ton Al).
- \( BC \) = Binder content of paste (percent weight).
- \( S_p \) = Sulfur content of pitch (percent weight).
- \( Ash_p \) = Ash content of pitch (percent weight).
- \( H_p \) = Hydrogen content of pitch (percent weight).
- \( S_c \) = Sulfur content in calcined coke (percent weight).
- \( Ash_c \) = Ash content in calcined coke (percent weight).
- \( CD \) = Carbon in skimmed dust from Sderberg cells (metric ton C/metric ton Al).
- \( 44/12 \) = Ratio of molecular weights, CO₂ to carbon.

(f) Use the following procedures to calculate CO₂ emissions from anode baking of prebake cells:

(1) Use Equation F-7 of this section to calculate emissions from pitch volatiles combustion:

\[
E_{CO2PV} = (GA - H_w - BA - WT) \times (44/12) \quad \text{(Eq. F-7)}
\]

Where:
- \( E_{CO2PV} \) = Annual CO₂ emissions from pitch volatiles combustion (metric tons CO₂).
- \( GA \) = Initial weight of green anodes (metric tons).
- \( H_w \) = Annual hydrogen content in green anodes (metric tons).
- \( BA \) = Annual baked anode production (metric tons).
- \( WT \) = Annual waste tar collected (metric tons).
$\frac{44}{12} = \text{Ratio of molecular weights, CO}_2\text{ to carbon.}$

(2) Use Equation F–8 of this section to calculate emissions from bake furnace packing material.

$$E_{\text{CO}_2PC} = PCC \times BA \times \left(\left[100 - S_{pc} - Ash_{pc}\right]/100\right) \times \left(\frac{44}{12}\right) \quad (\text{Eq. F-8})$$

Where:
- $E_{\text{CO}_2PC} = \text{Annual CO}_2\text{ emissions from bake furnace packing material (metric tons CO}_2\right).$
- $PCC = \text{Annual packing coke consumption (metric tons/metric ton baked anode).}$
- $BA = \text{Annual baked anode production (metric tons).}$
- $S_{pc} = \text{Sulfur content in packing coke (percent weight).}$
- $Ash_{pc} = \text{Ash content in packing coke (percent weight).}$
- $\frac{44}{12} = \text{Ratio of molecular weights, CO}_2\text{ to carbon.}$

(g) If process CO$_2$ emissions from anode consumption during electrolysis or anode baking of prebake cells are vented through the same stack as any combustion unit or process equipment that reports CO$_2$ emissions using a CEMS that complies with the Tier 4 Calculation Methodology in subpart C of this part (General Stationary Fuel Combustion Sources), then the calculation methodology in paragraphs (d) and (e) of this section shall not be used to calculate those process emissions. The owner or operation shall report under this subpart the combined stack emissions according to the Tier 4 Calculation Methodology in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

§98.64 Monitoring and QA/QC requirements.

(a) Effective December 31, 2010 for smelters with no prior measurement or effective December 31, 2012, for facilities with historic measurements, the smelter-specific slope coefficients, overvoltage emission factors, and weight fractions used in Equations F–2, F–3, and F–4 of this subpart must be measured in accordance with the recommendations of the EPA/IAI Protocol for Measurement of Tetrafluoromethane (CF$_4$) and Hexafluoroethane (C$_2$F$_6$) Emissions from Primary Aluminum Production (2008) (incorporated by reference, see §98.7), except the minimum frequency of measurement shall be every 10 years unless a change occurs in the control algorithm that affects the mix of types of anode effects or the nature of the anode effect termination routine. Facilities which operate at less than 0.2 anode effect minutes per cell day or operate with less than 1.4mV anode effect overvoltage can use either smelter-specific slope coefficients or the technology specific default values in Table F–1 of this subpart.

(b) The minimum frequency of the measurement and analysis is annually except as follows:

1. Monthly for anode effect minutes per cell day (or anode effect overvoltage and current efficiency).
3. Smelter-specific slope coefficients, overvoltage emission factors, and weight fractions according to paragraph (a) of this section.

(c) Sources may use either smelter-specific values from annual measurements of parameters needed to complete the equations in §98.63 (e.g., sulfur, ash, and hydrogen contents) or the default values shown in Table F–2 of this subpart.

§98.65 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable (e.g., if a meter malfunctions during unit operation or if a required sample measurement is not taken), a substitute
data value for the missing parameter shall be used in the calculations, according to the following requirements:

(a) Where anode or paste consumption data are missing, CO₂ emissions can be estimated from aluminum production per Equation F–8 of this section.

\[
\text{ECO}_2 = \text{EF}_p \times \text{MP}_p + \text{EF}_s \times \text{MP}_s \quad (\text{Eq. F–8})
\]

Where:
- \(\text{ECO}_2\) = CO₂ emissions from anode and/or paste consumption, metric tons CO₂.
- \(\text{EF}_p\) = Prebake technology specific emission factor (1.6 metric tons CO₂/metric ton aluminum produced).
- \(\text{MP}_p\) = Metal production from prebake process (metric tons Al).
- \(\text{EF}_s\) = Sderberg technology specific emission factor (1.7 metric tons CO₂/metric ton Al produced).
- \(\text{MP}_s\) = Metal production from Sderberg process (metric tons Al).

(b) For other parameters, use the average of the two most recent data points after the missing data.


§ 98.66 Data reporting requirements.

In addition to the information required by §98.3(c), you must report the following information at the facility level:

(a) Annual aluminum production in metric tons.

(b) Type of smelter technology used.

(c) The following PFC-specific information on an annual basis:
   (1) Perfluoromethane and perfluoroethane emissions from anode effects in all prebake and all Sderberg electrolysis cells combined.
   (2) Anode effect minutes per cell-day (AE-mins/cell-day), anode effect frequency (AE/cell-day), anode effect duration (minutes). (Or anode effect overvoltage factor (kg CF₄/metric ton Al)/(mV/cell day)), potline overvoltage (mV/cell day), current efficiency (%).)
   (3) Smelter-specific slope coefficients (or overvoltage emission factors) and the last date when the smelter-specific slope coefficients (or overvoltage emission factors) were measured.
   (d) Method used to measure the frequency and duration of anode effects (or overvoltage).

(e) The following CO₂-specific information for prebake cells:
   (1) Annual anode consumption.
   (2) Annual CO₂ emissions from the smelter.

(f) The following CO₂-specific information for Sderberg cells:
   (1) Annual paste consumption.
   (2) Annual CO₂ emissions from the smelter.

(g) Smelter-specific inputs to the CO₂ process equations (e.g., levels of sulfur and ash) that were used in the calculation, on an annual basis.

(h) Exact data elements required will vary depending on smelter technology (e.g., point-feed prebake or Sderberg) and process control technology (e.g., Pechiney or other).


§ 98.67 Records that must be retained.

In addition to the information required by §98.3(g), you must retain the following records:

(a) Monthly aluminum production in metric tons.

(b) Type of smelter technology used.

(c) The following PFC-specific information on a monthly basis:
   (1) Perfluoromethane and perfluoroethane emissions from anode effects in prebake and Sderberg electrolysis cells.
   (2) Anode effect minutes per cell-day (AE-mins/cell-day), anode effect frequency (AE/cell-day), anode effect duration (minutes). (Or anode effect overvoltage factor (kg CF₄/metric ton Al)/(mV/cell day)), potline overvoltage (mV/cell day), current efficiency (%)).
   (3) Smelter-specific slope coefficients and the last date when the smelter-specific slope coefficients were measured.
   (d) Method used to measure the frequency and duration of anode effects (or overvoltage).
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(or to measure anode effect overvoltage and current efficiency).

(e) The following CO₂-specific information for prebake cells:
(1) Annual anode consumption.
(2) Annual CO₂ emissions from the smelter.
(f) The following CO₂-specific information for Sderberg cells:
(1) Annual paste consumption.
(2) Annual CO₂ emissions from the smelter.
(g) Smelter-specific inputs to the CO₂ process equations (e.g., levels of sulfur and ash) that were used in the calculation, on an annual basis.
(h) Exact data elements required will vary depending on smelter technology (e.g., point-feed prebake or Sderberg) and process control technology (e.g., Pechiney or other).

§ 98.68 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

### Table F–1 to Subpart F of Part 98—Slope and Overvoltage Coefficients for the Calculation of PFC Emissions From Aluminum Production

<table>
<thead>
<tr>
<th>Technology</th>
<th>CF₄ slope coefficient [(kg CF₄/metric ton Al)/[AE-Mins/cell-day]]</th>
<th>CF₄ overvoltage coefficient [(kg CF₄/metric ton Al)/(mV)]</th>
<th>Weight fraction C₂F₆/CF₄</th>
<th>C₆F₆/CF₄</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center Worked Prebake (CWPB)</td>
<td>0.143</td>
<td>1.16</td>
<td>0.121</td>
<td></td>
</tr>
<tr>
<td>Side Worked Prebake (SWPB)</td>
<td>0.272</td>
<td>3.65</td>
<td>0.252</td>
<td></td>
</tr>
<tr>
<td>Vertical Stud Sderberg (VSS)</td>
<td>0.099</td>
<td>NA</td>
<td>0.053</td>
<td></td>
</tr>
<tr>
<td>Horizontal Stud Sderberg (HSS)</td>
<td>0.099</td>
<td>NA</td>
<td>0.085</td>
<td></td>
</tr>
</tbody>
</table>

[74 FR 79156, Dec. 17, 2010]

### Table F–2 to Subpart F of Part 98—Default Data Sources for Parameters Used for CO₂ Emissions

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Data source</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO₂ Emissions from Prebake Cells (CWPB and SWPB)</td>
<td></td>
</tr>
<tr>
<td>MP: metal production (metric tons AI)</td>
<td>Individual facility records.</td>
</tr>
<tr>
<td>NAC: net annual prebaked anode consumption per metric ton Al (metric tons C/metric tons Al)</td>
<td>Individual facility records.</td>
</tr>
<tr>
<td>Sₐ: sulfur content in baked anode (percent weight)</td>
<td>2.0.</td>
</tr>
<tr>
<td>Ashₐ: ash content in baked anode (percent weight)</td>
<td>0.4.</td>
</tr>
<tr>
<td>CO₂ Emissions From Pitch Volatiles Combustion (CWPB and SWPB)</td>
<td></td>
</tr>
<tr>
<td>PC: annual paste consumption (metric ton/metric ton Al)</td>
<td>Individual facility records.</td>
</tr>
<tr>
<td>CSM: annual emissions of cyclohexane soluble matter (kg/metric ton Al)</td>
<td>HSS: 4.0, VSS: 0.5</td>
</tr>
<tr>
<td>S₈ₐ: sulfur content of pitch (percent weight)</td>
<td>Wet Paste: 27.</td>
</tr>
<tr>
<td>Ash₈ₐ: ash content of pitch (percent weight)</td>
<td>0.6.</td>
</tr>
<tr>
<td>H₂ₐ: hydrogen content of pitch (percent weight)</td>
<td>0.2.</td>
</tr>
<tr>
<td>S₉ₐ: sulfur content in calcined coke (percent weight)</td>
<td>3.3.</td>
</tr>
<tr>
<td>Ash₉ₐ: ash content in calcined coke (percent weight)</td>
<td>1.9.</td>
</tr>
<tr>
<td>CD: carbon in skimmed dust from Sderberg cells (metric ton C/metric ton Al)</td>
<td>0.2.</td>
</tr>
<tr>
<td>CO₂ Emissions from Pitch Volatiles Combustion (VSS and HSS)</td>
<td></td>
</tr>
<tr>
<td>GA: initial weight of green anodes (metric tons)</td>
<td>Individual facility records.</td>
</tr>
<tr>
<td>Hₐ: annual hydrogen content in green anodes (metric tons)</td>
<td>0.005 × GA.</td>
</tr>
<tr>
<td>BA: annual baked anode production (metric tons)</td>
<td>Individual facility records.</td>
</tr>
<tr>
<td>(a) Riedhammer furnaces</td>
<td>(a) 0.005 × GA.</td>
</tr>
<tr>
<td>(b) all other furnaces</td>
<td>(b) insignificant.</td>
</tr>
<tr>
<td>CO₂ Emissions From Bake Furnace Packing Materials (CWPB and SWPB)</td>
<td></td>
</tr>
<tr>
<td>PCC: annual packing coke consumption (metric tons/metric ton baked anode)</td>
<td>0.015.</td>
</tr>
<tr>
<td>BA: annual baked anode production (metric tons)</td>
<td>Individual facility records.</td>
</tr>
</tbody>
</table>

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Subpart G—Ammonia Manufacturing

§ 98.70 Definition of source category.

The ammonia manufacturing source category comprises the process units listed in paragraphs (a) and (b) of this section.

(a) Ammonia manufacturing processes in which ammonia is manufactured from a fossil-based feedstock produced via steam reforming of a hydrocarbon.

(b) Ammonia manufacturing processes in which ammonia is manufactured through the gasification of solid and liquid raw material.

§ 98.71 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains an ammonia manufacturing process and the facility meets the requirements of either §98.2(a)(1) or (2).

§ 98.72 GHGs to report.

You must report:

(a) CO₂ process emissions from steam reforming of a hydrocarbon or the gasification of solid and liquid raw material, reported for each ammonia manufacturing process unit following the requirements of this subpart (CO₂ process emissions reported under this subpart may include CO₂ that is later consumed on site for urea production, and therefore is not released to the ambient air from the ammonia manufacturing process unit).

(b) CO₂, CH₄, and N₂O emissions from each stationary fuel combustion unit.

You must calculate and report the annual process CO₂ emissions from each ammonia manufacturing process unit using the procedures in either paragraph (a) or (b) of this section.

(a) Calculate and report under this subpart the process CO₂ emissions by operating and maintaining CEMS according to the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(b) Calculate and report under this subpart process CO₂ emissions using the procedures in paragraphs (b)(1) through (b)(5) of this section for gaseous feedstock, liquid feedstock, or solid feedstock, as applicable.

(1) Gaseous feedstock. You must calculate, from each ammonia manufacturing unit, the CO₂ process emissions from gaseous feedstock according to Equation G-1 of this section:

\[
\text{CO}_2\text{,G}_k = \left( \sum_{n=1}^{12} \frac{44}{12} \cdot Fdsk_{n,k} \cdot CC_n \cdot \frac{\text{MW}}{\text{MVC}} \right) \cdot 0.001 \quad (\text{Eq. G-1})
\]
Environmental Protection Agency § 98.73

Where:

\( \text{CO}_2,G,k \) = Annual \( \text{CO}_2 \) emissions arising from gaseous feedstock consumption (metric tons).

\( F_{\text{dstk}}_{\text{n}} \) = Volume of the gaseous feedstock used in month \( n \) (scf of feedstock).

\( C_{C,n} \) = Carbon content of the gaseous feedstock, for month \( n \) (kg C per kg of feedstock), determined according to 98.74(c).

\( M_\text{W} \) = Molecular weight of the gaseous feedstock (kg/kg-mole).

\( M_{\text{VC}} \) = Molar volume conversion factor (849.5 scf per kg-mole at standard conditions).

\( 44/12 \) = Ratio of molecular weights, \( \text{CO}_2 \) to carbon.

\( 0.001 \) = Conversion factor from kg to metric tons.

\( k \) = Processing unit.

\( n \) = Number of month.

(2) Liquid feedstock. You must calculate, from each ammonia manufacturing unit, the \( \text{CO}_2 \) process emissions from liquid feedstock according to Equation G–2 of this section:

\[
\text{CO}_{2,L,k} = \left( \sum_{n=1}^{12} \frac{44}{12} \times F_{\text{dstk}}_{\text{n},k} \times C_{C,n} \right) \times 0.001 \quad \text{(Eq. G-2)}
\]

Where:

\( \text{CO}_{2,L,k} \) = Annual \( \text{CO}_2 \) emissions arising from liquid feedstock consumption (metric tons).

\( F_{\text{dstk}}_{\text{n}} \) = Volume of the liquid feedstock used in month \( n \) (gallons of feedstock).

\( C_{C,n} \) = Carbon content of the liquid feedstock, for month \( n \) (kg C per gallon of feedstock) determined according to 98.74(c).

\( 44/12 \) = Ratio of molecular weights, \( \text{CO}_2 \) to carbon.

\( 0.001 \) = Conversion factor from kg to metric tons.

\( k \) = Processing unit.

\( n \) = Number of month.

(3) Solid feedstock. You must calculate, from each ammonia manufacturing unit, the \( \text{CO}_2 \) process emissions from solid feedstock according to Equation G–3 of this section:

\[
\text{CO}_{2,S,k} = \left( \sum_{n=1}^{12} \frac{44}{12} \times F_{\text{dstk}}_{\text{n},k} \times C_{C,n} \right) \times 0.001 \quad \text{(Eq. G-3)}
\]

Where:

\( \text{CO}_{2,S,k} \) = Annual \( \text{CO}_2 \) emissions arising from solid feedstock consumption (metric tons).

\( F_{\text{dstk}}_{\text{n}} \) = Mass of the solid feedstock used in month \( n \) (kg of feedstock).

\( C_{C,n} \) = Carbon content of the solid feedstock, for month \( n \) (kg C per kg of feedstock) determined according to 98.74(c).

\( 44/12 \) = Ratio of molecular weights, \( \text{CO}_2 \) to carbon.

\( 0.001 \) = Conversion factor from kg to metric tons.

\( k \) = Processing unit.

\( n \) = Number of month.

(4) You must calculate the annual process \( \text{CO}_2 \) emissions from each ammonia processing unit \( k \) at your facility summing emissions, as applicable from Equation G–1, G–2, and G–3 of this section using Equation G–4.

\[
E_{\text{CO}_2,k} = \text{CO}_{2,G} + \text{CO}_{2,S} + \text{CO}_{2,L} \quad \text{(Eq. G-4)}
\]

Where:

\( E_{\text{CO}_2,k} \) = Annual \( \text{CO}_2 \) emissions from each ammonia processing unit \( k \) (metric tons).

\( k \) = Processing unit.

(5) You must determine the combined \( \text{CO}_2 \) emissions from all ammonia processing units at your facility using Equation G–5 of this section.
\[ \text{CO}_2 = \sum_{k=1}^{n} E_{\text{CO}_2 k} \quad (\text{Eq. G-5}) \]

Where:

\( \text{CO}_2 \) = Annual combined \( \text{CO}_2 \) emissions from all ammonia processing units (metric tons) (\( \text{CO}_2 \) process emissions reported under this subpart may include \( \text{CO}_2 \) that is later consumed on site for urea production, and therefore is not released to the ambient air from the ammonia manufacturing process unit(s)).

\( E_{\text{CO}_2 k} \) = Annual \( \text{CO}_2 \) emissions from each ammonia processing unit (metric tons).

\( k \) = Processing unit.

\( n \) = Total number of ammonia processing units.

(c) If GHG emissions from an ammonia manufacturing unit are vented through the same stack as any combustion unit or process equipment that reports \( \text{CO}_2 \) emissions using a CEMS that complies with the Tier 4 Calculation Methodology in subpart C of this part (General Stationary Fuel Combustion Sources), then the calculation methodology in paragraph (b) of this section shall not be used to calculate process emissions. The owner or operator shall report under this subpart the combined stack emissions according to the Tier 4 Calculation Methodology in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part.

§98.74 Monitoring and QA/QC requirements.

(a) You must continuously measure the quantity of gaseous or liquid feedstock consumed using a flow meter. The quantity of solid feedstock consumed can be obtained from company records and aggregated on a monthly basis.

(b) You must document the procedures used to ensure the accuracy of the estimates of feedstock consumption.

(c) You must determine monthly carbon contents and the average molecular weight of each feedstock consumed from reports from your supplier. As an alternative to using supplier information on carbon contents, you can also collect a sample of each feedstock on a monthly basis and analyze the carbon content and molecular weight of the fuel using any of the following methods listed in paragraphs (c)(1) through (c)(8) of this section, as applicable.

8. ASTM D5373–08 Standard Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, see §98.7).

(d) Calibrate all oil and gas flow meters that are used to measure liquid and gaseous feedstock volumes and flow rates (except for gas billing meters) according to the monitoring and QA/QC requirements for the Tier 3 methodology in §98.34(b)(1). Perform oil tank drop measurements (if used to quantify feedstock volumes) according to §98.34(b)(2).
§ 98.76 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) and (b) of this section, as applicable for each ammonia manufacturing process unit.

(a) If a CEMS is used to measure CO₂ emissions, then you must report the relevant information required under §98.36 for the Tier 4 Calculation Methodology and the following information in this paragraph (a):

(1) Annual quantity of each type of feedstock consumed for ammonia manufacturing (scf of feedstock or gallons of feedstock or kg of feedstock).

(2) Method used for determining quantity of feedstock used.

(b) If a CEMS is not used to measure emissions, then you must report the following information:

(1) Annual CO₂ process emissions (metric tons) for each ammonia manufacturing process unit.

(2) Monthly quantity of each type of feedstock consumed for ammonia manufacturing for each ammonia processing unit (scf of feedstock or gallons of feedstock or kg of feedstock).

(3) Method used for determining quantity of monthly feedstock used.

(4) Whether carbon content for each feedstock for month n is based on reports from the supplier or analysis of carbon content.

(5) If carbon content of feedstock for month n is based on analysis, the test method used.

(6) Sampling analysis results of carbon content of feedstock as determined for QA/QC of supplier data under §98.74(e).

(7) If a facility uses gaseous feedstock, the carbon content of the gaseous feedstock, for month n, (kg C per kg of feedstock).

(8) If a facility uses gaseous feedstock, the molecular weight of the gaseous feedstock (kg/kg-mole).

(9) If a facility uses gaseous feedstock, the molar volume conversion factor of the gaseous feedstock (scf per kg-mole).

(10) If a facility uses liquid feedstock, the carbon content of the liquid feedstock, for month n, (kg C per gallon of feedstock).
§ 98.77 Records that must be retained.

In addition to the records required by §98.3(g), you must retain the following records specified in paragraphs (a) and (b) of this section for each ammonia manufacturing unit.

(a) If a CEMS is used to measure emissions, retain records of all feedstock purchases in addition to the requirements in §98.37 for the Tier 4 Calculation Methodology.

(b) If a CEMS is not used to measure process CO\textsubscript{2} emissions, you must also retain the records specified in paragraphs (b)(1) through (b)(2) of this section:

(1) Records of all analyses and calculations conducted for reported data as listed in §98.76(b).

(2) Monthly records of carbon content of feedstock from supplier and/or all analyses conducted of carbon content.

§ 98.78 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart H—Cement Production

§ 98.80 Definition of the source category.

The cement production source category consists of each kiln and each in-line kiln/raw mill at any portland cement manufacturing facility including alkali bypasses, and includes kilns and in-line kiln/raw mills that burn hazardous waste.
Environmental Protection Agency § 98.83

§ 98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(d) Calculate and report process and combustion CO₂ emissions separately using the procedures specified in paragraphs (d)(1) through (d)(4) of this section.

1. Calculate CO₂ process emissions from all kilns at the facility using Equation H–1 of this section:

\[
CO₂_{CMF} = \sum_{m=1}^{k} CO₂_{Cl,m} + CO₂_{rm} \tag{Eq. H-1}
\]

Where:
- \(CO₂_{CMF}\) = Annual process emissions of CO₂ from cement manufacturing, metric tons.
- \(CO₂_{Cl,m}\) = Total annual emissions of CO₂ from clinker production from kiln \(m\), metric tons.
- \(CO₂_{rm}\) = Total annual emissions of CO₂ from raw materials, metric tons.
- \(k\) = Total number of kilns at a cement manufacturing facility.

2. \(CO₂\) emissions from clinker production. Calculate \(CO₂\) emissions from each kiln using Equations H–2 through H–5 of this section.

\[
CO₂_{Cl,m} = \sum_{j=1}^{p} \left( \left( Cl_{i,j} \right) \times \left( EF_{Cl,j} \right) \times \left( \frac{2000}{2205} \right) \right) + \sum_{r=1}^{r} \left( CKD_{i} \times EF_{CKD,i} \times \left( \frac{2000}{2205} \right) \right) \tag{Eq. H-2}
\]

Where:
- \(Cl_{i,j}\) = Quantity of clinker produced in month \(j\) from kiln \(m\), tons.
- \(EF_{Cl,j}\) = Kiln-specific clinker emission factor for month \(j\) for kiln \(m\), metric tons CO₂/metric ton clinker computed as specified in Equation H–3 of this section.
- \(CKD_{i}\) = Cement kiln dust (CKD) not recycled to the kiln in quarter \(i\) from kiln \(m\), tons.
- \(EF_{CKD,i}\) = Kiln-specific CKD emission factor for quarter \(i\) from kiln \(m\), metric tons CO₂/metric ton CKD computed as specified in Equation H–4 of this section.
- \(p\) = Number of months for clinker calculation, 12.
- \(r\) = Number of quarters for CKD calculation, 4.
- \(2000/2205\) = Conversion factor to convert tons to metric tons.

(i) Kiln-Specific Clinker Emission Factor. (A) Calculate the kiln-specific clinker emission factor using Equation H–3 of this section.

\[
EF_{Cl} = \left( Cl_{CaO} - Cl_{ncCaO} \right) \times MR_{CaO} + \left( Cl_{MgO} - Cl_{ncMgO} \right) \times MR_{MgO} \tag{Eq. H-3}
\]

Where:
- \(Cl_{CaO}\) = Monthly total CaO content of Clinker, wt-fraction.
- \(Cl_{ncCaO}\) = Monthly non-calcined CaO content of Clinker, wt-fraction.
- \(MR_{CaO}\) = Molecular-weight Ratio of CO₂/CaO = 0.785.
- \(Cl_{MgO}\) = Monthly total MgO content of Clinker, wt-fraction.
- \(Cl_{ncMgO}\) = Monthly non-calcined MgO content of Clinker, wt-fraction.
- \(MR_{MgO}\) = Molecular-weight Ratio of CO₂/MgO = 1.092.

(B) Non-calcined CaO is CaO that remains in the clinker in the form of CaCO₃ and CaO in the clinker that entered the kiln as a non-carbonate species. Non-calcined MgO is MgO that remains in the clinker in the form of...
MgCO₃ and MgO in the clinker that entered the kiln as a non-carbonate species.

(ii) **Kiln-Specific CKD Emission Factor.**
(A) Calculate the kiln-specific CKD emission factor for CKD not recycled to the kiln using Equation H-4 of this section.

\[ EF_{CKD} = \left( CKD_{CaO} - CKD_{ncCaO} \right) MR_{CaO} + \left( CKD_{MgO} - CKD_{ncMgO} \right) MR_{MgO} \] (Eq. H-4)

Where:
\( CKD_{CaO} \) = Quarterly total CaO content of CKD not recycled to the kiln, wt-fraction.
\( CKD_{ncCaO} \) = Quarterly non-calcined CaO content of CKD not recycled to the kiln, wt-fraction.
\( MR_{CaO} \) = Molecular-weight Ratio of CO₂/CaO = 0.785.
\( CKD_{MgO} \) = Quarterly total MgO content of CKD not recycled to the kiln, wt-fraction.
\( CKD_{ncMgO} \) = Quarterly non-calcined MgO content of CKD not recycled to the kiln, wt-fraction.
\( MR_{MgO} \) = Molecular-weight Ratio of CO₂/MgO = 1.092.

(B) Non-calcined CaO is CaO that remains in the CKD in the form of CaCO₃ and CaO in the CKD that entered the kiln as a non-carbonate species. Non-calcined MgO is MgO that remains in the CKD in the form of MgCO₃ and MgO in the CKD that entered the kiln as a non-carbonate species.

(3) **CO₂ emissions from raw materials.** Calculate CO₂ emissions from raw materials using Equation H-5 of this section:

\[ CO_{2,rm} = \sum_{i=1}^{M} rm \times TOC_{rm} \times \frac{44}{12} \times \frac{2000}{2205} \] (Eq. H-5)

Where:
\( rm \) = The amount of raw material i consumed annually, tons/yr (dry basis) or the amount of raw kiln feed consumed annually, tons/yr (dry basis).
\( CO_{2,rm} \) = Annual CO₂ emissions from raw materials.
\( TOC_{rm} \) = Organic carbon content of raw material i or organic carbon content of combined raw kiln feed (dry basis), as determined in §98.84(c) or using a default factor of 0.2 percent of total raw material weight.
\( M \) = Number of raw materials or 1 if calculating emissions based on combined raw kiln feed.
\( \frac{44}{12} \) = Ratio of molecular weights, CO₂ to carbon.
\( \frac{2000}{2205} \) = Conversion factor to convert tons to metric tons.

§98.84 **Monitoring and QA/QC requirements.**

(a) You must determine the weight fraction of total CaO and total MgO in CKD not recycled to the kiln from each kiln using ASTM C114–09, Standard Test Methods for Chemical Analysis of Hydraulic Cement (incorporated by reference, see §98.7). The monitoring must be conducted quarterly for each kiln from a CKD sample drawn either as CKD is exiting the kiln or from bulk CKD storage.

(b) You must determine the weight fraction of total CaO and total MgO in clinker from each kiln using ASTM C114–09 Standard Test Methods for Chemical Analysis of Hydraulic Cement (incorporated by reference, see §98.7). The monitoring must be conducted monthly for each kiln from a monthly clinker sample drawn from bulk clinker storage if storage is dedicated to the specific kiln, or from a monthly arithmetic average of daily
clinker samples drawn from the clinker conveying systems exiting each kiln.

(c) The total organic carbon content (dry basis) of raw materials must be determined annually using ASTM C114-09 Standard Test Methods for Chemical Analysis of Hydraulic Cement (incorporated by reference, see §98.7) or a similar industry standard practice or method approved for total organic carbon determination in raw mineral materials. The analysis must be conducted either on sample material drawn from bulk raw kiln feed storage or on sample material drawn from bulk raw material storage for each category of raw material (i.e., limestone, sand, shale, iron oxide, and alumina). Facilities that opt to use the default total organic carbon factor provided in §98.83(d)(3), are not required to monitor for TOC.

(d) The quantity of clinker produced monthly by each kiln must be determined by direct weight measurement of clinker using the same plant techniques used for accounting purposes, such as reconciling weigh hopper or belt weigh feeder measurements against inventory measurements. As an alternative, facilities may also determine clinker production by direct measurement of raw kiln feed and application of a kiln-specific feed-to-clinker factor. Facilities that opt to use a feed-to-clinker factor must verify the accuracy of this factor on a monthly basis.

(e) The quantity of CKD not recycled to the kiln generated by each kiln must be determined quarterly using the same plant techniques used for accounting purposes, such as direct weight measurement using weigh hoppers, truck weigh scales, or belt weigh feeders.

(f) The annual quantity of raw kiln feed or annual quantity of each category of raw materials consumed by the facility (e.g., limestone, sand, shale, iron oxide, and alumina) must be determined monthly by direct weight measurement using the same plant instruments used for accounting purposes, such as weigh hoppers, truck weigh scales, or belt weigh feeders.

(g) The monthly non-calcined CaO and MgO that remains in the clinker in the form of CaCO$_3$ or that enters the kiln as a non-carbonate species may be assumed to be a default value of 0.0 or may be determined monthly by careful chemical analysis of feed material and clinker material from each kiln using well documented analytical and calculational methods or the appropriate industry standard practice.

(h) The quarterly non-calcined CaO and MgO that remains in the CKD in the form of CaCO$_3$ or that enters the kiln as a non-carbonate species may be assumed to be a default value of 0.0 or may be determined quarterly by careful chemical analysis of feed material and CKD material from each kiln using well documented analytical and calculational methods or the appropriate industry standard practice.


§ 98.85 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations in §98.83 is required. Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter shall be used in the calculations. The owner or operator must document and keep records of the procedures used for all such estimates.

(a) If the CEMS approach is used to determine combined process and combustion CO$_2$ emissions, the missing data procedures in §98.35 apply.

(b) For CO$_2$ process emissions from cement manufacturing facilities calculated according to §98.83(d), if data on the carbonate content (of clinker or CKD), noncalcined content (of clinker or CKD) or the annual organic carbon content of raw materials are missing, facilities must undertake a new analysis.

(c) For each missing value of monthly clinker production the substitute data value must be the best available estimate of the monthly clinker production based on information used for accounting purposes, or use the maximum tons per day capacity of the system and the number of days per month.

(d) For each missing value of monthly raw material consumption the substitute data value must be the best available estimate of the monthly raw material consumption.
§ 98.86 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) and (b) of this section, as appropriate.

(a) If a CEMS is used to measure CO\(_2\) emissions, then you must report under this subpart the relevant information required by §98.36(e)(2)(vi) and the information listed in this paragraph (a):

1. Monthly clinker production from each kiln at the facility.
2. Monthly cement production from each kiln at the facility.
3. Number of kilns and number of operating kilns.

(b) If a CEMS is not used to measure CO\(_2\) emissions, then you must report the information listed in this paragraph (b) for each kiln:

1. Kiln identification number.
2. Monthly clinker production from each kiln.
3. Annual cement production at the facility.
4. Number of kilns and number of operating kilns.
5. Quarterly quantity of CKD not recycled to the kiln for each kiln at the facility.
6. Monthly fraction of total CaO, total MgO, non-calcined CaO and non-calcined MgO in clinker for each kiln (as wt-fractions).
7. Method used to determine non-calcined CaO and non-calcined MgO in clinker.
8. Quarterly fraction of total CaO, total MgO, non-calcined CaO and non-calcined MgO in CKD not recycled to the kiln for each kiln (as wt-fractions).
9. Method used to determine non-calcined CaO and non-calcined MgO in CKD.
10. Monthly kiln-specific clinker CO\(_2\) emission factors for each kiln (metric tons CO\(_2\)/metric ton clinker produced).
11. Quarterly kiln-specific CKD CO\(_2\) emission factors for each kiln (metric tons CO\(_2\)/metric ton CKD produced).
12. Annual organic carbon content of raw kiln feed or annual organic carbon content of each raw material (wt-fraction, dry basis).
13. Annual consumption of raw kiln feed or annual consumption of each raw material (dry basis).
14. Number of times missing data procedures were used to determine the following information:

1. Clinker production (number of months).
2. Carbonate contents of clinker (number of months).
3. Non-calcined content of clinker (number of months).
4. CKD not recycled to kiln (number of quarters).
5. Non-calcined content of CKD (number of quarters).
6. Organic carbon contents of raw materials (number of times).
7. Raw material consumption (number of months).
8. Method used to determine the monthly clinker production from each kiln reported under (b)(2) of this section, including monthly kiln-specific clinker factors, if used.


§ 98.87 Records that must be retained.

(a) If a CEMS is used to measure CO\(_2\) emissions, then in addition to the records required by §98.3(g), you must retain under this subpart the records required for the Tier 4 Calculation Methodology in §98.37.

(b) If a CEMS is not used to measure CO\(_2\) emissions, then in addition to the records required by §98.3(g), you must retain the records specified in this paragraph (b) for each portland cement manufacturing facility.

1. Documentation of monthly calculated kiln-specific clinker CO\(_2\) emission factor.
2. Documentation of quarterly calculated kiln-specific CKD CO\(_2\) emission factor.
3. Measurements, records and calculations used to determine reported parameters.

[75 FR 66461, Oct. 28, 2010]
§ 98.88 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart I—Electronics Manufacturing

SOURCE: 75 FR 74818, Dec. 1, 2010, unless otherwise noted.

§ 98.90 Definition of the source category.

(a) The electronics manufacturing source category consists of any of the production processes listed in paragraphs (a)(1) through (a)(5) of this section that use fluorinated GHGs or N₂O. Facilities that may use these processes include, but are not limited to, facilities that manufacture micro-electromechanical systems (MEMS), liquid crystal displays (LCDs), photovoltaic cells (PV), and semiconductors (including light-emitting diodes (LEDs)).

(1) Any electronics production process in which the etching process uses plasma-generated fluorine atoms and other reactive fluorine-containing fragments, that chemically react with exposed thin-films (e.g., dielectric, metals) or substrate (e.g., silicon) to selectively remove portions of material.

(2) Any electronics production process in which chambers used for depositing thin films are cleaned periodically using plasma-generated fluorine atoms and other reactive fluorine-containing fragments.

(3) Any electronics production process in which wafers are cleaned using plasma generated fluorine atoms or other reactive fluorine-containing fragments to remove residual material from wafer surfaces, including the wafer edge.

(4) Any electronics production process in which the chemical vapor deposition (CVD) process or other manufacturing processes use N₂O.

(5) Any electronics manufacturing production process in which fluorinated GHGs are used as heat transfer fluids to cool process equipment, to control temperature during device testing, to clean substrate surfaces and other parts, and for soldering (e.g., vapor phase reflow).

§ 98.91 Reporting threshold.

(a) You must report GHG emissions under this subpart if electronics manufacturing production processes, as defined in §98.90, are performed at your facility and your facility meets the requirements of either §98.2(a)(1) or (a)(2). To calculate total annual GHG emissions for comparison to the 25,000 metric ton CO₂e per year emission threshold in §98.2(a)(2), follow the requirements of §98.2(b), with one exception. Rather than using the calculation methodologies in §98.93 to calculate emissions from electronics manufacturing production processes, calculate emissions of each fluorinated GHG from electronics manufacturing production processes by using paragraphs (a)(1), (a)(2), or (a)(3) of this section, as appropriate, and then sum the emissions of each fluorinated GHG by using paragraph (a)(4) of this section.

(1) If you manufacture semiconductors or MEMS you must calculate annual production process emissions of each input gas i for threshold applicability purposes using the default emission factors shown in Table I–1 to this subpart and Equation I–1 of this subpart.

\[
E_i = S \times EF_i \times GWP_i \times 0.001 \quad (\text{Eq. I-1})
\]

Where:

\( E_i \) = Annual production process emissions of input gas i for threshold applicability purposes (metric tons CO₂e).

\( S \) = 100 percent of annual manufacturing capacity of a facility as calculated using Equation I-5 of this subpart (m²).

\( EF_i \) = Emission factor for input gas i (kg/m²).

\( GWP_i \) = Gas-appropriate GWP as provided in Table A-1 to subpart A of this part.

\( 0.001 \) = Conversion factor from kg to metric tons.

i = Input gas.
(2) If you manufacture LCDs, you must calculate annual production process emissions of each input gas \( i \) for threshold applicability purposes using the default emission factors shown in Table I-1 to this subpart and Equation I-2 of this subpart.

\[
E_i = S \cdot EF_i \cdot GWP_i \cdot 0.000001 \quad \text{(Eq. I-2)}
\]

Where:
- \( E_i \) = Annual production process emissions of input gas \( i \) for threshold applicability purposes (metric tons \( \text{CO}_2 \text{e} \)).
- \( S \) = 100 percent of annual manufacturing capacity of a facility as calculated using Equation I-5 of this subpart (\( \text{m}^2 \)).
- \( EF_i \) = Emission factor for input gas \( i \) (\( \text{g/m}^2 \)).
- \( GWP_i \) = Gas-appropriate GWP as provided in Table A-1 to subpart A of this part.
- \( 0.000001 \) = Conversion factor from g to metric tons.

(3) If you manufacture PVs, you must calculate annual production process emissions of each input gas \( i \) for threshold applicability purposes using gas-appropriate GWP values shown in Table A-1 to subpart A of this part and Equation I-3 of this subpart.

\[
E_i = C_i \cdot GWP_i \cdot 0.001 \quad \text{(Eq. I-3)}
\]

Where:
- \( E_i \) = Annual production process emissions of input gas \( i \) for threshold applicability purposes (metric tons \( \text{CO}_2 \text{e} \)).
- \( C_i \) = Annual fluorinated GHG (input gas \( i \)) purchases or consumption (kg). Only gases used in PV manufacturing that have listed GWP values in Table A-1 to subpart A of this part must be considered for threshold applicability purposes.
- \( GWP_i \) = Gas-appropriate GWP as provided in Table A-1 to subpart A of this part.
- \( 0.001 \) = Conversion factor from kg to metric tons.

(4) You must calculate total annual production process emissions for threshold applicability purposes using Equation I-4 of this subpart.

\[
E_T = \delta \cdot \sum_i E_i \quad \text{(Eq. I-4)}
\]

Where:
- \( E_T \) = Annual production process emissions of all fluorinated GHGs for threshold applicability purposes (metric tons \( \text{CO}_2 \text{e} \)).
- \( \delta \) = Factor accounting for heat transfer fluid emissions, estimated as 10 percent of total annual production process emissions at a semiconductor facility. Set equal to 1.1 when Equation I-4 of this subpart is used to calculate total annual production emissions from semiconductor manufacturing. Set equal to 1 when Equation I-4 of this subpart is used to calculate total annual production process emissions from MEMS, LCD, or PV manufacturing.
- \( E_i \) = Annual production process emissions of input gas \( i \) for threshold applicability purposes (metric tons \( \text{CO}_2 \text{e} \)), as calculated in Equations I-1, I-2 or I-3 of this subpart.

(b) You must calculate annual manufacturing capacity of a facility using Equation I-5 of this subpart.
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\[ S = \sum_{x}^{12} W_x \]  
(Eq. I - 5)

Where:
- \( S \) = 100 percent of annual manufacturing capacity of a facility (m²).
- \( W_x \) = Maximum designed substrate starts of a facility in month \( x \) (m² per month).
- \( x \) = Month.

§ 98.92 GHGs to report.

(a) You must report emissions of fluorinated GHGs (as defined in §98.6) and N₂O. The fluorinated GHGs that are emitted from electronics manufacturing production processes include, but are not limited to, those listed in Table I-2 to this subpart. You must individually report, as appropriate:
   1. Fluorinated GHGs emitted from plasma etching.
   2. Fluorinated GHGs emitted from chamber cleaning.
   3. Fluorinated GHGs emitted from wafer cleaning.
   4. N₂O emitted from chemical vapor deposition and other electronics manufacturing processes.
   5. Fluorinated GHGs emitted from heat transfer fluid use.
   6. All fluorinated GHGs and N₂O consumed, including gases used in manufacturing processes other than those listed in paragraphs (a)(1) through (a)(5) of this section.

(b) CO₂, CH₄, and N₂O combustion emissions from each stationary combustion unit. You must calculate and report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C of this part.

§ 98.93 Calculating GHG emissions.

(a) You must calculate total annual facility-level emissions of each fluorinated GHG used in electronics manufacturing production processes at your facility, for each process type, using Equations I-6 and I-7 of this subpart according to the procedures in paragraphs (a)(1), (a)(2), (a)(3), (a)(4), (a)(5), or (a)(6) of this section, as appropriate. Facilities to which the procedures in paragraphs (a)(1) of this section or (a)(2) of this section apply may elect to use the procedures in paragraph (a)(3) as an alternative. If your facility uses less than 50 kg of a fluorinated GHG in one reporting year, you may calculate emissions as equal to your facility’s annual consumption for that specific gas as calculated in Equation I-11 of this subpart. Where your facility is required to perform calculations using default emission factors for gas utilization and by-product formation rates according to the procedures in paragraphs (a)(1) or (a)(2) of this section, and default values are not available for a particular input gas and process type or sub-type combination in Tables I-3, I-4, I-5, I-6, or I-7, you must follow the procedures in paragraph (a)(6) of this section.

\[ \text{ProcessType} E_i = \sum_{j=1}^{N} E_{ij} \]  
(Eq. I - 6)

Where:
- \( \text{ProcessType} E_i \) = Annual emissions of input gas \( i \) from the processes type (metric tons).
- \( E_{ij} \) = Annual emissions of input gas \( i \) from recipe, process sub-type, or process type \( j \) as calculated in Equation I-8 of this subpart (metric tons).
- \( N \) = The total number of recipes or process sub-types \( j \) that depends on the electronics manufacturing facility and emission calculation methodology. If \( E_{ij} \) is calculated for a process type \( i \) in Equation I-8 of this subpart, \( N = 1 \).
- \( i \) = Input gas.
- \( j \) = Recipe, process sub-type, or process type.
Where:
ProcesstypeBE\(_k\) = Annual emissions of by-product gas \(k\) from the processes type (metric tons).

BE\(_{ijk}\) = Annual emissions of by-product gas \(k\) formed from input gas \(i\) used for recipe, process sub-type, or process type \(j\) as calculated in Equation I–9 of this subpart (metric tons).

\(N\) = The total number of recipes or process sub-types \(j\) that depends on the electronics manufacturing facility and emission calculation methodology. If \(BE\(_{ijk}\)\) is calculated for a process type \(j\) in Equation I–9 of this subpart, \(N = 1\).

\(i\) = Input gas.
\(j\) = Recipe, process sub-type, or process type.
\(k\) = By-product gas.

(1) If you manufacture MEMS, LCDs, or PVs, you must, except as provided in §98.93(a)(3), calculate annual facility-level emissions of each fluorinated GHG used for the plasma etching and chamber cleaning process types using default utilization and by-product formation rates as shown in Table I–5, I–6, or I–7 of this subpart, and by using Equations I–8 and I–9 of this subpart.

(2) If you manufacture semiconductors on wafers measuring 300 mm or less in diameter, except as provided in §98.93(a)(3), you must adhere to the procedures in paragraphs (a)(2)(i) or (a)(2)(ii) of this section.

(i) If your facility has an annual manufacturing capacity, as calculated using Equation I–5 of this subpart, of less than or equal to 10,500 m\(^2\) of substrate, as calculated using Equation I–5 of this subpart, you must adhere to the procedures in paragraphs (a)(i)(A) through (a)(i)(C) of this section.

(A) You must calculate annual facility-level emissions of each fluorinated GHG used for the plasma etching process type using default utilization and by-product formation rates as shown in Table I–5 or I–6 of this subpart, and by using Equations I–8 and I–9 of this subpart.

(B) You must calculate annual facility-level emissions of each fluorinated GHG used for each of the process sub-types associated with the chamber cleaning process type, including in-situ thermal chamber clean, remote plasma chamber clean, and in-situ thermal chamber clean, using default utilization and by-product formation rates as shown in Table I–5 or I–6 of this subpart, and by using Equations I–8 and I–9 of this subpart.

(C) You must calculate annual facility-level emissions of each fluorinated GHG used for the wafer cleaning process type using default utilization and by-product formation rates as shown in Table I–5 or I–6 of this subpart and by using Equations I–8 and I–9 of this subpart.

(ii) If your facility has an annual manufacturing capacity of greater than 10,500 m\(^2\) of substrate, as calculated using Equation I–5 of this subpart, you must adhere to the procedures in paragraphs (a)(ii)(A) through (a)(ii)(C) of this section.

(A) You must calculate annual facility-level emissions of each fluorinated GHG used for the plasma etching process type using recipe-specific utilization and by-product formation rates determined as specified in §98.94(d), and by using Equations I–8 and I–9 of this subpart. You must develop recipe-specific utilization and by-product formation rates for each individual recipe or set of similar recipes as defined in §98.98. Recipe-specific utilization and by-product formation rates must be developed each reporting year only for recipes which are not similar to any recipe used in a previous reporting year, as defined in §98.98.

(B) You must calculate annual facility-level emissions of each fluorinated GHG used for each of the process sub-types associated with the chamber cleaning process type, including in-situ plasma chamber clean, remote plasma chamber clean, and in-situ thermal chamber clean, using default utilization and by-product formation rates as shown in Table I–5 or I–6 of this subpart, and by using Equations I–8 and I–9 of this subpart.

(C) You must calculate annual facility-level emissions of each fluorinated GHG used for each of the process sub-types associated with the chamber cleaning process type, including in-situ thermal chamber clean, remote plasma chamber clean, and in-situ thermal chamber clean, using default utilization and by-product formation rates as shown in Table I–5 or I–6 of this subpart, and by using Equations I–8 and I–9 of this subpart.
GHG used for the wafer cleaning process type using default utilization and by-product formation rates as shown in Table I–3 or I–4 to this subpart, and by using Equations I–8 and I–9 of this subpart.

(3) If you do not adhere to procedures as specified in paragraphs (a)(1) and (a)(2) of this section, you must calculate annual facility-level emissions of each fluorinated GHG for all fluorinated GHG-emitting production processes using recipe-specific utilization and by-product formation rates determined as specified in §98.94(d) and by using Equations I–8 and I–9 of this subpart. You must develop recipe-specific utilization and by-product formation rates for each individual recipe or set of similar recipes as defined in §98.98. Recipe-specific utilization and by-product formation rates must be developed each reporting year only for recipes which are not similar to any recipe used in a previous reporting year, as defined in §98.98.

(4) If you manufacture semiconductors on wafers measuring greater than 300 mm in diameter, you must calculate annual facility-level emissions of each fluorinated GHG used for all fluorinated GHG emitting production processes using recipe-specific utilization and by-product formation rates as specified in §98.94(d), and by using Equations I–8 and I–9 of this subpart. You must develop recipe-specific utilization and by-product formation rates for each individual recipe or set of similar recipes as defined in §98.98. Recipe-specific utilization and by-product formation rates must be developed each reporting year only for recipes that are not similar to any recipe used in a previous reporting year, as defined in §98.98.

(5) To be included in a set of similar recipes for the purposes of this subpart, a recipe must be similar to the recipe in the set for which recipe-specific utilization and by-product formation rates have been measured.

(6) Where your facility is required to perform calculations using default emission factors for gas utilization and by-product formation rates according to the procedures in paragraphs (a)(1) or (a)(2) of this section, and default values are not available for a particular input gas and process type or sub-type combination in Tables I–3, I–4, I–5, I–6, or I–7, you must follow the procedures in either paragraph (a)(6)(i) or (a)(6)(ii) of this section and use Equations I–8 and I–9 of this subpart.

(i) You must use utilization and by-product formation rates of 0.

(ii) You must develop recipe-specific utilization and by-product formation rates determined as specified in §98.94(d) for each individual recipe or set of similar recipes as defined in §98.98. Recipe-specific utilization and by-product formation rates must be developed each reporting year only for recipes that are not similar to any recipe used in a previous reporting year, as defined in §98.98.

\[ E_{ij} = C_{ij} \cdot (1 - U_{ij}) \cdot (1 - a_{ij} \cdot d_{ij}) \cdot 0.001 \quad (\text{Eq. I–8}) \]

Where:

- \( E_{ij} \) = Annual emissions of input gas i from recipe, process sub-type, or process type j (metric tons).
- \( C_{ij} \) = Amount of input gas i consumed for recipe, process sub-type, or process type j, as calculated in Equation I–13 of this subpart (kg).
- \( U_{ij} \) = Process utilization rate for input gas i for recipe, process sub-type, or process type j (expressed as a decimal fraction).
- \( a_{ij} \) = Fraction of input gas i used in recipe, process sub-type, or process type j with abatement systems (expressed as a decimal fraction).
- \( d_{ij} \) = Fraction of input gas i destroyed or removed in abatement systems connected to process tools where recipe, process sub-type, or process type j is used, as calculated in Equation I–14 of this subpart (expressed as a decimal fraction).
- 0.001 = Conversion factor from kg to metric tons.
- \( i \) = Input gas.
- \( j \) = Recipe, process sub-type, or process type.
Where:

\[ BE_{jk} = B_{jk} \times C_{ij} \times (1 - a_{ij} \times d_{jk}) \times 0.001 \quad (\text{Eq. I-9}) \]

Where:

- \( BE_{jk} \) = Annual emissions of by-product gas \( k \) formed from input gas \( i \) from recipe, process sub-type, or process type \( j \) (metric tons).
- \( B_{jk} \) = By-product formation rate of gas \( k \) created as a by-product per amount of input gas \( i \) (kg) consumed by recipe, process sub-type, or process type \( j \) (kg).
- \( C_{ij} \) = Amount of input gas \( i \) consumed for recipe, process sub-type, or process type \( j \), as calculated in Equation I-13 of this subpart (kg).
- \( a_{ij} \) = Fraction of input gas \( i \) used for recipe, process sub-type, or process type \( j \) with abatement systems (expressed as a decimal fraction).
- \( d_{jk} \) = Fraction of by-product gas \( k \) destroyed or removed in abatement systems connected to process tools where recipe, process sub-type, or process type \( j \) is used, as calculated in Equation I-14 of this subpart (expressed as a decimal fraction).
- \( 0.001 \) = Conversion factor from kg to metric tons.

\( i \) = Input gas.
\( j \) = Recipe, process sub-type, or process type.
\( k \) = By-product gas.

(b) You must calculate annual facility-level \( N_2O \) emissions from each chemical vapor deposition process and other electronics manufacturing production processes using Equation I-10 of this subpart and the methods in paragraphs (b)(1) and (b)(2) of this section. If your facility uses less than 50 kg of \( N_2O \) in one reporting year, you may calculate emissions as equal to your facility’s annual consumption for \( N_2O \) as calculated in Equation I-11 of this subpart.

(1) You must use a factor for \( N_2O \) utilization for chemical vapor deposition processes pursuant to either paragraph (b)(1)(i) or (b)(1)(ii) of this section.

(i) You must develop a facility-specific \( N_2O \) utilization factor averaged over all \( N_2O \)-using chemical vapor deposition processes determined as specified in §98.94(e).

(ii) If you do not use a facility-specific \( N_2O \) utilization factor for chemical vapor deposition processes, you must use the default utilization factor as shown in Table I-8 to this subpart for \( N_2O \) from chemical vapor deposition processes.

(ii) You must use a factor for \( N_2O \) utilization for other manufacturing processes pursuant to either paragraph (b)(2)(i) or (b)(2)(ii) of this section.

(i) You must develop a facility-specific \( N_2O \) utilization factor averaged over all \( N_2O \)-using electronics manufacturing production processes other than chemical vapor deposition processes determined as specified in §98.94(e).

(ii) If you do not use a facility-specific \( N_2O \) utilization factor for manufacturing production processes other than chemical vapor deposition, you must use the default utilization factor in as shown in Table I-8 to this subpart for \( N_2O \) from manufacturing production processes other than chemical vapor deposition.

\[ E(N_2O)_j = C_{N_2O,j} \times (1 - U_{N_2O,j}) \times (1 - a_{N_2O,j} \times d_{N_2O,j}) \times 0.001 \quad (\text{Eq. I-10}) \]

Where:

- \( E(N_2O)_j \) = Annual emissions of \( N_2O \) for \( N_2O \)-using process \( j \) (metric tons).
- \( C_{N_2O,j} \) = Amount of \( N_2O \) consumed for \( N_2O \)-using process \( j \), as calculated in Equation I-13 of this subpart and apportioned to \( N_2O \) process \( j \) (kg).
- \( U_{N_2O,j} \) = Process utilization factor for \( N_2O \)-using process \( j \) (expressed as a decimal fraction).
- \( a_{N_2O,j} \) = Fraction of \( N_2O \) used in \( N_2O \)-using process \( j \) with abatement systems (expressed as a decimal fraction).
- \( d_{N_2O,j} \) = Fraction of \( N_2O \) for \( N_2O \)-using process \( j \) destroyed or removed in abatement systems connected to process tools where process \( j \) is used, as calculated in Equation I-14 of this subpart (expressed as a decimal fraction).
- \( 0.001 \) = Conversion factor from kg to metric tons.
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(c) You must calculate total annual input gas consumption for each fluorinated GHG and N₂O using Equation I–11 of this subpart. Pursuant to §98.92(a)(6), for all fluorinated GHGs and N₂O used at your facility for which you do not calculate emissions using Equations I–6, I–7, I–8, I–9, and I–10 of this subpart, calculate consumption of these fluorinated GHGs and N₂O using Equation I–11 of this subpart.

\[ C_i = (I_{B1} - I_{E1} + A_i - D_i) \quad (\text{Eq. I–11}) \]

Where:

- \( C_i \) = Annual consumption of input gas \( i \) (kg per year).
- \( I_{B1} \) = Inventory of input gas \( i \) stored in containers at the beginning of the reporting year, including heels (kg). For containers in service at the beginning of a reporting year, account for the quantity in these containers as if they were full.
- \( I_{E1} \) = Inventory of input gas \( i \) stored in containers at the end of the reporting year, including heels (kg). For containers in service at the end of a reporting year, account for the quantity in these containers as if they were full.
- \( A_i \) = Acquisitions of input gas \( i \) during the year through purchases or other transactions, including heels in containers returned to the electronics manufacturing facility (kg).
- \( D_i \) = Disbursements of input gas \( i \) through sales or other transactions during the year, including heels in containers returned by the electronics manufacturing facility to the chemical supplier, as calculated using Equation I–12 of this subpart (kg).

(d) You must calculate disbursements of input gas \( i \) using facility-wide gas-specific heel factors, as determined in §98.94(b), and by using Equation I–12 of this subpart.

\[ D_i = \sum_{l=1}^{M} (h_{il} \times N_{il} \times F_{il}) + X_i \quad (\text{Eq. I–12}) \]

Where:

- \( D_i \) = Disbursements of input gas \( i \) through sales or other transactions during the reporting year, including heels in containers returned by the electronics manufacturing facility to the gas distributor (kg).
- \( h_{il} \) = Facility-wide gas-specific heel factor for input gas \( i \) and container size and type \( l \) (expressed as a decimal fraction), as determined in §98.94(b). If your facility uses less than 50 kg of a fluorinated GHG or N₂O in one reporting year, you may assume that any \( h_{il} \) for that fluorinated GHG or N₂O is equal to zero.
- \( N_{il} \) = Number of containers of size and type \( l \) returned to the gas distributor containing the standard heel of input gas \( i \).
- \( F_{il} \) = Full capacity of containers of size and type \( l \) containing input gas \( i \) (kg).
- \( X_i \) = Disbursements under exceptional circumstances of input gas \( i \) through sales or other transactions during the year (kg). These include returns of containers whose contents have been weighed due to an exceptional circumstance as specified in §98.94(b)(4).

(e) You must calculate the amount of input gas \( i \) consumed for each individual recipe (including those in a set of similar recipes) process sub-type, or process type \( j \), using Equation I–13 of this subpart.

\[ C_{ij} = f_{ij} \times C_i \quad (\text{Eq. I–13}) \]
Where:

\( C_{i,j} \) = The annual amount of input gas \( i \) consumed for recipe, process sub-type, or process type \( j \) (kg).

\( f_{i,j} \) = Recipe-specific, process sub-type-specific, or process type-specific input gas \( i \) apportioning factor (expressed as a decimal fraction), as determined in accordance with §98.94(c).

\( C_i \) = Annual consumption of input gas \( i \) as calculated using Equation I-11 of this subpart (kg).

\( i \) = Input gas.

\( j \) = Recipe, process sub-type, or process type.

(f) If you report controlled emissions pursuant to §98.94(f), you must calculate the fraction of input gas \( i \) destroyed in abatement systems for each individual recipe (including those in a set of similar recipes) process sub-type, or process type \( j \) by using Equation I-14 of this subpart.

\[
d_{i,j} = \frac{\sum p C_{ijp} \times d_{ijp} \times u_p}{\sum p C_{ijp}} \quad \text{(Eq. I-14)}
\]

Where:

\( d_{i,j} \) = Fraction of input gas \( i \) destroyed or removed in abatement systems connected to process tools where recipe, process sub-type, or process type \( j \) is used (expressed as a decimal fraction).

\( C_{ijp} \) = The amount of input gas \( i \) consumed for recipe, process sub-type, or process type \( j \) fed into abatement system \( p \) (kg).

\( d_{ijp} \) = Destruction or removal efficiency for input gas \( i \) in abatement system \( p \) connected to process tools where recipe, process sub-type, or process type \( j \) is used (expressed as a decimal fraction). This is zero unless the facility adheres to requirements in §98.94(f).

\( u_p \) = The uptime of abatement system \( p \) as calculated in Equation I-15 of this subpart (expressed as a decimal fraction).

\( i \) = Input gas.

\( j \) = Recipe, process sub-type, or process type.

\( p \) = Abatement system.

(g) If you report controlled emissions pursuant to §98.94(f), you must calculate the uptime by using Equation I-15 of this subpart.

\[
u_p = \frac{t_p}{T_p} \quad \text{(Eq. I-15)}
\]

Where:

\( u_p \) = The uptime of abatement system \( p \) (expressed as a decimal fraction).

\( t_p \) = The total time in which abatement system \( p \) is in an operational mode when fluorinated GHGs or \( N_2O \) are flowing through production process tool(s) connected to abatement system \( p \) (hours).

\( T_p \) = Total time in which fluorinated GHGs or \( N_2O \) are flowing through production process tool(s) connected to abatement system \( p \) (hours).

\( p \) = Abatement system.

(h) If you use fluorinated heat transfer fluids, you must report the annual emissions of fluorinated GHG heat transfer fluids using the mass balance approach described in Equation I-16 of this subpart.

\[
EH_i = \text{density}_i \times (I_{iB} + P_i - N_i + R_i - I_{iE} - D_i) \times 0.001 \quad \text{(Eq. I-16)}
\]

Where:

\( EH_i \) = Emissions of fluorinated GHG heat transfer fluid \( i \), (metric tons/year).
Density, $i = \text{Density of fluorinated heat transfer fluid } i \ (\text{kg/l}).$

$I_b = \text{Inventory of fluorinated heat transfer fluid } i \ \text{in containers other than equipment at the beginning of the reporting year (in stock or storage)} \ (l). \text{ The inventory at the beginning of the reporting year must be the same as the inventory at the end of the previous reporting year.}$

$P_i = \text{Acquisitions of fluorinated heat transfer fluid } i \ \text{during the reporting year (l), including amounts purchased from chemical suppliers, amounts purchased from equipment suppliers with or inside of equipment, and amounts returned to the facility after off-site recycling.}$

$N_i = \text{Total nameplate capacity (full and proper charge) of equipment that uses fluorinated heat transfer fluid } i \ \text{and that is newly installed during the reporting year (l).}$

$R_i = \text{Total nameplate capacity (full and proper charge) of equipment that uses fluorinated heat transfer fluid } i \ \text{and that is removed from service during the reporting year (l).}$

$I_iE = \text{Inventory of fluorinated heat transfer fluid } i \ \text{in containers other than equipment at the end of the reporting year (in stock or storage)} \ (l).$

$D_i = \text{Disbursements of fluorinated heat transfer fluid } i \ \text{during the reporting year, including amounts returned to chemical suppliers, sold with or inside of equipment, and sent off-site for verifiable recycling or destruction (l). Disbursements should include only amounts that are properly stored and transported so as to prevent emissions in transit.}$

$0.001 = \text{Conversion factor from kg to metric tons.}$

$1 = \text{Heat transfer fluid.}$

§ 98.94 Monitoring and QA/QC requirements.

(a) For calendar year 2011 monitoring, you may follow the provisions in paragraphs (a)(1) through (a)(3) of this section for best available monitoring methods.

(1) **Best available monitoring methods.** From January 1, 2011 through September 30, 2011, owners or operators may use best available monitoring methods for any parameter that cannot reasonably be measured according to the monitoring and QA/QC requirements of this subpart. The owner or operator must use the calculation methodologies and equations in §98.93, but may use the best available monitoring method for any parameter for which it is not reasonably feasible to acquire, install, or operate a required piece of monitoring equipment in a facility, or to procure necessary measurement services by January 1, 2011. Starting no later than October 1, 2011, the owner or operator must discontinue using best available monitoring methods and begin following all applicable monitoring and QA/QC requirements of this part, except as provided in paragraphs (a)(2), (a)(3), or (a)(4) of this section. Best available monitoring methods means any of the following methods specified in this paragraph:

(i) Monitoring methods currently used by the facility that do not meet the specifications of this subpart.

(ii) Supplier data.

(iii) Engineering calculations.

(iv) Other company records.

(2) **Requests for extension of the use of best available monitoring methods in 2011 for parameters other than recipe-specific utilization and by-product formation rates for the plasma etching process type.** With respect to any provision of this subpart except §98.93(a)(2)(ii)(A), the owner or operator may submit a request to the Administrator under this paragraph (a)(2) to use one or more best available monitoring methods to estimate emissions that occur between July 1, 2011 and December 31, 2011.

(i) **Timing of request.** The extension request must be submitted to EPA no later than February 28, 2011.

(ii) **Content of request.** Requests must contain the following information:

(A) A list of specific items of monitoring instrumentation and measuring services for which the request is being made and the locations where each piece of monitoring instrumentation will be installed and where each measurement service will be provided.

(B) Identification of the specific rule requirements for which the instrumentation or measurement service is needed.

(C) A description of the reasons why the needed equipment could not be obtained, installed, or operated or why the needed measurement service could not be provided before July 1, 2011.

(D) If the reason for the extension is that the equipment cannot be purchased, delivered, or installed before
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July 1, 2011, include supporting documentation such as the date the monitoring equipment was ordered, investigation of alternative suppliers, and the dates by which alternative vendors promised delivery or installation, backorder notices or unexpected delivery of actions taken to expedite delivery or installation, and the current expected date of delivery or installation.

(E) If the reason for the extension is that service providers were unable to provide necessary measurement services, include supporting documentation demonstrating that these services could not be acquired before July 1, 2011. This documentation must include written correspondence to and from at least three service providers stating that they will not be available to provide the necessary services before July 1, 2011.

(F) A detailed description of the specific best available monitoring methods that the facility will use in place of the required methods.

(G) A description of the specific actions the owner or operator will take to comply with monitoring requirements by January 1, 2012.

(iii) Approval criteria. To obtain approval, the owner or operator must demonstrate to the Administrator’s satisfaction that by December 31, 2011, it is not reasonably feasible to acquire, install, or operate the required piece of monitoring equipment or procure necessary measurement services to comply with the requirements of this subpart. As a condition for allowing the use of best available monitoring methods through December 31, 2011, facilities must recalculate and resubmit their 2011 estimated emissions using the requirements of this subpart. The facility’s recalculation must be reported with its report for the 2012 reporting year (to be submitted in 2013) unless the facility receives an additional extension under paragraph (a)(4) of this section.

(4) Requests for extension of the use of best available monitoring methods beyond 2011. EPA does not anticipate approving the use of best available monitoring methods beyond December 31, 2011; however, EPA reserves the right to approve any such requests submitted for unique and extreme circumstances, which include safety,
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technical infeasibility, or inconsistency with other local, State or Federal regulations.

(i) Timing of request. The extension request must be submitted to EPA no later than September 30, 2011.

(ii) Content of request. Requests must contain the following information:

(A) A list of parameters for which the owner or operator is seeking use of best available monitoring methods beyond 2011.

(B) A description of the specific rule requirements that the owner or operator cannot meet, including a detailed explanation as to why the requirements cannot be met.

(C) Detailed description of the unique circumstances necessitating an extension, including specific data collection issues that do not meet safety regulations, technical infeasibility, or specific laws or regulations that conflict with data collection.

(D) A detailed explanation and supporting documentation of how and when the owner or operator will receive the required data and/or services to comply with the reporting requirements of this subpart in the future.

(E) A detailed description of the specific best available monitoring methods that the facility will use in place of the required methods.

(F) The Administrator reserves the right to require that the owner or operator provide additional documentation.

(iii) Approval criteria. To obtain approval, the owner or operator must demonstrate to the Administrator’s satisfaction that by December 31, 2011 (or in the case of facilities that are required to calculate and report emissions in accordance with §98.93(a)(2)(ii)(A), December 31, 2012), it is not reasonably feasible to acquire, install, or operate the required piece of monitoring equipment according to the requirements of this subpart. As a condition for allowing the use of best available monitoring methods through December 31, 2012, facilities must recalculate and resubmit their 2012 estimated emissions using the requirements of this subpart. Where a facility is allowed to use best available monitoring methods for apportioning gas consumption under §98.94(c), it is not required to verify its 2012 engineering model with its recalculated report. The facility’s recalculated emissions must be reported with its report for the 2013 reporting year (to be submitted in 2014).

(b) For purposes of Equation I–12 of this subpart, you must estimate facility-wide gas-specific heel factors for each container type for each gas used, except for fluorinated GHGs or N₂O which your facility uses in quantities less than 50 kg in one reporting year, according to the procedures in paragraphs (b)(1) through (b)(5) of this section.

(1) Base your facility-wide gas-specific heel factors on the trigger point for change out of a container for each container size and type for each gas used. Facility-wide gas-specific heel factors must be expressed as the ratio of the trigger point for change out, in terms of mass, to the initial mass in the container, as determined by paragraphs (b)(2) and (b)(3) of this section.

(2) The trigger points for change out you use to calculate facility-wide gas-specific heel factors in §98.94(b)(1) must be determined by monitoring the mass or the pressure of your containers. If you monitor the pressure, convert the pressure to mass using the ideal gas law, as displayed in Equation I–17 of this subpart, with the appropriate Z value selected based upon the properties of the gas.

\[ pV = ZnRT \quad (\text{Eq. I-17}) \]

Where:

- \( p \) = Absolute pressure of the gas (Pa).
- \( V \) = Volume of the gas (m³).
- \( Z \) = Compressibility factor.
- \( n \) = Amount of substance of the gas (moles).
- \( R \) = Gas constant (8.314 Joule/Kelvin mole).
- \( T \) = Absolute temperature (K).

(3) The initial mass you use to calculate a facility-wide gas-specific heel factor in §98.94(b)(1) may be based on the weight of the gas provided to you.
in gas supplier documents; however, you remain responsible for the accuracy of these masses and weights under this subpart.

(4) If a container is changed in an exceptional circumstance, you must weigh that container or measure the pressure of that container with a pressure gauge, in place of using a heel factor to determine the residual weight of gas. An exceptional circumstance is a change out point that differs by more than 20 percent from the trigger point for change out used to calculate your facility-wide gas-specific heel factor for that gas and container type. When using mass-based trigger points for change out, you must determine if an exceptional circumstance has occurred based on the net weight of gas in the container, excluding the tare weight of the container.

(5) You must re-calculate a facility-wide gas-specific heel factor if you use a trigger point for change out for a gas and container type that differs by more than 5 percent from the previously used trigger point for change out for that gas and container type.

(c) You must develop apportioning factors for fluorinated GHG and N₂O consumption to use in Equation I–13 of this subpart for each input gas i, as appropriate, using a facility-specific engineering model that is documented in your site GHG Monitoring Plan as required under §98.3(g)(5). This model must be based on a quantifiable metric, such as wafer passes or wafer starts. To verify your model, you must demonstrate its precision and accuracy by adhering to the requirements in paragraphs (c)(1) and (c)(2) of this section.

(1) You must demonstrate that the fluorinated GHG and N₂O apportioning factors are developed using calculations that are repeatable, as defined in §98.98.

(2) You must demonstrate the accuracy of your facility-specific model by comparing the actual amount of input gas i consumed and the modeled amount of input gas i consumed for the plasma etching and chamber cleaning process types, as follows:

(i) You must analyze at least a 30-day period of operation during which the facility experiences its highest 30-day average utilization for model verification.

(ii) You must compare the actual gas consumed of input gas i to the modeled gas consumed of input gas i for one fluorinated GHG reported under this subpart under the plasma etching process type and the chamber cleaning process type. You must certify that the fluorinated GHGs selected for comparison correspond to the largest quantities, on a mass basis, of fluorinated GHGs used at your facility during the reporting year for the plasma etching process type and the chamber cleaning process type.

(iii) You must demonstrate that the comparison performed for the largest quantity of gas, on a mass basis, consumed under the plasma etching process type in paragraph (c)(2)(ii) of this section, does not result in a difference between the actual and modeled gas consumption that exceeds five percent relative to actual gas consumption, reported to one significant figure using standard rounding conventions.

(d) If you use factors for fluorinated GHG process utilization and by-product formation rates other than the defaults provided in Tables I–3, I–4, I–5, I–6, and I–7 to this subpart, you must use utilization and by-product formation rates that are developed with measurements made using the International SEMATECH #06124825A–ENG (incorporated by reference, see §98.7). You may use recipe-specific utilization and by-product formation rates that were measured using the International SEMATECH #01104197A–XFR (incorporated by reference, see §98.7) provided the measurements were made prior to January 1, 2007. You may use recipe-specific utilization and by-product formation rates measured by a third party, such as a manufacturing equipment supplier, if the conditions in paragraphs (d)(1) and (d)(2) of this section are met.

(1) The third party has measured recipe-specific utilization and by-product formation rates using the International SEMATECH #06124825A–ENG (incorporated by reference, see §98.7),
or the International SEMATECH #01104197A-XFR (incorporated by reference, see §98.7) provided the measurements were made prior to January 1, 2007.

(2) Measurements made by a third party to develop recipe-specific utilization and by-product formation rates must have been made for recipes that are similar recipes to those used at your facility, as defined in §98.98.

(e) If you use N\textsubscript{2}O utilization factors other than the defaults provided in Table I–8 to this subpart, you must use factors developed with measurements made using the International SEMATECH #06124825A-ENG (incorporated by reference, see §98.7). You may use measurements made using the International SEMATECH #01104197A-XFR (incorporated by reference, see §98.7) provided the measurements were made prior to January 1, 2007. You may use N\textsubscript{2}O utilization factors measured by a third party, such as a manufacturing equipment supplier, if the conditions in paragraphs (e)(1) and (e)(2) of this section are met.

(1) The third party has measured N\textsubscript{2}O utilization factors using the International SEMATECH #06124825A-ENG (incorporated by reference, see §98.7). You may use measurements made using the International SEMATECH #01104197A-XFR (incorporated by reference, see §98.7) provided the measurements were made prior to January 1, 2007. You may use N\textsubscript{2}O utilization factors measured by a third party, such as a manufacturing equipment supplier, if the conditions in paragraphs (e)(1) and (e)(2) of this section are met.

(2) The conditions under which the measurements were made are representative of your facility’s N\textsubscript{2}O emitting production processes.

(f) If your facility employs abatement systems and you wish to reflect emission reductions due to these systems in calculations in §98.93, you must adhere to the procedures in paragraphs (f)(1) and (f)(2) of this section. If you use the default destruction or removal efficiency of 60 percent, you must adhere to procedures in paragraph (f)(3) of this section. If you use either a properly measured destruction or removal efficiency as defined in §98.98, or a class average of properly measured destruction or removal efficiencies during a reporting year, you must adhere to procedures in paragraph (f)(4) of this section.

(1) You must certify and document that the abatement systems are properly installed, operated, and maintained according to manufacturers' specifications by adhering to the procedures in paragraphs (i)(1) and (i)(ii) of this section.

(i) You must certify and document proper installation by verifying your systems were installed in accordance with the manufacturers' specifications.

(ii) You must certify and document your systems are operated and maintained in accordance with the manufacturers’ specifications.

(2) You must calculate and report the uptime of abatement systems using Equation I–15 of this subpart.

(3) To report emissions using the default destruction or removal efficiency of 60 percent, you must certify and document that the abatement systems at your facility are specifically designed for fluorinated GHG and N\textsubscript{2}O abatement.

(4) If you do not use the default destruction or removal efficiency value to calculate and report controlled emissions, you must use either a properly measured destruction or removal efficiency, or a class average of properly measured destruction or removal efficiencies, determined in accordance with procedures in paragraphs (f)(4)(i) through (f)(4)(v) of this section.

(i) A properly measured destruction or removal efficiency value must be determined in accordance with EPA 430-R-10-003 (incorporated by reference, see §98.7).

(ii) You must annually select and properly measure the destruction or removal efficiency for a random sample of abatement systems to include in a random sampling abatement system testing program (RSASTP) in accordance with procedures in paragraphs (f)(4)(ii)(A) and (f)(4)(ii)(B) of this section.

(A) Each reporting year for each abatement system class a random sample of three or 20 percent of installed abatement systems, whichever is greater, must be tested. If 20 percent of the total number of abatement systems in each class does not equate to a whole number, the number of systems to be tested must be determined by rounding up to the nearest integer.
(B) You must select the random sample each reporting year for the RSASTP without repetition of previously-measured systems in the sample, until all systems in each class are properly measured in a 5-year period.

(iii) If you have measured the destruction or removal efficiency of a particular abatement system during the previous 2-year period, you must calculate emissions from that system using the most recently measured destruction or removal efficiency for that particular system.

(iv) If the destruction or removal efficiency of an individual abatement system has not been properly measured during the previous 2-year period, you may use a simple average of the properly measured destruction or removal efficiencies for systems of that class, in accordance with the RSASTP. Your facility must maintain or exceed the RSASTP schedule if you wish to apply class average destruction or removal efficiency factors to abatement systems that have not yet been properly measured.

(v) If your facility uses redundant abatement systems, you may account for the total abatement system uptime calculated for a specific exhaust stream during the reporting year.

(g) You must adhere to the QA/QC procedures of this paragraph when calculating fluorinated GHG and N\(_2\)O emissions from electronics manufacturing production processes:

(1) Follow the QA/QC procedures in the International SEMATECH #06124825A–ENG (incorporated by reference, see §98.7) when measuring and calculating facility-specific, recipe-specific fluorinated GHG and N\(_2\)O utilization and by-product formation rates.

(2) Where you use facility-specific, recipe-specific fluorinated GHG and N\(_2\)O utilization and by-product formation rates measured prior to January 1, 2007, verify that the QA/QC procedures in the International SEMATECH #01104197A–XFR (incorporated by reference, see §98.7) were followed during measurement and calculation of the factors.

(3) Follow the QA/QC procedures in accordance with those in EPA 430-R–10-003 (incorporated by reference, see §98.7) when calculating abatement systems destruction or removal efficiencies.

(h) Demonstrate that as part of normal facility operations the inventory of gas stored in containers at the beginning of the reporting year is the same as the inventory of gas stored in containers at the end of the previous reporting year.

(i) If you have measured the destruction or removal efficiency of a particular abatement system during the previous 2-year period, you must calculate emissions from that system using the most recently measured destruction or removal efficiency for that particular system.

(ii) If the destruction or removal efficiency of an individual abatement system has not been properly measured during the previous 2-year period, you may use a simple average of the properly measured destruction or removal efficiencies for systems of that class, in accordance with the RSASTP. Your facility must maintain or exceed the RSASTP schedule if you wish to apply class average destruction or removal efficiency factors to abatement systems that have not yet been properly measured.

(v) If your facility uses redundant abatement systems, you may account for the total abatement system uptime calculated for a specific exhaust stream during the reporting year.

(g) You must adhere to the QA/QC procedures of this paragraph (h) when calculating annual gas consumption for each fluorinated GHG and N\(_2\)O used at your facility and fluorinated GHG emissions from heat transfer fluid use.

(1) Review all inputs to Equations I–11 and I–16 of this subpart to ensure that all inputs and outputs are accounted for.

(2) Do not enter negative inputs into the mass balance Equations I–11 and I–16 of this subpart and ensure that no negative emissions are calculated.

(3) Ensure that the inventory at the beginning of one reporting year is identical to the inventory reported at the end of the previous reporting year.

(4) Ensure that the total quantity of gas i in containers in service at the end of a reporting year is accounted for as if the in-service containers were full for Equation I–11 of this subpart. Ensure also that the same quantity is accounted for in the inventory of input gas i stored in containers at the beginning of the subsequent reporting year.

(i) All flowmeters, weigh scales, pressure gauges, and thermometers used to measure quantities that are monitored under this section or used in calculations under §98.93 must have an accuracy and precision of one percent of full scale or better.

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using the arithmetic average of the emission rates for the reporting year immediately preceding the period of missing data and the months immediately following the period of missing data. Alternatively, you may estimate missing information using records from the heat transfer fluid supplier. You must document the method used and values used for all missing data values.

§ 98.96 Data reporting requirements.

In addition to the information required by §98.3(c), you must include in each annual report the following information for each electronics manufacturing facility:

(a) Annual manufacturing capacity of your facility as determined in Equation I-5 of this subpart.

(b) For facilities that manufacture semiconductors, the diameter of wafers manufactured at your facility (mm).

(c) Annual emissions of:
   (1) Each fluorinated GHG emitted from each process type for which your facility is required to calculate emissions as calculated in Equations I-6 and I-7 of this subpart.
   (2) Each fluorinated GHG emitted from each individual recipe (including those in a set of similar recipes), or process sub-type as calculated in Equations I-8 and I-9 of this subpart, as applicable.
   (3) N₂O emitted from each chemical vapor deposition process and from other N₂O-using manufacturing processes as calculated in Equation I-10 of this subpart.
   (4) Each heat transfer fluid emitted as calculated in Equation I-16 of this subpart.
   (d) The method of emissions calculation used in §98.93.
   (e) Annual production in terms of substrate surface area (e.g., silicon, PV-cell, glass).
   (f) When you use factors for fluorinated GHG process utilization and by-product formation rates other than the defaults provided in Tables I-3, I-4, I-5, I-6, and I-7 of this subpart and/or N₂O utilization factors other than the defaults provided in Table I-8 of this subpart, you must report the following, as applicable:
      (1) The recipe-specific utilization and by-product formation rates for each individual recipe (or set of similar recipes) and/or facility-specific N₂O utilization factors.
      (2) For recipe-specific utilization and by-product formation rates, the film or substrate that was etched/cleaned and the feature type that was etched, as applicable.
      (3) Certification that the recipes included in a set of similar recipes are similar, as defined in §98.98.
   (g) Annual gas consumption for each fluorinated GHG and N₂O as calculated in Equation I-11 of this subpart, including where your facility used less than 50 kg of a particular fluorinated GHG or N₂O during the reporting year. For all fluorinated GHGs and N₂O used at your facility for which you have not calculated emissions using Equations I-6, I-7, I-8, I-9, and I-10 of this subpart, the chemical name of the GHG used, the annual consumption of the gas, and a brief description of its use.
   (h) All inputs used to calculate gas consumption in Equation I-11 of this subpart, for each fluorinated GHG and N₂O used.
   (i) Disbursements for each fluorinated GHG and N₂O during the reporting year, as calculated using Equation I-12 of this subpart.
   (j) All inputs used to calculate disbursements for each fluorinated GHG and N₂O used in Equation I-12 of this subpart, including all facility-wide gas-specific heel factors used for each
fluorinated GHG and N\(_2\)O. If your facility used less than 50 kg of a particular fluorinated GHG during the reporting year, facility-wide gas-specific heel factors do not need to be reported for those gases.

(k) Annual amount of each fluorinated GHG consumed for each recipe, process sub-type, or process type, as appropriate, and the annual amount of N\(_2\)O consumed for each chemical vapor deposition and other electronics manufacturing production processes, as calculated using Equation I–13 of this subpart.

(l) All apportioning factors used to apportion fluorinated GHG and N\(_2\)O consumption.

(m) For the facility-specific apportioning model used to apportion fluorinated GHG and N\(_2\)O consumption under §98.94(c), the following information to determine it is verified in accordance with procedures in §98.94(c)(1) and (2):

(i) Identification of the quantifiable metric used in your facility-specific engineering model to apportion gas consumption.

(ii) The start and end dates selected under §98.94(c)(2)(i).

(iii) Certification that the gases you selected under §98.94(c)(2)(ii) correspond to the largest quantities consumed on a mass basis, at your facility in the reporting year for the plasma etching process type and the chamber cleaning process type.

(iv) The result of the calculation comparing the actual and modeled gas consumption under §98.94(c)(2)(iii).

(n) Fraction of each fluorinated GHG or N\(_2\)O fed into a recipe, process sub-type, or process type that is fed into tools connected to abatement systems.

(o) Fraction of each fluorinated GHG or N\(_2\)O destroyed or removed in abatement systems connected to process tools where recipe, process sub-type, or process type \(j\) is used, as well as all inputs and calculations used to determine the inputs for Equation I–14 of this subpart.

(p) Inventory and description of all abatement systems through which fluorinated GHGs or N\(_2\)O flow at your facility, including the number of devices of each manufacturer, model numbers, manufacturer claimed fluorinated GHG and N\(_2\)O destruction or removal efficiencies, if any, and records of destruction or removal efficiency measurements over their in-use lives. The inventory of abatement systems must describe the tools with model numbers and the recipe(s), process sub-type, or process type for which these systems treat exhaust.

(q) For each abatement system through which fluorinated GHGs or N\(_2\)O flow at your facility, for which you are reporting controlled emissions, the following:

(1) Certification that each abatement system has been installed, maintained, and operated in accordance with manufacturers’ specifications.

(2) All inputs and results of calculations made accounting for the uptime of abatement systems used during the reporting year, in accordance with Equations I–14 and I–15 of this subpart.

(3) The default destruction or removal efficiency value or properly measured destruction or removal efficiencies for each abatement system used in the reporting year.

(4) Where the default destruction or removal efficiency value is used to report controlled emissions, certification that the abatement systems for which emissions are being reported were specifically designed for fluorinated GHG and N\(_2\)O abatement. You must support this certification by providing abatement system supplier documentation stating that the system was designed for fluorinated GHG and N\(_2\)O abatement.

(5) Where properly measured destruction or removal efficiencies or class averages of destruction or removal efficiencies are used, the following must also be reported:

(i) A description of the class, including the abatement system manufacturer and model number and the fluorinated GHG(s) and N\(_2\)O in the effluent stream.

(ii) The total number of systems in that class for the reporting year.

(iii) The total number of systems for which destruction or removal efficiency was properly measured in that class for the reporting year.

(iv) A description of the calculation used to determine the class average, including all inputs to the calculation.
(v) A description of the method used for randomly selecting class members for testing.

(vi) For heat transfer fluid emissions, inputs to the heat transfer fluid mass balance equation, Equation I-16 of this subpart, for each fluorinated GHG used.

(s) Where missing data procedures were used to estimate inputs into the heat transfer fluid mass balance equation under §§98.95(b), the number of times missing data procedures were followed in the reporting year, the method used to estimate the missing data, and the estimates of those data.

(t) A brief description of each “best available monitoring method” used according to §98.94(a), the parameter measured or estimated using the method, and the time period during which the “best available monitoring method” was used.

§ 98.97 Records that must be retained.

In addition to the information required by §98.3(g), you must retain the following records:

(a) All data used and copies of calculations made as part of estimating gas consumption and emissions, including all spreadsheets.

(b) Documentation for the values used for fluorinated GHG and N$_2$O utilization and by-product formation rates. If you use facility-specific and recipe-specific utilization and by-product formation rates, the following records must also be retained, as applicable:

(1) Complete documentation and final report for measurements for recipe-specific utilization and by-product formation rates demonstrating that the values were measured using International SEMATECH #06124825A–ENG (incorporated by reference, see §98.7) or, if the measurements were made prior to January 1, 2007, International SEMATECH #01104197A–XFR (incorporated by reference, see §98.7).

(2) Sample calculations used for developing a recipe-specific, process sub-type-specific, or process type-specific gas apportioning factors ($f_{ij}$) for the two fluorinated GHGs used at your facility in the largest quantities, on a mass basis, during the reporting year.

(d) For each abatement system through which fluorinated GHGs or N$_2$O flow at your facility, for which you are reporting controlled emissions, the following:

(1) Documentation to certify the abatement system is installed, maintained, and operated in accordance with manufacturers’ specifications.

(2) Abatement system calibration and maintenance records.

(3) Where the default destruction or removal efficiency value is used, documentation from the abatement system supplier describing the equipment’s designed purpose and emission control capabilities for fluorinated GHG and N$_2$O.
§ 98.98 Definitions.

Except as provided in this section, all of the terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part. If a conflict exists between a definition provided in this subpart and a definition provided in subpart A, the definition in this subpart takes precedence for the reporting requirements in this subpart.

Abatement system means a device or equipment that destroys or removes fluorinated GHGs and N₂O in waste streams from one or more electronics manufacturing production processes.

Actual gas consumption means the quantity of gas used during wafer/substrate processing over some period based on a measured change in gas container weight or gas container pressure or on a measured volume of gas.

By-product formation means the creation of fluorinated GHGs during electronics manufacturing production processes or the creation of fluorinated GHGs by an abatement system. By-product formation is the ratio of the mass of the by-product formed to the mass flow of the input gas, where, for multi-fluorinated-GHG recipes, the denominator corresponds to the fluorinated GHG with the largest mass flow.

Chamber cleaning is a process type that consists of the process sub-types defined in paragraphs (1) through (3) of this definition.

(1) In situ plasma process sub-type consists of the cleaning of thin-film production chambers, after processing substrates, with a fluorinated GHG cleaning reagent that is dissociated into its cleaning constituents by a plasma generated inside the chamber where the film is produced.

(2) Remote plasma process sub-type consists of the cleaning of thin-film production chambers, after processing substrates, with a fluorinated GHG cleaning reagent dissociated by a remotely located plasma source.

(3) In situ thermal process sub-type consists of the cleaning of thin-film production chambers, after processing substrates, with a fluorinated GHG cleaning reagent that is thermally dissociated into its cleaning constituents inside the chamber where thin films are produced.

Class means a category of abatement systems grouped by manufacturer model number(s) and by the gas that the system abates, including N₂O and carbon tetrafluoride (CF₄) direct emissions and by-product formation, and all other fluorinated GHG direct emissions and by-product formation. Classes may also include any other abatement systems for which the reporting facility wishes to report controlled emissions provided that class is identified.

Controlled emissions means the quantity of emissions that are released to the atmosphere after application of an emission control device (e.g., abatement system).

Destruction or removal efficiency (DRE) means the efficiency of an abatement system to destroy or remove fluorinated GHGs, N₂O, or both. The destruction or removal efficiency is equal to one minus the ratio of the mass of all relevant GHGs exiting the abatement system to the mass of GHG entering the abatement system. When GHGs are formed in an abatement system, destruction or removal efficiency is expressed as one minus the ratio of amounts of exiting GHGs to the...
amounts entering the system in units of CO$_2$-equivalents (CO$_2$e).

Gas utilization means the fraction of input N$_2$O or fluorinated GHG converted to other substances during the etching, deposition, and/or wafer and chamber cleaning processes. Gas utilization is expressed as a rate or factor for specific electronics manufacturing recipes, process sub-types, or process types.

Heat transfer fluids are fluorinated GHGs used for temperature control, device testing, and soldering in certain types of electronic manufacturing production processes. Heat transfer fluids used in the electronics sector include perfluoropolyethers, perfluoroalkanes, perfluoroethers, tertiary perfluoroamines, and perfluorocyclic ethers. Electronics manufacturers may also use these same fluorinated chemicals to clean substrate surfaces and other parts.

Heel means the amount of gas that remains in a gas container after it is discharged or off-loaded; heel may vary by container type.

Individual recipe means a specific combination of gases, under specific conditions of reactor temperature, pressure, flow, radio frequency (RF) power and duration, used repeatedly to fabricate a specific feature on a specific film or substrate.

Maximum designed substrate starts means the maximum quantity of substrates, expressed as surface area, that could be started each month during a reporting year if the facility were fully equipped as defined in the facility design specifications and if the equipment were fully utilized. It denotes 100 percent of annual manufacturing capacity of a facility.

Modeled gas consumed means the quantity of gas used during wafer/substrate processing over some period based on a verified facility-specific engineering model used to apportion gas consumption.

Nameplate capacity means the full and proper charge of chemical specified by the equipment manufacturer to achieve the equipment’s specified performance. The nameplate capacity is typically indicated on the equipment’s nameplate; it is not necessarily the actual charge, which may be influenced by leakage and other emissions.

Operational mode means the time in which an abatement system is being operated within the range of parameters as specified in the operations manual provided by the system manufacturer.

Plasma etching is a process type that consists of any production process using fluorinated GHG reagents to selectively remove materials from a substrate during electronics manufacturing. The materials removed may include SiO$_2$, SiO$_x$-based or fully organic-based thin-film material, SiN, SiON, Si$_3$N$_4$, SiC, SiCO, SiCN, etc. (represented by the general chemical formula, Si$_w$O$_x$N$_y$X$_z$ where w, x, y and z are zero or integers and X may be some other element such as carbon), substrate, or metal films (such as aluminum or tungsten).

Process sub-type is a set of similar manufacturing steps, more closely related within a broad process type. For example, the chamber cleaning process type includes in-situ plasma chamber cleaning, remote plasma chamber cleaning, and in-situ thermal chamber cleaning sub-types.

Process types are broad groups of manufacturing steps used at a facility associated with substrate (e.g., wafer) processing during device manufacture for which fluorinated GHG emissions and fluorinated GHG usages are calculated and reported. The process types are Plasma etching, Chamber cleaning, and Wafer cleaning.

Properly measured destruction or removal efficiency means destruction or removal efficiencies measured in accordance with EPA 430–R–10–003 (incorporated by reference, see §98.7).

The Random Sampling Abatement System Testing Program (RSASTP) means the required frequency for measuring the destruction or removal efficiencies of abatement systems in order to apply properly measured destruction or removal efficiencies to report controlled emissions.

Redundant abatement systems means a system that is specifically designed, installed and operated for the purpose of destroying fluorinated GHGs and N$_2$O gases. A redundant abatement system is used as a backup to the main
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fluorinated GHGs and N₂O abatement system during those times when the main system is not functioning or operating in accordance with design and operating specifications.

Repeatable means that the variables used in the formulas for the facility’s engineering model for gas apportioning factors are based on observable and measurable quantities that govern gas consumption rather than engineering judgment about those quantities or gas consumption.

Similar, with respect to recipes, means those recipes that are composed of the same set of chemicals and have the same flow stabilization times and where the documented differences, considered separately, in reactor pressure, individual gas flow rates, and applied radio frequency (RF) power are less than or equal to plus or minus 10 percent. For purposes of comparing and documenting recipes that are similar, facilities may use either the best known method provided by an equipment manufacturer or the process of record, for which emission factors for either have been measured.

Trigger point for change out means the residual weight or pressure of a gas container type that a facility uses to change out that gas container.

Uptime means the ratio of the total time during which the abatement system is in an operational mode with fluorinated GHGs or N₂O flowing through production process tool(s) connected to that abatement system, to the total time during which fluorinated GHGs or N₂O are flowing through production process tool(s) connected to that abatement system.

Wafer cleaning is a process type that consists of any production process using fluorinated GHG reagents to clean wafers at any step during production.

Wafer passes is a count of the number of times a wafer substrate is processed in a specific process recipe, sub-type, or type. The total number of wafer passes over a reporting year is the number of wafer passes per tool multiplied by the number of operational process tools in use during the reporting year.

Wafer starts means the number of fresh wafers that are introduced into the fabrication sequence each month. It includes test wafers, which means wafers that are exposed to all of the conditions of process characterization, including but not limited to actual etch conditions or actual film deposition conditions.

| Product type | Emission factors EF
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<tbody>
<tr>
<td></td>
<td>CF₄</td>
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<tr>
<td>Semiconductors (kg/m²)</td>
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<tr>
<td>LCD (g/m²)</td>
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<td>MEMS (kg/m²)</td>
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Notes: NA denotes not applicable based on currently available information.

<table>
<thead>
<tr>
<th>Product type</th>
<th>Fluorinated GHGs used during manufacture</th>
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<tr>
<td>Electronics</td>
<td>CF₄, C₂F₆, c-C₂F₆, c-C₂F₇O, C₂F₇, C₃F₈, CHF₃, CH₂F₂, NF₃, SF₆, and HTFs (CF₄-[(O–CF₂)-CF₄]ₙ-[(O–CF₂)-O–CF₂], CₙF₂₃₋₄, CₙF₂₃₋₄(O)CₙF₂₃₋₄, CₙF₂₃₋₄D, (CₙF₂₃₋₄)ₙ)</td>
</tr>
<tr>
<td>Process type/Sub-type</td>
<td>Process gas i</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------</td>
</tr>
<tr>
<td><strong>Plasma Etching</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1–U&lt;sub&gt;i&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;4&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;/sub&gt;</td>
</tr>
<tr>
<td><strong>Chamber Cleaning</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>In situ plasma cleaning:</td>
</tr>
<tr>
<td></td>
<td>1–U&lt;sub&gt;i&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;4&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;/sub&gt;</td>
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<td></td>
<td>BCF&lt;sub&gt;F&lt;sub&gt;3&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>Remote plasma cleaning:</td>
</tr>
<tr>
<td></td>
<td>1–U&lt;sub&gt;i&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;4&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;sub&gt;3&lt;/sub&gt;</td>
</tr>
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<td></td>
<td>In situ thermal cleaning:</td>
</tr>
<tr>
<td></td>
<td>1–U&lt;sub&gt;i&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;4&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;sub&gt;3&lt;/sub&gt;</td>
</tr>
<tr>
<td><strong>Wafer Cleaning</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1–U&lt;sub&gt;i&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;4&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;sub&gt;3&lt;/sub&gt;</td>
</tr>
<tr>
<td>Notes: NA denotes not applicable based on currently available information. <strong>Table I–4 to Subpart I of Part 98—Default Emission Factors (1–U&lt;sub&gt;i&lt;/sub&gt;) for Gas Utilization Rates (U&lt;sub&gt;i&lt;/sub&gt;) and By-Product Formation Rates (B&lt;sub&gt;ijk&lt;/sub&gt;) for Semiconductor Manufacturing for 300 MM Wafer Size</strong></td>
<td></td>
</tr>
<tr>
<td>Process type/Sub-type</td>
<td>Process gas i</td>
</tr>
<tr>
<td><strong>Plasma Etching</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;4&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;sub&gt;3&lt;/sub&gt;</td>
</tr>
<tr>
<td><strong>Chamber Cleaning</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>In situ plasma cleaning:</td>
</tr>
<tr>
<td></td>
<td>1–U&lt;sub&gt;i&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;4&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;sub&gt;3&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>Remote Plasma Cleaning:</td>
</tr>
<tr>
<td></td>
<td>1–U&lt;sub&gt;i&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;4&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;/sub&gt;</td>
</tr>
<tr>
<td></td>
<td>BCF&lt;sub&gt;F&lt;sub&gt;3&lt;/sub&gt;</td>
</tr>
</tbody>
</table>
## Table I–4 to Subpart I of Part 98—Default Emission Factors \((1-U_{ij})\) for Gas Utilization Rates \((U_{ij})\) and By-Product Formation Rates \((B_{ijk})\) for Semiconductor Manufacturing

For 300 mm Wafer Size—Continued

<table>
<thead>
<tr>
<th>Process type/sub-type</th>
<th>Process gas</th>
<th>(\text{CF}_4)</th>
<th>(\text{C}_2\text{F}_6)</th>
<th>(\text{CHF}_3)</th>
<th>(\text{CH}_2\text{F}_6)</th>
<th>(\text{C}_2\text{F}_4)</th>
<th>(\text{e-C}_2\text{F}_4)</th>
<th>(\text{NF}_3)</th>
<th>(\text{SF}_6)</th>
<th>(\text{C}_3\text{F}_8)</th>
<th>(\text{C}_4\text{F}_8)</th>
<th>(\text{C}_5\text{F}_8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–(U_{ij}) ..........</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.28</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>BCF(_4) .............</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.010</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>BC(_2)F(_6) .........</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>BC(_3)F(_8) .........</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Wafer Cleaning**

<table>
<thead>
<tr>
<th>Process type/sub-type</th>
<th>Process gas</th>
<th>(\text{CF}_4)</th>
<th>(\text{C}_2\text{F}_6)</th>
<th>(\text{CHF}_3)</th>
<th>(\text{CH}_2\text{F}_6)</th>
<th>(\text{C}_2\text{F}_4)</th>
<th>(\text{e-C}_2\text{F}_4)</th>
<th>(\text{NF}_3)</th>
<th>(\text{SF}_6)</th>
<th>(\text{C}_3\text{F}_8)</th>
<th>(\text{C}_4\text{F}_8)</th>
<th>(\text{C}_5\text{F}_8)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1–(U_{ij}) ..........</td>
<td>0.77</td>
<td>NA</td>
<td>NA</td>
<td>0.24</td>
<td>NA</td>
<td>NA</td>
<td>0.23</td>
<td>0.23</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>BCF(_4) .............</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>BC(_2)F(_6) .........</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>BC(_3)F(_8) .........</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

**Notes:** NA denotes not applicable based on currently available information.
TABLE I–5 TO SUBPART I OF PART 98—DEFAULT EMISSION FACTORS (1–Uij) FOR GAS UTILIZATION RATES (Uij) AND BY-PRODUCT FORMATION RATES (Bijk) FOR MEMS MANUFACTURING

| Process type factors | Process gas i | | | | | | | | | | |
|----------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                      | CF4           | C2F6          | CHF3          | C3F8          | C4F6         | NF3          | SF6          | C5F8         | C4F6O4       |               |               |               |
| Etch 1–Uij           | 0.7           | 1.04          | 1.04          | 1.06          | NA           | 1.02         | NA           | 0.2          | 0.06         | NA           | 0.2           | 0.2           | 0.1           |
| Etch BC2F6           | NA            | NA            | NA            | NA            | NA           | 0.2          | NA           | 0.1          | 0.02         | NA           | 0.2           | 0.1           | NA            |
| Etch BC3F8           | NA            | NA            | NA            | NA            | NA           | NA           | NA           | 0.1          | 0.1          | NA           | 0.1           | 0.1           | 0.1           |
| CVD 1–Uij            | 0.9           | 0.6           | 0.4           | 0.1           | 0.02         | 0.2          | NA           | 0.1          | 0.1          | 0.2          | 0.1           | 0.1           | 0.1           |
| CVD BC2F6            | NA            | 0.1           | NA            | NA            | 0.1          | 0.1          | 0.2          | 0.1          | 0.1          | 0.2          | 0.1           | 0.1           | 0.1           |
| CVD BC3F8            | NA            | NA            | NA            | NA            | NA           | NA           | NA           | NA           | NA           | NA           | NA            | NA            | NA            |

Notes: NA denotes not applicable based on currently available information.

1 Estimate includes multi-gas etch processes.
2 Estimate reflects presence of low-k, carbide and multi-gas etch processes that may contain a C-containing fluorinated GHG additive.
§ 98.110 40 CFR Ch. 1 (7–1–11 Edition)

TABLE I–6 TO SUBPART I OF PART 98—DEFAULT EMISSION FACTORS (1–\(U_{ij}\)) FOR GAS UTILIZATION RATES (\(U_i\)) AND BY-PRODUCT FORMATION RATES (\(B_{ijk}\)) FOR LCD MANUFACTURING

<table>
<thead>
<tr>
<th>Process type factors</th>
<th>Process Gas i</th>
<th>CF(_4)</th>
<th>C(_2)F(_6)</th>
<th>CHF(_3)</th>
<th>CH(_2)F(_2)</th>
<th>C(_3)F(_8)</th>
<th>c-C(_3)F(_8)</th>
<th>NF(_3) Remote</th>
<th>NF(_3)</th>
<th>SF(_6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etch 1–U(_i) ..............................................</td>
<td>0.6</td>
<td>NA</td>
<td>0.2</td>
<td>NA</td>
<td>NA</td>
<td>0.1</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.3</td>
</tr>
<tr>
<td>Etch BCF(_i) ...........................................</td>
<td>NA</td>
<td>NA</td>
<td>0.07</td>
<td>NA</td>
<td>NA</td>
<td>0.009</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Etch BC(_2)F(_6) ...........................................</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.02</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>CVD 1–U(_i) ..............................................</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.03</td>
<td>0.3</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Notes: NA denotes not applicable based on currently available information.

TABLE I–7 TO SUBPART I OF PART 98—DEFAULT EMISSION FACTORS (1–\(U_{ij}\)) FOR GAS UTILIZATION RATES (\(U_i\)) AND BY-PRODUCT FORMATION RATES (\(B_{ijk}\)) FOR PV MANUFACTURING

<table>
<thead>
<tr>
<th>Process type factors</th>
<th>Process Gas i</th>
<th>CF(_4)</th>
<th>C(_2)F(_6)</th>
<th>CHF(_3)</th>
<th>CH(_2)F(_2)</th>
<th>C(_3)F(_8)</th>
<th>c-C(_3)F(_8)</th>
<th>NF(_3) Remote</th>
<th>NF(_3)</th>
<th>SF(_6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Etch 1–U(_i) ..............................................</td>
<td>0.7</td>
<td>0.4</td>
<td>0.4</td>
<td>NA</td>
<td>NA</td>
<td>0.2</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.4</td>
</tr>
<tr>
<td>Etch BCF(_i) ...........................................</td>
<td>NA</td>
<td>0.2</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.1</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Etch BC(_2)F(_6) ...........................................</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.1</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.3</td>
</tr>
<tr>
<td>CVD 1–U(_i) ..............................................</td>
<td>NA</td>
<td>0.6</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.1</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Notes: NA denotes not applicable based on currently available information.

TABLE I–8 TO SUBPART I OF PART 98—DEFAULT EMISSION FACTORS (1–\(U_{NO}\)) FOR N\(_2\)O UTILIZATION (\(U_{NO}\))

<table>
<thead>
<tr>
<th>Process type factors</th>
<th>N(_2)O</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVD 1–U(_i) ..........</td>
<td>0.8</td>
</tr>
<tr>
<td>Other Manufacturing Process 1–U(_i)</td>
<td>1.0</td>
</tr>
</tbody>
</table>

Subpart J [Reserved]

Subpart K—Ferroalloy Production

§ 98.110 Definition of the source category.

The ferroalloy production source category consists of any facility that uses pyrometallurgical techniques to produce any of the following metals: ferrochromium, ferromanganese, ferromolybdenum, ferronickel, ferrosilicon, ferrotitanium, ferrotungsten, ferrovanadium, siliconmanganese, or silicon metal.

§ 98.111 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a ferroalloy production process and the facility meets the requirements of either §98.2(a)(1) or (2).

§ 98.112 GHGs to report.

You must report:

(a) Process CO\(_2\) emissions from each electric arc furnace (EAF) used for the production of any ferroalloy listed in §98.110, and process CH\(_4\) emissions from each EAF that is used for the production of any ferroalloy listed in Table K–1 to subpart K.

(b) CO\(_2\), CH\(_4\), and N\(_2\)O emissions from each stationary combustion unit following the requirements of subpart C of this part. You must report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources).


§ 98.113 Calculating GHG emissions.

You must calculate and report the annual process CO\(_2\) emissions from each EAF not subject to paragraph (c) of this section using the procedures in either paragraph (a) or (b) of this section. For each EAF also subject to annual process CH\(_4\) emissions reporting, you must also calculate and report the annual process CH\(_4\) emissions from the EAF using the procedures in paragraph (d) of this section.

(a) Calculate and report under this subpart the process CO\(_2\) emissions by
operating and maintaining CEMS according to the Tier 4 Calculation Methodology in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(b) Calculate and report under this subpart the annual process CO\textsubscript{2} emissions using the procedure in either paragraph (b)(1) or (b)(2) of this section.

(1) Calculate and report under this subpart the annual process CO\textsubscript{2} emissions from EAFs by operating and maintaining a CEMS according to the Tier 4 Calculation Methodology specified in §98.33(a)(4) and the applicable requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(2) Calculate and report under this subpart the annual process CO\textsubscript{2} emissions from the EAFs using the carbon mass balance procedure specified in paragraphs (b)(2)(i) and (b)(2)(ii) of this section.

(i) For each EAF, determine the annual mass of carbon in each carbon-containing input and output material for the EAF and estimate annual process CO\textsubscript{2} emissions from the EAF using Equation K–1 of this section. Carbon-containing input materials include carbon electrodes and carbonaceous reducing agents. If you document that a specific input or output material contributes less than 1 percent of the total carbon into or out of the process, you do not have to include the material in your calculation using Equation K–1 of this section.

\[
E_{CO2} = \frac{44}{12} \times \frac{2000}{2205} \sum_{i} \left( M_{\text{reducing agent}_i} \times C_{\text{reducing agent}_i} \right) \\
+ \frac{44}{12} \times \frac{2000}{2205} \sum_{m} \left( M_{\text{electrode}_m} \times C_{\text{electrode}_m} \right) \\
+ \frac{44}{12} \times \frac{2000}{2205} \sum_{h} \left( M_{\text{ore}_h} \times C_{\text{ore}_h} \right) \\
+ \frac{44}{12} \times \frac{2000}{2205} \sum_{l} \left( M_{\text{flux}_l} \times C_{\text{flux}_l} \right) \\
- \frac{44}{12} \times \frac{2000}{2205} \sum_{k} \left( M_{\text{product outgoing}_k} \times C_{\text{product outgoing}_k} \right) \\
- \frac{44}{12} \times \frac{2000}{2205} \sum_{l} \left( M_{\text{non-product outgoing}_l} \times C_{\text{non-product outgoing}_l} \right)
\]

(Eq. K-1)

Where:

- $E_{CO2}$ = Annual process CO\textsubscript{2} emissions from an individual EAF (metric tons).
- $\frac{44}{12}$ = Ratio of molecular weights, CO\textsubscript{2} to carbon.
- $\frac{2000}{2205}$ = Conversion factor to convert tons to metric tons.
- $M_{\text{reducing agent}_i}$ = Annual mass of reducing agent $i$ fed, charged, or otherwise introduced into the EAF (tons).
- $C_{\text{reducing agent}_i}$ = Carbon content in reducing agent $i$ (percent by weight, expressed as a decimal fraction).
- $M_{\text{electrode}_m}$ = Annual mass of carbon electrode $m$ consumed in the EAF (tons).
- $C_{\text{electrode}_m}$ = Carbon content of the carbon electrode $m$ (percent by weight, expressed as a decimal fraction).
- $M_{\text{ore}_h}$ = Annual mass of ore $h$ charged to the EAF (tons).
- $C_{\text{ore}_h}$ = Carbon content of the ore $h$ charged to the EAF (percent by weight, expressed as a decimal fraction).
- $M_{\text{flux}_l}$ = Annual mass of flux $l$ charged to the EAF (tons).
- $C_{\text{flux}_l}$ = Carbon content of the flux $l$ charged to the EAF (percent by weight, expressed as a decimal fraction).
- $M_{\text{product outgoing}_k}$ = Annual mass of outgoing product $k$ from the EAF (tons).
- $C_{\text{product outgoing}_k}$ = Carbon content of the outgoing product $k$ from the EAF (percent by weight, expressed as a decimal fraction).
- $M_{\text{non-product outgoing}_l}$ = Annual mass of outgoing non-product $l$ from the EAF (tons).
- $C_{\text{non-product outgoing}_l}$ = Carbon content of the outgoing non-product $l$ from the EAF (percent by weight, expressed as a decimal fraction).
§ 98.113

CO\textsubscript{2} = \sum_{k} E_{CO_{2}} \quad \text{(Eq. K-2)}

Where:

CO\textsubscript{2} = Annual process CO\textsubscript{2} emissions from EAFs at facility used for the production of any ferroalloy listed in §98.110 (metric tons).

E_{CO_{2}} = Annual process CO\textsubscript{2} emissions calculated from EAF \( k \) calculated using Equation K-1 of this section (metric tons).

\( k \) = Total number of EAFs at facility used for the production of any ferroalloy listed in §98.110.

(c) If GHG emissions from an EAF are vented through the same stack as any combustion unit or process equipment that reports CO\textsubscript{2} emissions using a CEMS that complies with the Tier 4 Calculation Methodology in subpart C of this part (General Stationary Fuel Combustion Sources), then the calculation methodology in paragraph (b) of this section shall not be used to calculate process emissions. The owner or operator shall report under this subpart the combined stack emissions according to the Tier 4 Calculation Methodology in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part.

(d) For the EAFs at your facility used for the production of any ferroalloy listed in Table K-1 of this subpart, you must calculate and report the annual CH\textsubscript{4} emissions using the procedure specified in paragraphs (d)(1) and (2) of this section.

(1) For each EAF, determine the annual CH\textsubscript{4} emissions using Equation K-3 of this section.

\begin{equation}
E_{CH_{4}} = \sum_{i} \left( \frac{M_{\text{product}i}}{2000} \times \frac{EF_{\text{product}i}}{2205} \right) \quad \text{(Eq. K-3)}
\end{equation}

Where:

E_{CH_{4}} = Annual process CH\textsubscript{4} emissions from an individual EAF (metric tons).

M_{\text{product}i} = Annual mass of alloy product \( i \) produced in the EAF (tons).

2000/2205 = Conversion factor to convert tons to metric tons.

EF_{\text{product}i} = CH\textsubscript{4} emission factor for alloy product \( i \) from Table K-1 in this subpart (kg of CH\textsubscript{4} emissions per metric ton of alloy product \( i \)).

(2) Determine the combined process CH\textsubscript{4} emissions from the EAFs at your facility using Equation K-4 of this section:

\begin{equation}
CH_{4} = \sum_{j} E_{CH_{4j}} \quad \text{(Eq. K-4)}
\end{equation}

Where:

CH\textsubscript{4} = Annual process CH\textsubscript{4} emissions from EAF \( j \) calculated using Equation K-3 of this section (metric tons).

E_{CH_{4j}} = Annual process CH\textsubscript{4} emissions from EAF \( j \) calculated using Equation K-3 of this section (metric tons).

\( j \) = Total number of EAFs at facility used for the production of ferroalloys listed in Table K-1 of this subpart.

§ 98.114 Monitoring and QA/QC requirements.

If you determine annual process CO$_2$ emissions using the carbon mass balance procedure in §98.113(b)(2), you must meet the requirements specified in paragraphs (a) and (b) of this section.

(a) Determine the annual mass for each material used for the calculations of annual process CO$_2$ emissions using Equation K–1 of this subpart by summing the monthly mass for the material determined for each month of the calendar year. The monthly mass may be determined using plant instruments used for accounting purposes, including either direct measurement of the quantity of the material placed in the unit or by calculations using process operating information.

(b) For each material identified in paragraph (a) of this section, you must determine the average carbon content of the material consumed, used, or produced in the calendar year using the methods specified in either paragraph (b)(1) or (b)(2) of this section. If you document that a specific process input or output contributes less than one percent of the total mass of carbon into or out of the process, you do not have to determine the monthly mass or annual carbon content of that input or output.

(1) Information provided by your material supplier.

(2) Collecting and analyzing at least three representative samples of the material inputs and outputs each year. The carbon content of the material must be analyzed at least annually using the standard methods (and their QA/QC procedures) specified in paragraphs (b)(2)(i) through (b)(2)(iii) of this section, as applicable.

(i) ASTM E1941-04, Standard Test Method for Determination of Carbon in Refractory and Reactive Metals and Their Alloys (incorporated by reference, see §98.7) for analysis of metal ore and alloy product.

(ii) ASTM D5373-08 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, see §98.7), for analysis of carbonaceous reducing agents and carbon electrodes.

(iii) ASTM C25-06, Standard Test Methods for Chemical Analysis of Limestone, Quicklime, and Hydrated Lime (incorporated by reference, see §98.7) for analysis of flux materials such as limestone or dolomite.

§ 98.115 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations in §98.113 is required. Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter shall be used in the calculations as specified in the paragraphs (a) and (b) of this section. You must document and keep records of the procedures used for all such estimates.

(a) If you determine CO$_2$ emissions for the EAFs at your facility using the carbon mass balance procedure in §98.113(b), 100 percent data availability is required for the carbon content of the input and output materials. You must repeat the test for average carbon contents of inputs according to the procedures in §98.114(b) if data are missing.

(b) For missing records of the monthly mass of carbon-containing inputs and outputs, the substitute data value must be based on the best available estimate of the mass of the inputs and outputs from all available process data or data used for accounting purposes, such as purchase records.

(c) If you are required to calculate CH$_4$ emissions for an EAF at your facility as specified in §98.113(d), the estimate is based on an annual quantity of certain alloy products, so 100 percent data availability is required.

§ 98.116 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) through (e) of this section, as applicable:

(a) Annual facility ferroalloy product production capacity (tons).

(b) Annual production for each ferroalloy product identified in §98.119, from each EAF (tons).
§ 98.117 Records that must be retained.

In addition to the records required by §98.3(g), you must retain the records specified in paragraphs (a) through (d) of this section for each EAF, as applicable.

(a) If a CEMS is used to measure CO₂ emissions according to the requirements in §98.113(a), then you must retain under this subpart the records required for the Tier 4 Calculation Methodology in §98.37 and the information specified in paragraphs (a)(1) through (a)(3) of this section.

(1) Monthly EAF production quantity for each ferroalloy product (tons).

(2) Number of EAF operating hours each month.

(3) Number of EAF operating hours in a calendar year.

(b) If the carbon mass balance procedure is used to determine CO₂ emissions according to the requirements in §98.113(b)(2), then you must retain records for the information specified in paragraphs (b)(1) through (b)(5) of this section.

(1) Monthly EAF production quantity for each ferroalloy product (tons).

(2) Number of EAF operating hours each month.

(3) Number of EAF operating hours in a calendar year.

(4) Monthly material quantity consumed, used, or produced for each material included for the calculations of annual process CO₂ emissions (tons).

(5) Average carbon content determined and records of the supplier provided information or analyses used for the determination for each material included for the calculations of annual process CO₂ emissions.

(c) You must keep records that include a detailed explanation of how company records of measurements are used to estimate the carbon input and output to each EAF, including documentation of specific input or output materials excluded from Equation K-1 of this subpart that contribute less than 1 percent of the total carbon into or out of the process. You also must
document the procedures used to ensure the accuracy of the measurements of materials fed, charged, or placed in an EAF, including, but not limited to, calibration of weighing equipment and other measurement devices. The estimated accuracy of measurements made with these devices must also be recorded, and the technical basis for these estimates must be provided.

(d) If you are required to calculate CH₄ emissions for the EAF as specified in §98.113(d), you must maintain records of the total amount of each alloy product produced for the specified reporting period, and the appropriate alloy-product specific emission factor used to calculate the CH₄ emissions.

§98.118 Definitions.

All terms used of this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Table K-1 to Subpart K of Part 98—Electric Arc Furnace (EAF) CH₄ Emission Factors

<table>
<thead>
<tr>
<th>Alloy product produced in EAF</th>
<th>CH₄ emission factor (kg CH₄ per metric ton product)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EAF Operation</td>
</tr>
<tr>
<td></td>
<td>Batch-charging</td>
</tr>
<tr>
<td>Silicon metal</td>
<td>1.5</td>
</tr>
<tr>
<td>Ferrosilicon 90%</td>
<td>1.4</td>
</tr>
<tr>
<td>Ferrosilicon 75%</td>
<td>1.3</td>
</tr>
<tr>
<td>Ferrosilicon 65%</td>
<td>1.3</td>
</tr>
</tbody>
</table>

*Sprinkle-charging is charging intermittently every minute.

Subpart L—Fluorinated Gas Production

SOURCE: 75 FR 74831, Dec. 1, 2010, unless otherwise noted.

§98.120 Definition of the source category.

(a) The fluorinated gas production source category consists of processes that produce a fluorinated gas from any raw material or feedstock chemical, except for processes that generate HFC–23 during the production of HCFC–22.

(b) To produce a fluorinated gas means to manufacture a fluorinated gas from any raw material or feedstock chemical. Producing a fluorinated gas includes producing a fluorinated GHG as defined at §98.410(b). Producing a fluorinated gas also includes the manufacture of a chlorofluorocarbon (CFC) or hydrochlorofluorocarbon (HCFC) from any raw material or feedstock chemical, including manufacture of a CFC or HCFC as an isolated intermediate for use in a process that will result in the transformation of the CFC or HCFC either at or outside of the production facility. Producing a fluorinated gas does not include the reuse or recycling of a fluorinated gas, the creation of HFC–23 during the production of HCFC–22, the creation of intermediates that are created and transformed in a single process with no storage of the intermediates, or the creation of fluorinated GHGs that are released or destroyed at the production facility before the production measurement in §98.414(a).

§98.121 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a fluorinated gas production process that generates or emits fluorinated GHG and the facility meets the requirements of either §98.2(a)(1) or (a)(2). To calculate GHG emissions for comparison to the 25,000 metric ton CO₂eq per year emission threshold in §98.2(a)(2), calculate process emissions from fluorinated gas production using uncontrolled GHG emissions.
§ 98.122 GHGs to report.

(a) You must report CO₂, CH₄, and N₂O combustion emissions from each stationary combustion unit. You must calculate and report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.

(b) You must report under subpart O of this part (HCFC–22 Production and HFC–23 Destruction) the emissions of HFC–23 from HCFC–22 production processes and HFC–23 destruction processes. Do not report the generation and emissions of HFC–23 from HCFC–22 production under this subpart.

(c) You must report the total mass of each fluorinated GHG emitted from:

1. Each fluorinated gas production process and all fluorinated gas production processes combined.
2. Each fluorinated gas transformation process that is not part of a fluorinated gas production process and all such fluorinated gas transformation processes combined, except report separately fluorinated GHG emissions from transformation processes where a fluorinated GHG reactant is produced at another facility.
3. Each fluorinated gas destruction process that is not part of a fluorinated gas production process or a fluorinated gas transformation process and all such fluorinated gas destruction processes combined.
4. Venting of residual fluorinated GHGs from containers returned from the field.

§ 98.123 Calculating GHG emissions.

For fluorinated gas production and transformation processes, you must calculate the fluorinated GHG emissions from each process using either the mass balance method specified in paragraph (b) of this section or the emission factor or emission calculation factor method specified in paragraphs (c), (d), and (e) of this section, as appropriate. For destruction processes that destroy fluorinated GHGs that were previously “produced” as defined at § 98.410(b), you must calculate emissions using the procedures in paragraph (f) of this section. For venting of residual gas from containers (e.g., cylinder heels), you must calculate emissions using the procedures in paragraph (g) of this section.

(a) Default GWP value. In paragraphs (b)(1) and (c)(1) of this section and in §98.124(b)(8) and (c)(2), use a GWP of 2,000 for fluorinated GHGs that do not have GWPs listed in Table A–1 to subpart A of this part, except as provided in paragraph §98.123(c)(1)(vi). Do not report CO₂ emissions under §98.3(c)(4) for fluorinated GHGs that do not have GWPs listed in Table A–1 to subpart A of this part.

(b) Mass balance method. Before using the mass balance approach to estimate your fluorinated GHG emissions from a process, you must ensure that the process and the equipment and methods used to measure it meet either the error limits described in this paragraph and calculated under paragraph (b)(1) of this section or the requirements specified in paragraph §98.124(b)(8). If you choose to calculate the error limits, you must estimate the absolute and relative errors associated with using the mass balance approach on that process using Equations L–1 through L–4 of this section in conjunction with Equations L–5 through L–10 of this section. You may use the mass-balance approach to estimate emissions from the process if this calculation results in an absolute error of less than or equal to 3,000 metric tons CO₂e per year or a relative error of less than or equal to 30 percent of the estimated CO₂e fluorinated GHG emissions. If you do not meet either of the error limits or the requirements of paragraph §98.124(b)(8), you must use the emission factor approach detailed in paragraphs (c), (d), and (e) of this section to estimate emissions from the process.

(1) Error calculation. To perform the calculation, you must first calculate the absolute and relative errors associated with the quantities calculated using either Equations L–7 through L–10 of this section or Equation L–17 of this section. Alternatively, you may estimate these errors based on the variability of previous process measurements (e.g., the variability of measurements of stream concentrations), provided these measurements are representative of the current process and
current measurement devices and techniques. Once errors have been calculated for the quantities in these equations, those errors must be used to calculate the errors in Equations L-6 and L-5 of this section. You may ignore the errors associated with Equations L-11, L-12, and L-13 of this section.

(i) Where the measured quantity is a mass, the error in the mass must be equated to the accuracy or precision (whichever is larger) of the flowmeter, scale, or combination of volumetric and density measurements at the flow rate or mass measured.

(ii) Where the measured quantity is a concentration of a stream component, the error of the concentration must be equated to the accuracy or precision (whichever is larger) with which you estimate the mean concentration of that stream component, accounting for the variability of the process, the frequency of the measurements, and the accuracy or precision (whichever is larger) of the analytical technique used to measure the concentration at the concentration measured. If the variability of process measurements is used to estimate the error, this variability shall be assumed to account both for the variability of the process and the precision of the analytical technique. Use standard statistical techniques such as the student’s t distribution to estimate the error of the mean of the concentration measurements as a function of process variability and frequency of measurement.

(iii) Equation L-1 of this section provides the general formula for calculating the absolute errors of sums and differences where the sum, S, is the summation of variables measured, a, b, c, etc. (e.g., S = a + b + c):

\[ e_{SA} = \left[ \left( a \cdot e_a \right)^2 + \left( b \cdot e_b \right)^2 + \left( c \cdot e_c \right)^2 \right]^{1/2} \text{ (Eq. L-1)} \]

Where:
- \( e_{SA} \) = Absolute error of the sum, expressed as one half of a 95 percent confidence interval.
- \( e_a \) = Relative error of a, expressed as one half of a 95 percent confidence interval.
- \( e_b \) = Relative error of b, expressed as one half of a 95 percent confidence interval.
- \( e_c \) = Relative error of c, expressed as one half of a 95 percent confidence interval.
- \( e_r \) = Relative error of c, expressed as one half of a 95 percent confidence interval.

(iv) Equation L-2 of this section provides the general formula for calculating the relative errors of sums and differences:

\[ e_{SR} = \frac{e_{st}}{a + b + c} \text{ (Eq. L-2)} \]

Where:
- \( e_{SR} \) = Relative error of the sum, expressed as one half of a 95 percent confidence interval.
- \( e_{st} \) = Absolute error of the sum, expressed as one half of a 95 percent confidence interval.
- \( a \) = Absolute error of the sum, expressed as one half of a 95 percent confidence interval.
- \( b \) = Absolute error of the sum, expressed as one half of a 95 percent confidence interval.
- \( c \) = Sum of the variables measured.

(v) Equation L-3 of this section provides the general formula for calculating the absolute errors of products (e.g., flow rates of GHGs calculated as the product of the flow rate of the stream and the concentration of the GHG in the stream), where the product, P, is the result of multiplying the variables measured, a, b, c, etc. (e.g., \( P = a \cdot b \cdot c \)):

\[ e_{PA} = (a \cdot b \cdot c) \left( e_a^2 + e_b^2 + e_c^2 \right)^{1/2} \text{ (Eq. L-3)} \]
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Where:

\( e_{PA} \) = Absolute error of the product, expressed as one half of a 95 percent confidence interval.

\( e_a \) = Relative error of \( a \), expressed as one half of a 95 percent confidence interval.

\( e_b \) = Relative error of \( b \), expressed as one half of a 95 percent confidence interval.

\( e_c \) = Relative error of \( c \), expressed as one half of a 95 percent confidence interval.

(vi) Equation L–4 of this section provides the general formula for calculating the relative errors of products:

\[
e_{PR} = \frac{e_{PA}}{(a*b*c)}
\]

(Eq. L–4)

Where:

\( e_{PR} \) = Relative error of the product, expressed as one half of a 95 percent confidence interval.

\( e_{PA} \) = Absolute error of the product, expressed as one half of a 95 percent confidence interval.

\( a*b*c \) = Product of the variables measured.

(vii) Calculate the absolute error of the emissions estimate in terms of CO\(_2\) by performing a preliminary estimate of the annual CO\(_2\) emissions of the process using the method in paragraph (b)(1)(viii) of this section. Multiply this result by the relative error calculated for the mass of fluorine emitted from the process in Equation L–6 of this section.

(viii) To estimate the annual CO\(_2\) emissions of the process for use in the error estimate, apply the methods set forth in paragraphs (b)(2) through (b)(7) and (b)(9) through (b)(16) of this section to representative process measurements. If these process measurements represent less than one year of typical process activity, adjust the estimated emissions to account for one year of typical process activity. To estimate the terms FER\(_d\), FEP, and FEB\(_k\) for use in the error estimate for Equations L–11, L–12, and L–13 of this section, you must either use emission testing, monitoring of emitted streams, and/or engineering calculations or assessments, or in the alternative assume that all fluorine is emitted in the form of the fluorinated GHG that has the highest GWP among the fluorinated GHGs that occur in more than trace concentrations in the process. To convert the fluorinated GHG emissions to CO\(_2\), use Equation A–1 of §98.2. For fluorinated GHGs whose GWPs are not listed in Table A–1 to subpart A of this part, use a default GWP of 2,000.

(2) The total mass of each fluorinated GHG emitted annually from each fluorinated gas production and each fluorinated GHG transformation process must be estimated by using Equation L–5 of this section.

\[
E_{FGHF} = \sum_{p=1}^{n} (E_{Rp-FGHF} + E_{Pp-FGHF} + E_{Bp-FGHF})
\]

(Eq. L–5)

Where:

\( E_{FGHF} \) = Total mass of each fluorinated GHG f emitted annually from production or transformation process i (metric tons).

\( E_{Rp-FGHF} \) = Total mass of fluorinated GHG reactant f emitted from production process i over the period \( p \) (metric tons, calculated in Equation L–11 of this section).

\( E_{Pp-FGHF} \) = Total mass of the fluorinated GHG product f emitted from production process i over the period \( p \) (metric tons, calculated in Equation L–12 of this section).

\( E_{Bp-FGHF} \) = Total mass of fluorinated GHG by-product f emitted from production process i over the period \( p \) (metric tons, calculated in Equation L–13 of this section).

\( n \) = Number of concentration and flow measurement periods for the year.

(3) The total mass of fluorine emitted from process i over the period \( p \) must be estimated at least monthly by calculating the difference between the total mass of fluorine in the...
reactant(s) (or inputs, for processes that do not involve a chemical reaction) and the total mass of fluorine in the product (or outputs, for processes that do not involve a chemical reaction), accounting for the total mass of fluorine in any destroyed or recaptured streams that contain reactants, products, or by-products (or inputs or outputs). This calculation must be performed using Equation L–6 of this section. An element other than fluorine may be used in the mass-balance equation, provided the element occurs in all of the fluorinated GHGs fed into or generated by the process. In this case, the mass fractions of the element in the reactants, products, and by-products must be calculated as appropriate for that element.

\[
E_F = \sum_{i=1}^{v} (R_d \ast MFF_{Rd}) - P \ast MFF_P - F_D \quad \text{ (Eq. L–6)}
\]

Where:
- \(E_F\) = Total mass of fluorine emitted from process i over the period p (metric tons).
- \(R_d\) = Total mass of the fluorine-containing reactant d that is fed into process i over the period p (metric tons).
- \(P\) = Total mass of the fluorine-containing product produced by process i over the period p (metric tons).
- \(MFF_{Rd}\) = Mass fraction of fluorine in reactant d, calculated in Equation L–14 of this section.
- \(MFF_P\) = Mass fraction of fluorine in the product, calculated in Equation L–15 of this section.
- \(F_D\) = Total mass of fluorine in destroyed or recaptured streams from process i containing fluorine-containing reactants, products, and by-products over the period p, calculated in Equation L–7 of this section.
- \(v\) = Number of fluorine-containing reactants fed into process i.

(4) The mass of total fluorine in destroyed or recaptured streams containing fluorine-containing reactants, products, and by-products must be estimated at least monthly using Equation L–7 of this section unless you use the alternative approach provided in paragraph (b)(15) of this section.

\[
F_D = \sum_{j=1}^{q} P_j \ast MFF_P + \sum_{j=1}^{q} \left[ \sum_{k=1}^{u} B_{kj} \ast MFF_{Bk} \right] + \sum_{j=1}^{q} \sum_{k=1}^{u} R_{dj} \ast MFF_{Rd} \quad \text{ (Eq. L–7)}
\]

Where:
- \(F_D\) = Total mass of fluorine in destroyed or recaptured streams from process i containing fluorine-containing reactants, products, and by-products over the period p.
- \(P_j\) = Mass of the fluorine-containing product removed from process i in stream j and destroyed over the period p (calculated in Equation L–8 or L–9 of this section).
- \(B_{kj}\) = Mass of fluorine-containing by-product k removed from process i in stream j and destroyed over the period p (calculated in Equation L–8 or L–9 of this section).
- \(B_{kl}\) = Mass of fluorine-containing by-product k removed from process i in stream l and recaptured over the period p.
- \(R_{dj}\) = Mass of fluorine-containing reactant d removed from process i in stream j and destroyed over the period p (calculated in Equation L–8 or L–9 of this section).

\(MFF_{Rd}\) = Mass fraction of fluorine in reactant d, calculated in Equation L–14 of this section.
\(MFF_{Bk}\) = Mass fraction of fluorine in by-product k, calculated in Equation L–16 of this section.
\(q\) = Number of streams destroyed in process i.
\(x\) = Number of streams recaptured in process i.
\(u\) = Number of fluorine-containing by-products generated in process i.
\(v\) = Number of fluorine-containing reactants fed into process i.

(5) The mass of each fluorinated GHG removed from process i in stream j and destroyed over the period p (i.e., \(P_j\), \(B_{kj}\),

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or $R_d$, as applicable) must be estimated by applying the destruction efficiency of the device that has been demonstrated for the fluorinated GHG $f$ to fluorinated GHG $f$ using Equation L-8 of this section:

$$M_{FGHGf} = DE_{FGHGf} \cdot c_{FGHGf} \cdot S_j \quad (\text{Eq. L-8})$$

Where:
- $M_{FGHGf}$ = Mass of fluorinated GHG $f$ removed from process $i$ in stream $j$ and destroyed over the period $p$. (This may be $P_i$, $B_k$, or $R_d$, as applicable.)
- $DE_{FGHGf}$ = Destruction efficiency of the device that has been demonstrated for fluorinated GHG $f$ in stream $j$ (fraction).
- $c_{FGHGf}$ = Concentration (mass fraction) of fluorinated GHG $f$ in stream $j$ removed from process $i$ and fed into the destruction device over the period $p$. If this concentration is only a trace concentration, $c_{FGHGf}$ is equal to zero.
- $S_j$ = Mass removed in stream $j$ from process $i$ and fed into the destruction device over the period $p$ (metric tons).

(6) The mass of each fluorine-containing compound that is not a fluorinated GHG and that is removed from process $i$ in stream $j$ and destroyed over the period $p$ (i.e., $P_i$, $B_k$, or $R_d$, as applicable) must be estimated using Equation L-9 of this section.

$$M_{FCg} = c_{FCg} \cdot S_j \quad (\text{Eq. L-9})$$

Where:
- $M_{FCg}$ = Mass of non-GHG fluorine-containing compound $g$ removed from process $i$ in stream $j$ and destroyed over the period $p$. (This may be $P_i$, $B_k$, or $R_d$, as applicable.)
- $c_{FCg}$ = Concentration (mass fraction) of non-GHG fluorine-containing compound $g$ in stream $j$ removed from process $i$ and fed into the destruction device over the period $p$. If this concentration is only a trace concentration, $c_{FCg}$ is equal to zero.
- $S_j$ = Mass removed in stream $j$ from process $i$ and fed into the destruction device over the period $p$ (metric tons).

(7) The mass of fluorine-containing by-product $k$ removed from process $i$ in stream $l$ and recaptured over the period $p$ must be estimated using Equation L-10 of this section:

$$B_{kl} = c_{Bkl} \cdot S_l \quad (\text{Eq. L-10})$$

Where:
- $B_{kl}$ = Mass of fluorine-containing by-product $k$ removed from process $i$ in stream $l$ and recaptured over the period $p$ (metric tons).
- $c_{Bkl}$ = Concentration (mass fraction) of fluorine-containing by-product $k$ in stream $l$ removed from process $i$ and recaptured over the period $p$. If this concentration is only a trace concentration, $c_{Bkl}$ is equal to zero.
- $S_l$ = Mass removed in stream $l$ from process $i$ and recaptured over the period $p$ (metric tons).

(8) To estimate the terms $FER_d$, $FEP$, and $FEB_k$ for Equations L-11, L-12, and L-13 of this section, you must assume that the total mass of fluorine emitted, $E_F$, estimated in Equation L-6 of this section, occurs in the form of the fluorinated GHG that has the highest GWP among the fluorinated GHGs that occur in more than trace concentrations in the process unless you possess emission characterization measurements showing otherwise. These emission characterization measurements must meet the requirements in paragraph (8)(i), (ii), or (iii) of this section, as appropriate. The sum of the terms must equal 1. You must document the data and calculations that are used to speciate individual compounds and to
estimate FER, FEP, and FEB. Exclude from your calculations the fluorine included in F. For example, exclude fluorine-containing compounds that are not fluorinated GHGs and that result from the destruction of fluorinated GHGs by any destruction devices (e.g., the mass of HF created by combustion of an HFC). However, include emissions of fluorinated GHGs that survive the destruction process.

(i) If the calculations under paragraph (b)(1)(viii) of this section, or any subsequent measurements and calculations under this subpart, indicate that the process emits 25,000 metric tons CO₂e or more, estimate the emissions from each process vent, considering controls, using the methods in § 98.123(c)(1). You must characterize the emissions of any process vent that emits 25,000 metric tons CO₂e or more as specified in § 98.124(b)(4).

(ii) For other vents, including vents from processes that emit less than 25,000 metric tons CO₂e, you must characterize emissions as specified in § 98.124(b)(5).

(iii) For fluorine emissions that are not accounted for by vent estimates, you must characterize emissions as specified in § 98.124(b)(6).

(9) The total mass of fluorine-containing reactant d emitted must be estimated at least monthly based on the total fluorine emitted and the fraction that consists of fluorine-containing reactants using Equation L–11 of this section. If the fluorine-containing reactant d is a non-GHG, you may assume that FER is zero.

\[ E_{R-ip} = \frac{FER_d \times E_F}{\left( \sum_{d=1}^{v} FER_d \times MFF_{Rd} + FEP \times MFF_p + \sum_{k=1}^{u} FEB_k \times MFF_{Bk} \right)} \]  

(Eq. L–11)

Where:

- \( E_{R-ip} \): Total mass of fluorine-containing reactant d that is emitted from process i over the period p (metric tons).
- \( FER_d \): The fraction of the mass emitted that consists of the fluorine-containing reactant d.
- \( E_F \): Total mass of fluorine emissions from process i over the period p (metric tons), calculated in Equation L–6 of this section.
- \( FEP \): The fraction of the mass emitted that consists of the fluorine-containing product.
- \( FEB_k \): The fraction of the mass emitted that consists of fluorine-containing by-product k.
- \( MFF_{Rd} \): Mass fraction of fluorine in reactant d, calculated in Equation L–14 of this section.
- \( MFF_p \): Mass fraction of fluorine in the product, calculated in Equation L–15 of this section.
- \( MFF_{Bk} \): Mass fraction of fluorine in by-product k, calculated in Equation L–16 of this section.
- \( u \): Number of fluorine-containing by-products generated in process i.
- \( v \): Number of fluorine-containing reactants fed into process i.

(10) The total mass of fluorine-containing product emitted must be estimated at least monthly based on the total fluorine emitted and the fraction that consists of fluorine-containing products using Equation L–12 of this section. If the fluorine-containing product is a non-GHG, you may assume that FEP is zero.

\[ E_{P-ip} = \frac{FEP \times E_F}{\left( \sum_{d=1}^{v} FER_d \times MFF_{Rd} + FEP \times MFF_p + \sum_{k=1}^{u} FEB_k \times MFF_{Bk} \right)} \]  

(Eq. L–12)
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Where:

\[ E_{\text{F},i,p} = \text{Total mass of fluorine-containing product emitted from process } i \text{ over the period } p \text{ (metric tons).} \]

\[ \text{FEP} = \text{The fraction of the mass emitted that consists of the fluorine-containing product.} \]

\[ E_{\text{F},i,p} = \text{Total mass of fluorine emissions from process } i \text{ over the period } p \text{ (metric tons), calculated in Equation L–6 of this section.} \]

\[ \text{FER}_{d} = \text{The fraction of the mass emitted that consists of fluorine-containing reactant } d. \]

\[ \text{FER}_{k} = \text{The fraction of the mass emitted that consists of fluorine-containing by-product } k. \]

\[ \text{MFF}_{Rd} = \text{Mass fraction of fluorine in reactant } d, \text{ calculated in Equation L–14 of this section.} \]

\[ \text{MFF}_{P} = \text{Mass fraction of fluorine in the product, calculated in Equation L–15 of this section.} \]

\[ \text{MFF}_{Bk} = \text{Mass fraction of fluorine in by-product } k, \text{ calculation in Equation L–16 of this section.} \]

\[ u = \text{Number of fluorine-containing by-products generated in process } i. \]

\[ v = \text{Number of fluorine-containing reactants fed into process } i. \]

(11) The total mass of fluorine-containing by-product \( k \) emitted must be estimated at least monthly based on the total fluorine emitted and the fraction that consists of fluorine-containing by-products using Equation L–13 of this section. If fluorine-containing by-product \( k \) is a non-GHG, you may assume that \( \text{FEB}_{k} \) is zero.

\[ E_{\text{B}_k,i,p} = \frac{\sum_{1}^{v} \text{FER}_{d} \cdot \text{MFF}_{Rd} + \text{FEP} \cdot \text{MFF}_{P} + \sum_{k=1}^{u} \text{FEB}_{k} \cdot \text{MFF}_{Bk}}{\text{E}_{\text{F},i,p}} \]  

(Eq. L–13)

Where:

\[ E_{\text{B}_k,i,p} = \text{Total mass of fluorine-containing by-product } k \text{ emitted from process } i \text{ over the period } p \text{ (metric tons).} \]

\[ \text{FEB}_{k} = \text{The fraction of the mass emitted that consists of fluorine-containing by-product } k. \]

\[ \text{FER}_{d} = \text{The fraction of the mass emitted that consists of fluorine-containing reactant } d. \]

\[ \text{FEP} = \text{The fraction of the mass emitted that consists of the fluorine-containing product.} \]

\[ E_{\text{F},i,p} = \text{Total mass of fluorine emissions from process } i \text{ over the period } p \text{ (metric tons), calculated in Equation L–6 of this section.} \]

\[ \text{MFF}_{Rd} = \text{Mass fraction of fluorine in reactant } d, \text{ calculated in Equation L–14 of this section.} \]

(12) The mass fraction of fluorine in reactant \( d \) must be estimated using Equation L–14 of this section:

\[ \text{MFF}_{Rd} = \frac{\text{MF}_{Rd} \cdot \text{AW}_{F}}{\text{MW}_{Rd}} \]  

(Eq. L–14)

Where:

\[ \text{MFF}_{Rd} = \text{Mass fraction of fluorine in reactant } d \text{ (fraction).} \]

\[ \text{MF}_{Rd} = \text{Moles fluorine per mole of reactant } d. \]

\[ \text{AW}_{F} = \text{Atomic weight of fluorine.} \]

\[ \text{MW}_{Rd} = \text{Molecular weight of reactant } d. \]

(13) The mass fraction of fluorine in the product must be estimated using Equation L–15 of this section:

\[ \text{MFF}_{P} = \frac{\text{MF}_{P} \cdot \text{AW}_{F}}{\text{MW}_{P}} \]  

(Eq. L–15)
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Where:

\[ MFF_p = MF_p \times \frac{AF}{MW_p} \]  
(Eq. L-15)

\[ MFF_{Bk} = MF_{Bk} \times \frac{AF}{MW_{Bk}} \]  
(Eq. L-16)

Where:

MFF = Mass fraction of fluorine in the product (fraction).
MF = Moles fluorine per mole of product.
AW = Atomic weight of fluorine.
MW = Molecular weight of the product produced.
MW = Molecular weight of by-product k.

(14) The mass fraction of fluorine in by-product k must be estimated using Equation L-16 of this section:

(15) Alternative for determining the mass of fluorine destroyed or recaptured.

As an alternative to using Equation L-7 of this section as provided in paragraph (b)(4) of this section, you may estimate at least monthly the total mass of fluorine in destroyed or recaptured streams containing fluorine-containing compounds (including all fluorine-containing reactants, products, and by-products) using Equation L-17 of this section.

\[ F_D = \sum_{j=1}^{q} DE_{avgj} \times c_{TFj} \times S_j + \sum_{l=1}^{x} c_{TFl} \times S_l \]  
(Eq. L-17)

Where:

FD = Total mass of fluorine in destroyed or recaptured streams from process i containing fluorine-containing reactants, products, and by-products over the period p.
DE = Weighted average destruction efficiency of the destruction device for the fluorine-containing compounds identified in destroyed stream i under §98.124(b)(4)(i) and (5)(ii) (calculated in Equation L-18 of this section)(fraction).
c = Concentration (mass fraction) of total fluorine in stream j removed from process i and fed into the destruction device over the period p.
S = Mass removed in stream j from process i and fed into the destruction device over the period p (metric tons).
c = Concentration (mass fraction) of total fluorine in stream l removed from process i and recaptured over the period p. If this concentration is only a trace concentration, \( c_{TFl} \) is equal to zero.
q = Number of streams destroyed in process i.
x = Number of streams recaptured in process i.

(16) Weighted average destruction efficiency. For purposes of Equation L-17 of this section, calculate the weighted average destruction efficiency applicable to a destroyed stream using Equation L-18 of this section.
Where:

\( \text{DE}_{\text{avg}} \) = Weighted average destruction efficiency of the destruction device for the fluorine-containing compounds identified in destroyed stream \( j \) under 98.124(b)(4)(ii) or (b)(5)(ii), as appropriate.

\( \text{DE}_{\text{FCHGj}} \) = Destruction efficiency of the device that has been demonstrated for fluorinated GHG \( f \) in stream \( j \) (fraction).

\( c_{\text{FCHGj}} \) = Concentration (mass fraction) of fluorinated GHG \( f \) in stream \( j \) removed from process \( i \) and fed into the destruction device over the period \( p \). If this concentration is only a trace concentration, \( c_{\text{F–GHGj}} \) is equal to zero.

\( c_{\text{F–CHGj}} \) = Concentration (mass fraction) of non-GHG fluorine-containing compound \( g \) in stream \( j \) removed from process \( i \) and fed into the destruction device over the period \( p \). If this concentration is only a trace concentration, \( c_{\text{F–CHGj}} \) is equal to zero.

\( S_j \) = Mass removed in stream \( j \) from process \( i \) and fed into the destruction device over the period \( p \) (metric tons).

\( \text{MFF}_{\text{FCHGj}} \) = Mass fraction of fluorine in fluorinated GHG \( f \), calculated in Equation L-14, L-15, or L-16 of this section, as appropriate.

\( \text{MFF}_{\text{F–CHGj}} \) = Mass fraction of fluorine in non-GHG fluorine-containing compound \( g \), calculated in Equation L-14, L-15, or L-16 of this section, as appropriate.

\( w \) = Number of fluorinated GHGs in destroyed stream \( j \).

\( y \) = Number of non-GHG fluorine-containing compounds in destroyed stream \( j \).

\( (c) \) Emission factor and emission calculation factor methods. To use the method in this paragraph for batch processes, you must comply with either paragraph \( (c)(3) \) of this section (Emission Factor approach) or paragraph \( (c)(4) \) of this section (Emission Calculation Factor approach). To use the method in this paragraph for continuous processes, you must first make a preliminary estimate of the emissions from each individual continuous process vent under paragraph \( (c)(1) \) of this section. If your continuous process operates under different conditions as part of normal operations, you must also define the different operating scenarios and make a preliminary estimate of the emissions from the vent for each operating scenario. Then, compare the preliminary estimate for each continuous process vent (summed across operating scenarios) to the criteria in paragraph \( (c)(2) \) of this section to determine whether the process vent meets the criteria for using the emission factor method described in paragraph \( (c)(3) \) of this section or whether the process vent meets the criteria for using the emission calculation factor method described in paragraph \( (c)(4) \) of this section. For continuous process vents that meet the criteria for using the emission factor method described in paragraph \( (c)(3) \) of this section and that have more than one operating scenario, compare the preliminary estimate for each operating scenario to the criteria in \( (c)(3)(ii) \) to determine whether an emission factor must be developed for that operating scenario.

(1) Preliminary estimate of emissions by process vent. You must estimate the annual \( \text{CO}_2 \) emissions of fluorinated GHGs for each process vent within each operating scenario of a continuous process using the approaches specified in paragraph \( (c)(1)(i) \) or \( (c)(1)(ii) \) of this section, accounting for any destruction as specified in paragraph \( (c)(1)(ii) \) of this section. You must determine emissions of fluorinated GHGs by process vent by using measurements, by using calculations based on chemical engineering principles and chemical property data, or by conducting an engineering assessment. You may use previous measurements, calculations, and assessments if they represent current process operating conditions or process operating conditions that would result in higher fluorinated GHG emissions than the current operating conditions and if they were performed in accordance with paragraphs \( (c)(1)(i) \), \( (c)(1)(ii) \), and \( (c)(1)(iii) \) of this section, as applicable. You must document all data, assumptions, and procedures used in the calculations or engineering assessment.
and keep a record of the emissions determination as required by §98.127(a).

(i) Engineering calculations. For process vent emission calculations, you may use any of paragraphs (c)(1)(i)(A), (c)(1)(i)(B), or (c)(1)(i)(C) of this section.

(A) U.S. Environmental Protection Agency. Emission Inventory Improvement Program, Volume II: Chapter 16, Methods for Estimating Air Emissions from Chemical Manufacturing Facilities, August 2007, Final (incorporated by reference, see §98.7).

(B) You may determine the fluorinated GHG emissions from any process vent within the process using the procedures specified in §63.1257(d)(2)(i) and (d)(3)(i)(B) of this chapter, except as specified in paragraphs (c)(1)(i)(B)(i) through (c)(1)(i)(B)(d) of this section. For the purposes of this subpart, use of the term “HAP” in §63.1257(d)(2)(i) and (d)(3)(i)(B) of this chapter means “fluorinated GHG”.

(1) To calculate emissions caused by the heating of a vessel without a process condenser to a temperature lower than the boiling point, you must use the procedures in §63.1257(d)(2)(i) of this chapter.

(2) To calculate emissions from depressurization of a vessel without a process condenser, you must use the procedures in §63.1257(d)(2)(i)(D)(10) of this chapter.

(3) To calculate emissions from vacuum systems, the terms used in Equation 33 to §63.1257(d)(2)(i)(C) of this chapter are defined as follows:

(i) \( P_{\text{system}} \) = Absolute pressure of the receiving vessel.

(ii) \( P_{T} \) = Partial pressure of the fluorinated GHG determined at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver.

(iii) \( P_{j} \) = Partial pressure of condensables (including fluorinated GHG) determined at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver.

(iv) \( \text{MW}_{\text{fluorinated GHG}} \) = Molecular weight of the fluorinated GHG determined at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver.

(4) To calculate emissions when a vessel is equipped with a process condenser or a control condenser, you must use the procedures in §63.1257(d)(3)(i)(B) of this chapter, except as follows:

(i) You must determine the flowrate of gas (or volume of gas), partial pressures of condensables, temperature (T), and fluorinated GHG molecular weight (\( \text{MW}_{\text{fluorinated GHG}} \)) at the exit temperature and exit pressure conditions of the condenser or at the conditions of the dedicated receiver.

(ii) You must assume that all of the components contained in the condenser exit vent stream are in equilibrium with the same components in the exit condensate stream (except for noncondensables).

(iii) You must perform a material balance for each component, if the condensate receiver composition is not known.

(iv) For the emissions from gas evolution, the term for time, \( t \), must be used in Equation 12 to §63.1257(d)(2)(i)(B) of this chapter.

(v) Emissions from empty vessel purging must be calculated using Equation 36 to §63.1257(d)(2)(i)(H) of this chapter.

(C) Commercial software products that follow chemical engineering principles (e.g., including the calculation methodologies in paragraphs (c)(1)(i)(A) and (c)(1)(i)(B) of this section).

(ii) Engineering assessments. For process vent emissions determinations, you may conduct an engineering assessment to calculate uncontrolled emissions. An engineering assessment includes, but is not limited to, the following:

(A) Previous test results, provided the tests are representative of current operating practices of the process.

(B) Bench-scale or pilot-scale test data representative of the process operating conditions.

(C) Maximum flow rate, fluorinated GHG emission rate, concentration, or other relevant parameters specified or implied within a permit limit applicable to the process vent.
(D) Design analysis based on chemical engineering principles, measurable process parameters, or physical or chemical laws or properties.

(iii) Impact of destruction for the preliminary estimate. If the process vent is vented to a destruction device, you may reflect the impact of the destruction device on emissions. In your emissions estimate, account for the following:

(A) The destruction efficiencies of the device that have been demonstrated for the fluorinated GHGs in the vent stream for periods when the process vent is vented to the destruction device.

(B) Any periods when the process vent is not vented to the destruction device.

(iv) Use of typical recent values. In the calculations in paragraphs (c)(1)(i), (c)(1)(ii), and (c)(1)(iii) of this section, the values used for the expected process activity and for the expected fraction of that activity whose emissions will be vented to the properly functioning destruction device must be based on either typical recent values for the process or values that would overestimate emissions from the process, unless there is a compelling reason to adopt a different value (e.g., installation of a destruction device for a previously uncontrolled process). If there is such a reason, it must be documented in the GHG Monitoring Plan.

(v) GWPs. To convert the fluorinated GHG emissions to CO\textsubscript{2}e, use Equation A–1 of §98.2. For fluorinated GHGs whose GWPs are not listed in Table A–1 to subpart A of this part, use a default GWP of 2,000 unless you submit a request to use other GWPs for those fluorinated GHGs in that process under paragraph (c)(1)(vi) of this section and we approve that request.

(vi) Request to use a GWP other than 2,000 for fluorinated GHGs whose GWPs are not listed in Table A–1 to subpart A of this part. If your process vent emits one or more fluorinated GHGs whose GWPs are not listed in Table A–1 to subpart A of this part, that are emitted in quantities that, with a default GWP of 2,000, result in total calculated annual emissions less than 10,000 metric tons CO\textsubscript{2}e for the vent, you may submit a request to use provisional GWPs for these fluorinated GHGs for purposes of the calculations in paragraph (c)(1) of this section. The request must be submitted by February 28, 2011 for a completeness determination and review by EPA.

(A) Contents of the request. You must include the following information in the request for each fluorinated GHG that does not have a GWP listed in Table A–1 to subpart A of this part and that constitutes more than one percent by mass of the stream emitted from the vent:

(1) The identity of the fluorinated GHG, including its chemical formula and, if available, CAS number.

(2) The estimated GWP of the fluorinated GHG.

(3) The data and analysis that supports your estimate of the GWP of the fluorinated GHG, including:

(i) Data and analysis related to the low-pressure gas phase infrared absorption spectrum of the fluorinated GHG.

(ii) Data and analysis related to the estimated atmospheric lifetime of the fluorinated GHG (reaction mechanisms and rates, including e.g., photolysis and reaction with atmospheric components such as OH, O\textsubscript{3}, CO, and water).

(iii) The radiative transfer analysis that integrates the lifetime and infrared absorption spectrum data to calculate the GWP.

(iv) Any published or unpublished studies of the GWP of the gas.

(4) The engineering calculations or assessments and underlying data that demonstrate that the process vent is calculated to emit less than 10,000 metric tons CO\textsubscript{2}e of this and other fluorinated GHGs only when the proposed provisional GWPs, not the default GWP of 2,000, are used for fluorinated GHGs whose GWPs are not listed in Table A–1 to subpart A of this part.

(B) Review and completeness determination by EPA. If EPA makes a preliminary determination that the request is complete, that it substantiates each of the provisional GWPs, and that it demonstrates that the process vent is calculated to emit less than 10,000 metric

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(1) You must conduct emission testing for process-vent-specific emission factor development before the destruction device unless the calculations you performed under paragraph (c)(1)(iii) of this section indicate that the uncontrolled fluorinated GHG emissions that occur during periods when the process vent is not vented to the properly functioning destruction device are less than 10,000 metric tons CO₂e per year. In this case, you may conduct emission testing after the destruction device to develop a process-vent-specific emission factor. If you do so, you must develop and apply an emission calculation factor under paragraph (c)(4) to estimate emissions during any periods when the process vent is not vented to the properly functioning destruction device.

(2) Method selection for continuous process vents.

(i) If the calculations under paragraph (c)(1) of this section, as well as any subsequent measurements and calculations under this subpart, indicate that the continuous process vent has fluorinated GHG emissions of less than 10,000 metric ton CO₂e per year, summed across all operating scenarios, then you may comply with either paragraph (c)(3) of this section (Emission Factor approach) or paragraph (c)(4) of this section (Emission Calculation Factor approach).

(ii) If the continuous process vent does not meet the criteria in paragraph (c)(2)(i) of this section, then you must comply with the emission factor method specified in paragraph (c)(3) (Emission Factor approach) of this section.

(A) You must conduct emission testing for process-vent-specific emission factor development before the destruction device unless the calculations you performed under paragraph (c)(1)(iii) of this section indicate that the uncontrolled fluorinated GHG emissions that occur during periods when the process vent is not vented to the properly functioning destruction device are less than 10,000 metric tons CO₂e per year. In this case, you may conduct emission testing after the destruction device to develop a process-vent-specific emission factor. If you do so, you must develop and apply an emission calculation factor under paragraph (c)(4) to estimate emissions during any periods when the process vent is not vented to the properly functioning destruction device.

(B) Regardless of the level of uncontrolled emissions, the emission testing for process-vent-specific emission factor development may be conducted on the outlet side of a wet scrubber in place for acid gas reduction, if one is in place, as long as there is no appreciable reduction in the fluorinated GHG.

(3) Process-vent-specific emission factor method. For each process vent, conduct an emission test and measure fluorinated GHG emissions from the process and measure the process activity, such as the feed rate, production rate, or other process activity rate, during the test as described in this paragraph (c)(3). Conduct the emission test according to the procedures in §98.124. All emissions test data and procedures used in developing emission factors must be documented according to §98.127. If more than one operating scenario applies to the process that contains the subject process vent, you must comply with either paragraph (3)(i) or paragraph (3)(ii) of this section.

(i) Conduct a separate emissions test for operation under each operating scenario.

(ii) Conduct an emissions test for the operating scenario that is expected to have the largest emissions in terms of CO₂e (considering both activity levels and emission calculation factors) on an annual basis. Also conduct an emissions test for each additional operating scenario that is estimated to emit 10,000 metric tons CO₂e or more annually from the vent and whose emission calculation factor differs by 15 percent or more from the emission calculation factor of the operating scenario that is expected to have the largest emissions (or of another operating scenario for which emission testing is performed), unless the difference between the operating scenarios is solely due to the application of a destruction device to emissions under one of the operating scenarios. For any other operating scenarios, adjust the process-vent specific emission factor developed for the operating scenario that is expected to have the largest emissions (or for another operating scenario for which emission
testing is performed) using the approach in paragraph (c)(3)(viii) of this section.

(iii) You must measure the process activity, such as the process feed rate, process production rate, or other process activity rate, as applicable, during the emission test and calculate the rate for the test period, in kg (or another appropriate metric) per hour.

(iv) For continuous processes, you must calculate the hourly emission rate of each fluorinated GHG using Equation L-19 of this section and determine the hourly emission rate of each fluorinated GHG per process vent (and per operating scenario, as applicable) for the test run.

\[ E_{\text{ContPV}} = \frac{C_{\text{PV}} \cdot MW \cdot Q_{\text{PV}}}{10^6} \cdot \frac{1}{SV} \cdot \frac{60}{10^3} \cdot \frac{1}{1} \quad \text{(Eq. L-19)} \]

Where:

- \( E_{\text{ContPV}} \) = Mass of fluorinated GHG \( f \) emitted from process vent \( v \) from process \( i \), operating scenario \( j \), during the emission test during test run \( r \) (kg/hr).
- \( C_{\text{PV}} \) = Concentration of fluorinated GHG \( f \) during test run \( r \) of the emission test (ppmv).
- \( MW \) = Molecular weight of fluorinated GHG \( f \) (g/mol).
- \( Q_{\text{PV}} \) = Flow rate of the process vent stream during test run \( r \) of the emission test (m\(^3\)/min).
- \( SV \) = Standard molar volume of gas (0.0240 m\(^3\)/g-mole at 68 \( ^\circ \)F and 1 atm).

\[ 1/10^3 = \text{Conversion factor (1 kilogram/1,000 grams).} \]

\[ 60/1 = \text{Conversion factor (60 minutes/1 hour).} \]

(v) You must calculate a site-specific, process-vent-specific emission factor for each fluorinated GHG for each process vent and each operating scenario, in kg of fluorinated GHG per process activity rate (e.g., kg of feed or production), as applicable, using Equation L-20 of this section. For continuous processes, divide the hourly fluorinated GHG emission rate during the test by the hourly process activity rate during the test runs.

\[ EF_{\text{PV}} = \frac{E_{\text{PV}}}{\text{Activity}_{\text{EmissionTest}}} \quad \text{(Eq. L-20)} \]

Where:

- \( EF_{\text{PV}} \) = Emission factor for fluorinated GHG \( f \) emitted from process vent \( v \) during process \( i \), operating scenario \( j \) (e.g., kg emitted/kg activity).
- \( E_{\text{PV}} \) = Mass of fluorinated GHG \( f \) emitted from process vent \( v \) from process \( i \), operating scenario \( j \), during the emission test during test run \( r \), for either continuous or batch (kg emitted/hr for continuous, kg emitted/batch for batch).
- \( \text{Activity}_{\text{EmissionTest}} \) = Process feed, process production, or other process activity rate for process \( i \), operating scenario \( j \), during the emission test during test run \( r \) (e.g., kg product/hr).

\[ r = \text{Number of test runs performed during the emission test.} \]

(vi) If you conducted emissions testing after the destruction device, you must calculate the emissions of each fluorinated GHG for the process vent (and operating scenario, as applicable) using Equation L-21 of this section. You must also develop a process-vent-specific emission calculation factor based on paragraph (c)(4) of this section for the periods when the process vent is not venting to the destruction device.
\[ E_{PV} = EF_{PV-C} \cdot Activity_C + ECF_{PV-U} \cdot Activity_U \]  \hspace{1cm} (Eq. L-21)

Where:
- \( E_{PV} \) = Mass of fluorinated GHG \( f \) emitted from process vent \( v \) from process \( i \), operating scenario \( j \), for the year (kg).
- \( EF_{PV-C} \) = Emission factor for fluorinated GHG \( f \) emitted from process vent \( v \) during process \( i \), operating scenario \( j \), based on testing after the destruction device (kg emitted/activity) (e.g., kg emitted/kg product).
- \( Activity_C \) = Total process feed, process production, or other process activity for process \( i \), operating scenario \( j \), during the year for which emissions are vented to the properly functioning destruction device (i.e., controlled).
- \( ECF_{PV-U} \) = Emission calculation factor for fluorinated GHG \( f \) emitted from process vent \( v \) during process \( i \), operating scenario \( j \) during periods when the process vent is not vented to the properly functioning destruction device (kg emitted/activity) (e.g., kg emitted/kg product).
- \( Activity_U \) = Total process feed, process production, or other process activity during the year for which the process vent is not vented to the properly functioning destruction device (e.g., kg product).
- \( Activity_U \) = Total process feed, process production, or other process activity during the year for which the process vent is not vented to the properly functioning destruction device (e.g., kg product).

\[ E_{PV} = EF_{PV-U} \cdot (Activity_U + Activity_C \cdot (1 - DE)) \]  \hspace{1cm} (Eq. L-22)

Where:
- \( E_{PV} \) = Mass of fluorinated GHG \( f \) emitted from process vent \( v \) from process \( i \), operating scenario \( j \), for the year, considering destruction efficiency (kg).
- \( EF_{PV-U} \) = Emission factor (uncontrolled) for fluorinated GHG \( f \) emitted from process vent \( v \) during process \( i \), operating scenario \( j \) (kg emitted/kg product).
- \( Activity_U \) = Total process feed, process production, or other process activity for process \( i \), operating scenario \( j \), during the year for which the process vent is not vented to the properly functioning destruction device (e.g., kg product).
- \( Activity_C \) = Total process feed, process production, or other process activity for process \( i \), operating scenario \( j \), during the year for which the process vent is vented to the properly functioning destruction device (e.g., kg product).
- \( DE \) = Demonstrated destruction efficiency of the destruction device (weight fraction).

(vii) If you conducted emissions testing before the destruction device, apply the destruction efficiencies of the device that have been demonstrated for the fluorinated GHGs in the vent stream to the fluorinated GHG emissions for the process vent (and operating scenario, as applicable), using Equation L-22 of this section. You may apply the destruction efficiency only to the portion of the process activity during which emissions are vented to the properly functioning destruction device (i.e., controlled).

(viii) Adjusted process-vent-specific emission factors for other operating scenarios. For process vents from processes with multiple operating scenarios, use Equation L-23 of this section to develop an adjusted process-vent-specific emission factor for each operating scenario from which the vent is estimated to emit less than 10,000 metric tons CO\(_2\)e annually or whose emission calculation factor differs by less than 15 percent from the emission calculation factor of the operating scenario that is expected to have the largest emissions (or of another operating scenario for which emission testing is performed).

\[ EF_{PV,adj} = \frac{ECF_{UT}}{ECF_r} \cdot EF_{PV} \]  \hspace{1cm} (Eq. L-23)
Where:

- \( EF_{PV} \) = Adjusted process-vent-specific emission factor for an untested operating scenario.
- \( ECF_{PV} \) = Emission calculation factor for the untested operating scenario developed under paragraph (c)(4) of this section.
- \( ECF_T \) = Emission calculation for the tested operating scenario developed under paragraph (c)(4) of this section.

\( EF_{PV} = \) Process vent specific emission factor for the tested operating scenario.

(ix) Sum the emissions of each fluorinated GHG from all process vents in each operating scenario and all operating scenarios in the process for the year to estimate the total process vent emissions of each fluorinated GHG from the process, using Equation L–24 of this section.

\[
E_{Pfi} = \sum_{i}^{o} \sum_{v}^{v} E_{PV} \tag{Eq. L-24}
\]

Where:

- \( E_{Pfi} \) = Mass of fluorinated GHG \( f \) emitted from process vents for process \( i \) for the year (kg).
- \( E_{PV} \) = Mass of fluorinated GHG \( f \) emitted from process vent \( v \) from process \( i \), operating scenario \( j \), for the year, considering destruction efficiency (kg).
- \( v \) = Number of process vents in process \( i \), operating scenario \( j \).
- \( o \) = Number of operating scenarios for process \( i \).

(4) Process-vent-specific emission calculation factor method. For each process vent within an operating scenario, determine fluorinated GHG emissions by calculations and determine the process activity rate, such as the feed rate, production rate, or other process activity rate, associated with the emission rate.

(i) You must calculate uncontrolled emissions of fluorinated GHG by individual process vent, \( E_{PV} \), by using measurements, by using calculations based on chemical engineering principles and chemical property data, or by conducting an engineering assessment. Use the procedures in paragraphs (c)(1)(i) or (ii) of this section, except paragraph (c)(1)(i)(C) of this section. The procedures in paragraphs (c)(1)(i) and (ii) of this section may be applied either to batch process vents or to continuous process vents. The uncontrolled emissions must be based on a typical batch or production rate under a defined operating scenario. The process activity rate associated with the uncontrolled emissions must be determined. The methods, data, and assumptions used to estimate emissions for each operating scenario must be selected to yield a best estimate (expected value) of emissions rather than an over- or underestimate of emissions for that operating scenario. All data, assumptions, and procedures used in the calculations or engineering assessment must be documented according to §98.127.

(ii) You must calculate a site-specific, process-vent-specific emission calculation factor for each process vent, each operating scenario, and each fluorinated GHG, in kg of fluorinated GHG per activity rate (e.g., kg of feed or production) as applicable, using Equation L–25 of this section.

\[
ECF_{PV} = \frac{E_{PV}}{Activity_{representative}} \tag{Eq. L-25}
\]

Where:

- \( ECF_{PV} \) = Emission calculation factor for fluorinated GHG \( f \) emitted from process vent \( v \) during process \( i \), operating scenario \( j \) (e.g., kg emitted/kg product).
- \( E_{PV} \) = Average mass of fluorinated GHG \( f \) emitted, based on calculations, from
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process vent v from process i, operating scenario j, during the period or batch for which emissions were calculated, for either continuous or batch (kg emitted/hr for continuous, kg emitted/batch for batch).

Activity_{representative} = Process feed, process production, or other process activity rate corresponding to average mass of emissions based on calculations (e.g., kg product).

(iii) You must calculate emissions of each fluorinated GHG for the process vent (and operating scenario, as applicable) for the year by multiplying the process-vent-specific emission calculation factor by the total process activity, as applicable, for the year, using Equation L–26 of this section.

\[ E_{PV} = ECF_{PV} \times Activity \quad \text{(Eq. L–26)} \]

Where:
\( E_{PV} \) = Mass of fluorinated GHG \( f \) emitted from process vent v from process i, operating scenario j, for the year (kg).
\( ECF_{PV} \) = Emission calculation factor for fluorinated GHG \( f \) emitted from process vent v during process i, operating scenario j, (kg emitted/activity) (e.g., kg emitted/kg product).
Activity = Process feed, process production, or other process activity for process i, operating scenario j, during the year.

(iv) If the process vent is vented to a destruction device, apply the demonstrated destruction efficiency of the device to the fluorinated GHG emissions for the process vent (and operating scenario, as applicable), using Equation L–27 of this section. Apply the destruction efficiency only to the portion of the process activity that is vented to the properly functioning destruction device (i.e., controlled).

\[ E_{PV} = ECF_{PV} \times (Activity_U + Activity_C \times (1 - DE)) \quad \text{(Eq. L–27)} \]

Where:
\( E_{PV} \) = Mass of fluorinated GHG \( f \) emitted from process vent v from process i, operating scenario j, for the year considering destruction efficiency (kg).
\( ECF_{PV} \) = Emission calculation factor for fluorinated GHG \( f \) emitted from process vent v during process i, operating scenario j, (e.g., kg emitted/kg product).
Activity\_U = Total process feed, process production, or other process activity for process i, operating scenario j, during the year.
Activity\_C = Total process feed, process production, or other process activity for process i, operating scenario j, during the year for which the process vent is not vented to the properly functioning destruction device (e.g., kg product).
DE = Demonstrated destruction efficiency of the destruction device (weight fraction).

(v) Sum the emissions of each fluorinated GHG from all process vents in each operating scenario and all operating scenarios in the process for the year to estimate the total process vent emissions of each fluorinated GHG from the process, using Equation L–28 of this section.

\[ E_{Pfi} = \sum_{i=1}^{g} \sum_{j=1}^{v} E_{PV} \quad \text{(Eq. L–28)} \]

Where:
\( E_{Pfi} \) = Mass of fluorinated GHG \( f \) emitted from process vents for process i for the year (kg).
(d) Calculate fluorinated GHG emissions for equipment leaks (EL). If you comply with paragraph (c) of this section, you must calculate the fluorinated GHG emissions from pieces of equipment associated with processes covered under this subpart and in fluorinated GHG service. If you conduct monitoring of equipment in fluorinated GHG service, monitoring must be conducted for those in light liquid and in gas and vapor service. If you conduct monitoring of equipment in fluorinated GHG service, you may exclude from monitoring each piece of equipment that is difficult-to-monitor, that is unsafe-to-monitor, that is insulated, or that is in heavy liquid service; you may exclude from monitoring each pump with dual mechanical seals, agitator with dual mechanical seals, pump with no external shaft, agitator with no external shaft; you may exclude from monitoring each pressure relief device in gas and vapor service with upstream rupture disk, each sampling connection system with closed-loop or closed-purge systems, and any pieces of equipment where leaks are routed through a closed vent system to a destruction device. You must estimate emissions using another approach for those pieces of equipment excluded from monitoring. Equipment that is in fluorinated GHG service for less than 300 hr/yr; equipment that is in vacuum service; pressure relief devices that are in light liquid service; and instrumentation systems are exempted from these requirements.

(1) The emissions from equipment leaks must be calculated using any of the procedures in paragraphs (d)(1)(i), (d)(1)(ii), (d)(1)(iii), or (d)(1)(iv) of this section.

(ii) Use of Other Approaches in EPA Protocol for Equipment Leak Emission Estimates in conjunction with site-specific leak monitoring methods. The emissions from equipment leaks may be calculated using one of the following methods in EPA–453/R–95–017 (incorporated by reference, see §98.7): The Screening Ranges Approach; the EPA Correlation Approach; or the Unit-Specific Correlation Approach. You may develop a site-specific leak monitoring method appropriate for monitoring fluorinated GHGs or surrogates to use along with these three approaches. The site-specific leak monitoring method must meet the requirements in §98.124(f)(1).

(iv) Use of site-specific leak monitoring methods. The emissions from equipment leaks may be calculated using a site-specific leak monitoring method. The site-specific leak monitoring method must meet the requirements in §98.124(f)(1).

(2) You must collect information on the number of each type of equipment;
the service of each piece of equipment (gas, light liquid, heavy liquid); the concentration of each fluorinated GHG in the stream; and the time period each piece of equipment was in service. Depending on which approach you follow, you may be required to collect information for equipment on the associated screening data concentrations for greater than or equal to 10,000 ppmv and associated screening data concentrations for less than 10,000 ppmv; associated actual screening data concentrations; or associated screening data and leak rate data (i.e., bagging) used to develop a unit-specific correlation.

(3) Calculate and sum the emissions of each fluorinated GHG in metric tons per year for equipment pieces for each process, $E_{\text{ELf}}$, annually. You must include and estimate emissions for types of equipment that are excluded from monitoring, including difficult-to-monitor, unsafe-to-monitor and insulated pieces of equipment, pieces of equipment in heavy liquid service, pumps with dual mechanical seals, agitators with dual mechanical seals, pumps with no external shaft, agitators with no external shaft, pressure relief devices in gas and vapor service with up-stream rupture disk, sampling connection systems with closed-loop or closed purge systems, and pieces of equipment where leaks are routed through a closed vent system to a destruction device.

(e) Calculate total fluorinated GHG emissions for each process and for production or transformation processes at the facility.

(i) Estimate annually the total mass of each fluorinated GHG emitted from each process, including emissions from process vents in paragraphs (c)(3) and (c)(4) of this section, as appropriate, and from equipment leaks in paragraph (d), using Equation L-29 of this section.

\[ E_i = E_{\text{PFf}} + E_{\text{ELf}} \]  
(Eq. L-29)

Where:
- $E_i$ = Total mass of each fluorinated GHG $f$ emitted from process $i$, annual basis (kg/year).
- $E_{\text{PFf}}$ = Mass of fluorinated GHG $f$ emitted from all process vents and all operating scenarios in process $i$, annually (kg/year, calculated in Equation L-24 or L-28 of this section, as appropriate).
- $E_{\text{ELf}}$ = Mass of fluorinated GHG $f$ emitted from equipment leaks for pieces of equipment for process $i$, annually (kg/year, calculated in paragraph (d)(3) of this section).

(ii) Estimate annually the total mass of each fluorinated GHG emitted from each type of production or transformation process at the facility using Equation L-30 of this section. Develop separate totals for fluorinated gas production processes, transformation processes that transform fluorinated gases produced at the facility, and transformation processes that transform fluorinated gases produced at another facility.

\[ E = \sum_{i=1}^{n} E_i \times 0.001 \]  
(Eq. L-30)

Where:
- $E$ = Total mass of each fluorinated GHG $f$ emitted from all fluorinated gas production processes, all transformation processes that transform fluorinated gases produced at the facility, or all transformation processes that transform fluorinated gases produced at another facility, as appropriate (metric tons).
- $E_i$ = Total mass of each fluorinated GHG $f$ emitted from each production or transformation process, annual basis (kg/year, calculated in Equation L-29 of this section).
- 0.001 = Conversion factor from kg to metric tons.
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z = Total number of fluorinated gas production processes, fluorinated gas transformation processes that transform fluorinated gases produced at the facility, or transformation processes that transform fluorinated gases produced at another facility, as appropriate.

(f) Calculate fluorinated GHG emissions from destruction of fluorinated GHGs that were previously “produced”. Estimate annually the total mass of fluorinated GHGs emitted from destruction of fluorinated GHGs that were previously “produced” as defined at §98.410(b) using Equation L–31 of this section:

\[ E_D = R_E D \times (1 - DE) \]  
(Eq. L–31)

Where:
- \( E_D \) = The mass of fluorinated GHGs emitted annually from destruction of fluorinated GHGs that were previously “produced” as defined at §98.410(b) (metric tons).
- \( R_E \) = The mass of fluorinated GHGs that were previously “produced” as defined at §98.410(b) and that are fed annually into the destruction device (metric tons).
- \( DE \) = Destruction efficiency of the destruction device (fraction).

(g) Emissions from venting of residual fluorinated GHGs in containers. If you vent residual fluorinated GHGs from containers, you must either measure the residual fluorinated GHGs vented from each container or develop a heel factor for each combination of fluorinated GHG, container size, and container type that you vent. You do not need to estimate de minimis emissions associated with good-faith attempts to recycle or recover residual fluorinated GHGs in or from containers.

(1) Measuring contents of each container. If you weigh or otherwise measure the contents of each container before venting the residual fluorinated GHGs, use Equation L–32 of this section to calculate annual emissions of each fluorinated GHG from venting of residual fluorinated GHG from containers. Convert pressures to masses as directed in paragraph (g)(2)(ii) of this section.

\[ E_{cf} = \sum_{i=1}^{n} H_{bfj} - \sum_{i=1}^{n} H_{efj} \]  
(Eq. L–32)

Where:
- \( E_{cf} \) = Total mass of each fluorinated GHG \( f \) emitted from the facility through venting of residual fluorinated GHG from containers, annual basis (kg/year).
- \( H_{bfj} \) = Mass of residual fluorinated GHG \( f \) in container \( j \) when received by facility.
- \( H_{efj} \) = Mass of residual fluorinated GHG \( f \) in container \( j \) after evacuation by facility. (Facility may equate to zero.)
- \( n \) = Number of vented containers for each fluorinated GHG \( f \).

(2) Developing and applying heel factors. If you use heel factors to estimate emissions of residual fluorinated GHGs vented from containers, you must annually develop these factors based on representative samples of the containers received by your facility from fluorinated GHG users.

(i) Sample size. For each combination of fluorinated GHG, container size, and container type that you vent, select a representative sample of containers that reflects the full range of quantities of residual gas returned in that container size and type. This sample must reflect the full range of the industries and a broad range of the customers that use and return the fluorinated GHG, container size, and container type. The minimum sample size for each combination of fluorinated GHG, container size, and container type must be 30, unless this
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is greater than the number of containers returned within that combination annually, in which case the contents of every container returned must be measured.

(ii) Measurement of residual gas. The residual weight or pressure you use for paragraph (g)(1) of this section must be determined by monitoring the mass or the pressure of your cylinders/containers according to §98.124(k). If you monitor the pressure, convert the pressure to mass using the ideal gas law, as displayed in Equation L–33 of this section, with an appropriately selected Z value.

\[ pV = ZnRT \quad (Eq. \ L–33) \]

Where:
\( p \) = Absolute pressure of the gas (Pa)
\( V \) = Volume of the gas (m³)
\( Z \) = Compressibility factor
\( n \) = Amount of substance of the gas (mole)
\( R \) = Gas constant (8.314 Joule/Kelvin mole)
\( T \) = Absolute temperature (K)

(iii) Heel factor calculation. To determine the heel factor \( h_f \) for each combination of fluorinated GHG, container size, and container type, use paragraph (g)(1) of this section to calculate the total heel emissions for each sample selected under paragraph (g)(2)(i) of this section. Divide this total by the number of containers in the sample. Divide the result by the full capacity (the mass of the contents of a full container) of that combination of fluorinated GHG, container size, and container type. The heel factor is expressed as a fraction of the full capacity.

(iv) Calculate annual emissions of each fluorinated GHG from venting of residual fluorinated GHG from containers using Equation L–34 of this section.

\[ E_{Cf} = \sum_{j=1}^{n} h_{fj} \times N_{fj} \times F_{fj} \quad (Eq. \ L–34) \]

Where:
\( E_{Cf} \) = Total mass of each fluorinated GHG \( f \) emitted from the facility through venting of residual fluorinated GHG from containers, annual basis (kg/year).
\( h_{fj} \) = Facility-wide gas-specific heel factor for fluorinated GHG \( f \) (fraction) and container size and type \( j \), as determined in paragraph (g)(2)(iii) of this section.
\( N_{fj} \) = Number of containers of size and type \( j \) returned to the fluorinated gas production facility.
\( F_{fj} \) = Full capacity of containers of size and type \( j \) containing fluorinated GHG \( f \) (kg).
\( n \) = Number of combinations of container sizes and types for fluorinated GHG \( f \).

§ 98.124 Monitoring and QA/QC requirements.

(a) Initial scoping speciation to identify fluorinated GHGs. You must conduct an initial scoping speciation to identify all fluorinated GHGs that may be generated from processes that are subject to this subpart and that have at least one process vent with uncontrolled emissions of 1.0 metric ton or more of fluorinated GHGs per year based on the preliminary estimate of emissions in §98.123(c)(1). You are not required to quantify emissions under this initial scoping speciation. Only fluorinated GHG products and by-products that occur in greater than trace concentrations in at least one stream must be identified under this paragraph.

(1) Procedure. To conduct the scoping speciation, select the stream(s) (including process streams or destroyed streams) or process vent(s) that would be expected to individually or collectively contain all of the fluorinated GHG by-products of the process at their maximum concentrations and sample and analyze the contents of these selected streams or process vents. For example, if fluorinated GHG by-products are separated into one low-
boiling-point and one high-boiling-point stream, sample and analyze both of these streams. Alternatively, you may sample and analyze streams where fluorinated GHG by-products occur at less than their maximum concentrations, but you must ensure that the sensitivity of the analysis is sufficient to compensate for the expected difference in concentration. For example, if you sample and analyze streams where fluorinated GHG by-products are expected to occur at one half their maximum concentrations elsewhere in the process, you must ensure that the sensitivity of the analysis is sufficient to detect fluorinated GHG by-products that occur at concentrations of 0.05 percent or higher. You do not have to sample and analyze every stream or process vent, i.e., you do not have to sample and analyze a stream or process vent that contains only fluorinated GHGs that are contained in other streams or process vents that are being sampled and analyzed. Sampling and analysis must be conducted according to the procedures in paragraph (e) of this section.

(2) Previous measurements. If you have conducted testing of streams (including process streams or destroyed streams) or process vents less than 10 years before December 31, 2010, and the testing meets the requirements in paragraph (a)(1) of this section, you may use the previous testing to satisfy this requirement.

(b) Mass balance monitoring. If you determine fluorinated GHG emissions from any process using the mass balance method under §98.123(b), you must estimate the total mass of each fluorinated GHG emitted from that process at least monthly. Only streams that contain greater than trace concentrations of fluorine-containing reactants, products, or by-products must be monitored under this paragraph. If you use an element other than fluorine in the mass-balance equation pursuant to §98.123(b)(3), substitute that element for fluorine in the monitoring requirements of this paragraph.

(1) Mass measurements. Measure the following masses on a monthly or more frequent basis using flowmeters, weigh scales, or a combination of volumetric and density measurements with accuracies and precisions that allow the facility to meet the error criteria in §98.123(b)(1):

(i) Total mass of each fluorine-containing product produced. Account for any used fluorine-containing product added into the production process upstream of the output measurement as directed at §98.413(b) and §98.414(b). For each product, the mass produced used for the mass-balance calculation must be the same as the mass produced that is reported under subpart OO of this part, where applicable.

(ii) Total mass of each fluorine-containing reactant fed into the process.

(iii) The mass removed from the process in each stream fed into the destruction device.

(iv) The mass removed from the process in each recaptured stream.

(2) Concentration measurements for use with §98.123(b)(4). If you use §98.123(b)(4) to estimate the mass of fluorine in destroyed or recaptured streams, measure the following concentrations at least once each calendar month during which the process is operating, on a schedule to ensure that the measurements are representative of the full range of process conditions (e.g., catalyst age). Measure more frequently if this is necessary to meet the error criteria in §98.123(b)(1). Use equipment and methods (e.g., gas chromatography) that comply with paragraph (e) of this section and that have an accuracy and precision that allow the facility to meet the error criteria in §98.123(b)(1). Only fluorine-containing reactants, products, and by-products that occur in a stream in greater than trace concentrations must be monitored under this paragraph.

(i) The concentration (mass fraction) of the fluorine-containing product in each stream that is fed into the destruction device.

(ii) The concentration (mass fraction) of each fluorine-containing by-product in each stream that is fed into the destruction device.

(iii) The concentration (mass fraction) of each fluorine-containing reactant in each stream that is fed into the destruction device.

(iv) The concentration (mass fraction) of each fluorine-containing by-
product in each stream that is recaptured (c_Bkl).

(3) Concentration measurements for use with § 98.123(b)(15). If you use § 98.123(b)(15) to estimate the mass of fluorine in destroyed or recaptured streams, measure the concentrations listed in paragraphs (3)(i) and (ii) of this section at least once each calendar month during which the process is operating, on a schedule to ensure that the measurements are representative of the full range of process conditions (e.g., catalyst age). Measure more frequently if this is necessary to meet the error criteria in § 98.123(b)(1). Use equipment and methods (e.g., gas chromatography) that comply with paragraph (e) of this section and that have an accuracy and precision that allow the facility to meet the error criteria in § 98.123(b)(1). Only fluorine-containing reactants, products, and byproducts that occur in a stream in greater than trace concentrations must be monitored under this paragraph.

(i) The concentration (mass fraction) of total fluorine in each stream that is fed into the destruction device.

(ii) The concentration (mass fraction) of total fluorine in each stream that is recaptured.

(4) Emissions characterization: process vents emitting 25,000 metric tons CO\textsubscript{2}e or more. To characterize emissions from any process vent emitting 25,000 metric tons CO\textsubscript{2}e or more, comply with paragraphs (b)(4)(i) through (b)(4)(v) of this section, as appropriate. Only fluorine-containing reactants, products, and byproducts that occur in a stream in greater than trace concentrations must be monitored under this paragraph.

(i) Uncontrolled emissions. If emissions from the process vent are not routed through a destruction device, sample and analyze emissions at the process vent or stack or sample and analyze emitted streams before the process vent. If the process has more than one operating scenario, you must either perform the emission characterization for each operating scenario or perform the emission characterization for the operating scenario that is expected to have the largest emissions and adjust the emission characterization for other scenarios using engineering calculations and assessments as specified in § 98.123(c)(4). To perform the characterization, take three samples under conditions that are representative for the operating scenario. Measure the concentration of each fluorine-containing compound in each sample. Use equipment and methods that comply with paragraph (e) of this section. Calculate the average concentration of each fluorine-containing compound across all three samples.

(ii) Controlled emissions using § 98.123(b)(15). If you use § 98.123(b)(15) to estimate the total mass of fluorine in destroyed or recaptured streams, and if the emissions from the process vent are routed through a destruction device, characterize emissions as specified in paragraph (b)(4)(i) of this section before the destruction device. Apply the destruction efficiency demonstrated for each fluorinated GHG in the destroyed stream to that fluorinated GHG. Exclude from the characterization fluorine-containing compounds that are not fluorinated GHGs.

(iii) Controlled emissions using § 98.123(b)(4). If you use § 98.123(b)(4) to estimate the mass of fluorine in destroyed or recaptured streams, and if the emissions from the process vent are routed through a destruction device, characterize the process vent’s emissions monthly (or more frequently) using the monthly (or more frequent) measurements under paragraphs (b)(1)(iii) and (b)(2)(i) through (b)(2)(iii) of this section. Apply the destruction efficiency demonstrated for each fluorinated GHG in the destroyed stream to that fluorinated GHG. Exclude from the characterization fluorine-containing compounds that are not fluorinated GHGs.

(iv) Emissions characterization frequency. You must repeat emission characterizations performed under paragraph (b)(4)(i) and (b)(4)(ii) of this section under paragraph (b)(4)(v)(A) or (b)(4)(v)(B) of this section, whichever occurs first:

(A) 10-year revision. Repeat the emission characterization every 10 years. In the calculations under § 98.123, apply the revised emission characterization to the process activity that occurs after the revision.

(B) Operating scenario change that affects the emission characterization. For
planned operating scenario changes, you must estimate and compare the emission calculation factors for the changed operating scenario and for the original operating scenario whose process vent specific emission factor was measured. Use the engineering calculations and assessments specified in §98.123(c)(4). If the share of total fluorine-containing compound emissions represented by any fluorinated GHG changes under the changed operating scenario by 15 percent or more of the total, relative to the previous operating scenario (this includes the cumulative change in the emission calculation factor since the last emissions test), you must repeat the emission characterization. Perform the emission characterization before February 28 of the year that immediately follows the change. In the calculations under §98.123, apply the revised emission characterization to the process activity that occurs after the operating scenario change.

(v) Subsequent measurements. If a process vent with fluorinated GHG emissions less than 25,000 metric tons CO₂e, per §98.123(c)(2), is later found to have fluorinated GHG emissions of 25,000 metric tons CO₂e or greater, you must perform an emission characterization under this paragraph during the following year.

(5) Emissions characterization: process vents emitting less than 25,000 metric tons CO₂e. To characterize emissions from any process vent emitting less than 25,000 metric tons CO₂e, comply with paragraphs (b)(5)(i) through (b)(5)(iii) of this section, as appropriate. Only fluorine-containing reactants, products, and by-products that occur in a stream in greater than trace concentrations must be monitored under this paragraph.

(i) Uncontrolled emissions. If emissions from the process vent are not routed through a destruction device, emission measurements must consist of sampling and analysis of emissions at the process vent or stack, sampling and analysis of emitted streams before the process vent, previous test results, provided the tests are representative of current operating conditions of the process, or bench-scale or pilot-scale test data representative of the process operating conditions.

(ii) Controlled emissions using §98.123(b)(15). If you use §98.123(b)(15) to estimate the total mass of fluorine in destroyed or recaptured streams, and if the emissions from the process vent are routed through a destruction device, characterize emissions as specified in paragraph (b)(5)(i) of this section before the destruction device. Apply the destruction efficiency demonstrated for each fluorinated GHG in the destroyed stream to that fluorinated GHG. Exclude from the characterization fluorine-containing compounds that are not fluorinated GHGs.

(iii) Controlled emissions using §98.123(b)(4). If you use §98.123(b)(4) to estimate the mass of fluorine in destroyed or recaptured streams, and if the emissions from the process vent are routed through a destruction device, characterize the process vent’s emissions monthly (or more frequently) using the monthly (or more frequent) measurements under paragraphs (b)(1)(iii) and (b)(2)(1) through (b)(2)(3) of this section. Apply the destruction efficiency demonstrated for each fluorinated GHG in the destroyed stream to that fluorinated GHG. Exclude from the characterization fluorine-containing compounds that are not fluorinated GHGs.

(6) Emissions characterization: emissions not accounted for by process vent estimates. Calculate the weighted average emission characterization across the process vents before any destruction devices. Apply the weighted average emission characterization for all the process vents to any fluorine emissions that are not accounted for by process vent estimates.

(7) Impurities in reactants. If any fluorine-containing impurity is fed into a process along with a reactant (or other input) in greater than trace concentrations, this impurity shall be monitored under this section and included in the calculations under §98.123 in the same manner as reactants fed into the process, fed into the destruction device, recaptured, or emitted, except the concentration of the impurity in the mass fed into the process shall be measured, and the mass of the impurity fed into the process shall be calculated as the
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product of the concentration of the impurity and the mass fed into the process. The mass of the reactant fed into the process may be reduced to account for the mass of the impurity.

(8) Alternative to error calculation. As an alternative to calculating the relative and absolute errors associated with the estimate of emissions under §98.123(b), you may comply with the precision, accuracy, measurement and calculation frequency, and fluorinated GHG throughput requirements of paragraph (b)(8)(i) through (b)(8)(iv) of this section.

(i) Mass measurements. Measure the masses specified in paragraph (b)(1) of this section using flowmeters, weigh scales, or a combination of volumetric and density measurements with accuracies and precisions of ±0.2 percent of full scale or better.

(ii) Concentration measurements. Measure the concentrations specified in paragraph (b)(2) or paragraph (b)(3) of this section, as applicable, using analytical methods with accuracies and precisions of ±10 percent or better.

(iii) Measurement and calculation frequency. Perform the mass measurements specified in paragraph (b)(1) of this section and the concentration measurements specified in paragraph (b)(2) or paragraph (b)(3) of this section, as applicable, at least weekly, and calculate emissions at least weekly.

(iv) Fluorinated-GHG throughput limit. You may use the alternative to the error calculation specified in paragraph (b)(8) of this section only if the total annual CO₂-equivalent fluorinated GHG throughput of the process is 500,000 m₄CO₂e or less. The total throughput is the sum of the masses of the fluorinated GHG reactants, products, and by-products fed into and generated by the process. To convert these masses to CO₂e, use Equation A–1 of §98.2. For fluorinated GHGs whose GWPs are not listed in Table A–1 to subpart A of this part, use a default GWP of 2,000.

(c) Emission factor testing. Conduct an emissions test that is based on representative performance of the process or operating scenario(s) of the process, as applicable. Include in the emission test any fluorinated greenhouse gas that occurs in more than trace concentrations in the vent stream or, where a destruction device is used, in the inlet to the destruction device. You may include startup and shutdown events if the testing is sufficiently long or comprehensive to ensure that such events are not overrepresented in the emission factor. Malfunction events must not be included in the testing. If you conduct your emission testing after a destruction device, and if the outlet concentration of a fluorinated GHG that is fed into the device is below the detection limit of the method, you may use a concentration of one-half the detection limit to estimate the emission factor.

(1) Process vent testing. Conduct an emissions test that is based on representative performance of the process or operating scenario(s) of the process, as applicable. Include in the emission test any fluorinated greenhouse gas that occurs in more than trace concentrations in the vent stream or, where a destruction device is used, in the inlet to the destruction device. You may include startup and shutdown events if the testing is sufficiently long or comprehensive to ensure that such events are not overrepresented in the emission factor. Malfunction events must not be included in the testing. If you conduct your emission testing after a destruction device, and if the outlet concentration of a fluorinated GHG that is fed into the device is below the detection limit of the method, you may use a concentration of one-half the detection limit to estimate the emission factor.

(2) Number of runs. For continuous processes, sample the process vent for a minimum of 3 runs of 1 hour each. If the RSD of the emission factor calculated based on the first 3 runs is greater than or equal to 0.15 for the emission factor, continue to sample the process vent for an additional 3 runs of 1 hour each. If more than one fluorinated GHG is measured, the RSD must be expressed in terms of total CO₂ equivalents. For fluorinated GHGs whose GWPs are not listed in Table A–1 to subpart A of this part, use a default GWP of 2,000 in the RSD calculation.

(3) Process activity measurements. Determine the mass rate of process feed, process production, or other process activity as applicable during the test using flow meters, weigh scales, or other measurement devices or instruments with an accuracy and precision of ±1 percent of full scale or better. These devices may be the same plant instruments or procedures that are used for accounting purposes (such as weigh hoppers, belt weigh feeders, combination of volume measurements and bulk density, etc.) if these devices or procedures meet the requirement. For monitoring ongoing process activity, use flow meters, weigh scales, or other measurement devices or instruments
with an accuracy and precision of ±1 percent of full scale or better.

(4) **Sample each process.** If process vents from separate processes are manifolded together to a common vent or to a common destruction device, you must follow paragraph (c)(4)(i), (c)(4)(ii), or (c)(4)(iii) of this section.

   (i) You may sample emissions from each process in the ducts before the emissions are combined.

   (ii) You may sample in the common duct or at the outlet of the destruction device when only one process is operating.

   (iii) You may sample the combined emissions and use engineering calculations and assessments as specified in §98.123(c)(4) to allocate the emissions to each manifolded process vent, provided the sum of the calculated fluorinated GHG emissions across the individual process vents is within 20 percent of the total fluorinated GHG emissions measured during the manifolded testing.

(5) **Emission test results.** The results of an emission test must include the analysis of samples, number of test runs, the results of the RSD analysis, the analytical method used, determination of emissions, the process activity, and raw data and must identify the process, the operating scenario, the process vents tested, and the fluorinated GHGs that were included in the test (i.e., the fluorinated GHGs that occur in more than trace concentrations in the vent stream or, where a destruction device is used, in the inlet to the destruction device, and any other fluorinated GHGs included in the test). The emissions test report must contain all information and data used to derive the process-vent-specific emission factor, as well as key process conditions during the test. Key process conditions include those that are normally monitored for process control purposes and may include but are not limited to yields, pressures, temperatures, etc. (e.g., of reactor vessels, distillation columns).

(7) **Emissions testing frequency.** You must conduct emissions testing to develop the process-vent-specific emission factor under paragraph (c)(7)(i) or (c)(7)(ii) of this section, whichever occurs first:

   (i) **10-year revision.** Conduct an emissions test every 10 years. In the calculations under §98.123, apply the revised process-vent-specific emission factor to the process activity that occurs after the revision.

   (ii) **Operating scenario change that affects the emission factor.** For planned operating scenario changes, you must estimate and compare the emission calculation factors for the changed operating scenario and for the original operating scenario whose process vent specific emission factor was measured. Use the calculation methods in §98.123(c)(4). If the emission calculation factor for the changed operating scenario is 15 percent or more different from the emission calculation factor for the previous operating scenario (this includes the cumulative change in the emission calculation factor since the last emissions test), you must conduct an emissions test to update the process-vent-specific emission factor, unless the difference between the operating scenarios is solely due to the application of a destruction device to emissions under the changed operating scenario. Conduct the test before February 28 of the year that immediately follows the change. In the calculations under §98.123, apply the revised process-vent-specific emission factor to the process activity that occurs after the operating scenario change.

(8) **Subsequent measurements.** If a continuous process vent with fluorinated GHG emissions less than 10,000 metric tons CO₂e, per §98.123(c)(2), is later found to have fluorinated GHG emissions of 10,000 metric tons CO₂e or greater, you must conduct the emissions testing for the process vent during the following year and develop the process-vent-specific emission factor from the emissions testing.

(9) **Previous measurements.** If you have conducted an emissions test less than 10 years before December 31, 2010, and the emissions testing meets the requirements in paragraphs (c)(1) through (c)(8) of this section, you may use the previous emissions testing to develop process-vent-specific emission factors. For purposes of paragraph (c)(7)(i) of this section, the date of the
previous emissions test rather than December 31, 2010 shall constitute the beginning of the 10-year re-measurement cycle.

(d) Emission calculation factor monitoring. If you determine fluorinated GHG emissions using the site-specific process-vent-specific emission calculation factor, you must meet the requirements in paragraphs (d)(1) through (d)(4) of this section.

(1) Operating scenario. Perform the emissions calculation for the process vent based on representative performance of the operating scenario of the process. If more than one operating scenario applies to the process that contains the subject process vent, you must conduct a separate emissions calculation for operation under each operating scenario. For each continuous process vent that contains more than trace concentrations of any fluorinated GHG and for each batch process vent that contains more than trace concentrations of any fluorinated GHG, develop the process-vent-specific emission calculation factor for each operating scenario. For continuous process vents, determine the emissions based on the process activity for the representative performance of the operating scenario. For batch process vents, determine emissions based on the process activity for each typical batch operating scenario.

(2) Process activity measurements. Use flow meters, weigh scales, or other measurement devices or instruments with an accuracy and precision of ±1 percent of full scale or better for monitoring ongoing process activity.

(3) Emission calculation results. The emission calculation must be documented by identifying the process, the operating scenario, and the process vents. The documentation must contain the information and data used to calculate the process-vent-specific emission calculation factor.

(4) Operating scenario change that affects the emission calculation factor. For planned operating scenario changes that are expected to change the process-vent-specific emission calculation factor, you must conduct an emissions calculation to update the process-vent-specific emission calculation factor. In the calculations under §98.123, apply the revised emission calculation factor to the process activity that occurs after the operating scenario change.

(5) Previous calculations. If you have performed an emissions calculation for the process vent and operating scenario less than 10 years before December 31, 2010, and the emissions calculation meets the requirements in paragraphs (d)(1) through (d)(4) of this section and in §98.123(c)(4)(i) and (c)(4)(ii), you may use the previous calculation to develop the site-specific process-vent-specific emission calculation factor.

(e) Emission and stream testing, including analytical methods. Select and document testing and analytical methods as follows:

(1) Sampling and mass measurement for emission testing. For emission testing in process vents or at the stack, use methods for sampling, measuring volumetric flow rates, non-fluorinated-GHG gas analysis, and measuring stack gas moisture that have been validated using a scientifically sound validation protocol.

(i) Sample and velocity traverses. Acceptable methods include but are not limited to EPA Method 1 or 1A in Appendix A–1 of 40 CFR part 60.

(ii) Velocity and volumetric flow rates. Acceptable methods include but are not limited to EPA Method 2, 2A, 2B, 2C, 2D, 2F, or 2G in Appendix A–1 of 40 CFR part 60. Alternatives that may be used for determining flow rates include OTM–21 (incorporated by reference, see §98.7) and ALT–012 (incorporated by reference, see §98.7).

(iii) Non-fluorinated-GHG gas analysis. Acceptable methods include but are not limited to EPA Method 3, 3A, or 3B in Appendix A–1 of 40 CFR part 60.

(iv) Stack gas moisture. Acceptable methods include but are not limited to EPA Method 4 in Appendix A–1 of 40 CFR part 60.

(2) Analytical methods. Use a quality-assured analytical measurement technology capable of detecting the analyte of interest at the concentration of interest and use a sampling and analytical procedure validated with the analyte of interest at the concentration of interest. Where calibration standards for the analyte are not available, a chemically similar surrogate
may be used. Acceptable analytical measurement technologies include but are not limited to gas chromatography (GC) with an appropriate detector, infrared (IR), fourier transform infrared (FTIR), and nuclear magnetic resonance (NMR). Acceptable methods for determining fluorinated GHGs include EPA Method 18 in appendix A–1 of 40 CFR part 60, EPA Method 320 in appendix A of 40 CFR part 63, EPA 430-R-10-003 (incorporated by reference, see §98.7), ASTM D6348-03 (incorporated by reference, see §98.7), or other analytical methods validated using EPA Method 301 at 40 CFR part 63, appendix A or some other scientifically sound validation protocol. Acceptable methods for determining total fluorine concentrations for fluorine-containing compounds in streams under paragraph (b)(3) of this section include ASTM D7359-08 (incorporated by reference, see §98.7), or other analytical methods validated using EPA Method 301 at 40 CFR part 63, appendix A or some other scientifically sound validation protocol. The validation protocol may include analytical technology manufacturer specifications or recommendations.

(3) Documentation in GHG Monitoring Plan. Describe the sampling, measurement, and analytical method(s) used under paragraphs (e)(1) and (e)(2) of this section in the GHG Monitoring Plan as required under §98.3(g)(5). Identify the methods used to obtain the samples and measurements listed under paragraphs (e)(1)(i) through (e)(1)(iv) of this section. At a minimum, include in the description of the analytical method a description of the analytical measurement equipment and procedures, quantitative estimates of the method’s accuracy and precision for the analytes of interest at the concentrations of interest, as well as a description of how these accuracies and precisions were estimated, including the validation protocol used.

(f) Emission monitoring for pieces of equipment. If you conduct a site-specific leak detection method or monitoring approach for pieces of equipment, follow paragraph (f)(1) or (f)(2) of this section and follow paragraph (f)(3) of this section.

(1) Site-specific leak monitoring approach. You may develop a site-specific leak monitoring approach. You must validate the leak monitoring method and describe the method and the validation in the GHG Monitoring Plan. To validate the site-specific method, you may, for example, release a known rate of the fluorinated GHGs or surrogates of interest, or you may compare the results of the site-specific method to those of a method that has been validated for the fluorinated GHGs or surrogates of interest. In the description of the leak detection method and its validation, include a detailed description of the method, including the procedures and equipment used and any sampling strategies. Also include the rationale behind the method, including why the method is expected to result in an unbiased estimate of emissions from equipment leaks. If the method is based on methods that are used to detect or quantify leaks or other emissions in other regulations, standards, or guidelines, identify and describe the regulations, standards, or guidelines and why their methods are applicable to emissions of fluorinated GHGs or surrogates from leaks. Account for possible sources of error in the method, e.g., instrument detection limits, measurement biases, and sampling biases. Describe validation efforts, including but not limited to any comparisons against standard leaks or concentrations, any comparisons against other methods, and their results. If you use the Screening Ranges Approach, the EPA Correlation Approach, or the Unit-Specific Correlation Approach with a monitoring instrument that does not meet all of the specifications in EPA Method 21 at 40 CFR part 60, appendix A-7, then explain how and why the monitoring instrument, as used at your facility, would nevertheless be expected to accurately detect and quantify emissions of fluorinated GHGs or surrogates from process equipment, and describe how you verified its accuracy. For all methods, provide a quantitative estimate of the accuracy and precision of the method.

(2) EPA Method 21 monitoring. If you determine that EPA Method 21 at 40 CFR part 60, appendix A-7 is appropriate for monitoring a fluorinated...
GHG, conduct the screening value concentration measurements using EPA Method 21 at 40 CFR part 60, appendix A-7 to determine the screening range data or the actual screening value data for the Screening Ranges Approach, EPA Correlation Approach, or the Unit-Specific Correlation Approach. For the one-time testing to develop the Unit-Specific Correlation equations in EPA-453/R-95-017 (incorporated by reference, see §98.7), conduct the screening value concentration measurements using EPA Method 21 at 40 CFR part 60, appendix A-7 and the bagging procedures to measure mass emissions. Concentration measurements of bagged samples must be conducted using gas chromatography following EPA Method 18 analytical procedures or other method according to §98.124(e). Use methane or other appropriate compound as the calibration gas.

(3) Frequency of measurement and sampling. If you estimate emissions based on monitoring of equipment, conduct monitoring at least annually. Sample at least one-third of equipment annually (except for equipment that is unsafe-to-monitor, difficult-to-monitor, insulated, or in heavy liquid service, pumps with dual mechanical seals, agitators with dual mechanical seals, pumps with no external shaft, agitators with no external shaft, pressure relief devices in gas and vapor service with an upstream rupture disk, sampling connection systems with closed-loop or closed purge systems, and pieces of equipment whose leaks are routed through a closed vent system to a destruction device), changing the sample each year such that at the end of three years, all equipment in the process has been monitored. If you estimate emissions based on a sample of the equipment in the process, ensure that the sample is representative of the equipment in the process. If you have multiple processes that have similar types of equipment in similar service, and that produce or transform similar fluorinated GHGs (in terms of chemical composition, molecular weight, and vapor pressure) at similar pressures and concentrations, then you may annually sample all of the equipment in one-third of these processes rather than one third of the equipment in each process.

(g) Destruction device performance testing. If you vent or otherwise feed fluorinated GHGs into a destruction device and apply the destruction efficiency of the device to one or more fluorinated GHGs in §98.123, you must conduct emissions testing to determine the destruction efficiency for each fluorinated GHG to which you apply the destruction efficiency. You must either determine the destruction efficiency for the most-difficult-to-destroy fluorinated GHG fed into the device or alternatively determine different destruction efficiencies for different groups of fluorinated GHGs using the most-difficult-to-destroy fluorinated GHG of each group (or a surrogate that is still more difficult to destroy).

(1) Destruction efficiency testing. You must sample the inlet and outlet of the destruction device for a minimum of three runs of 1 hour each to determine the destruction efficiency. You must conduct the emissions testing using the methods in paragraph (e) of this section. To determine the destruction efficiency, emission testing must be conducted when operating at high loads reasonably expected to occur (i.e., representative of high total fluorinated GHG load that will be sent to the device) and when destroying the most-difficult-to-destroy fluorinated GHG (or a surrogate that is still more difficult to destroy) that is fed into the device from the processes subject to this subpart or that belongs to the group of fluorinated GHGs for which you wish to establish a DE. If the outlet concentration of a fluorinated GHG that is fed into the device is below the detection limit of the method, you may use a concentration of one-half the detection limit to estimate the destruction efficiency.

(i) If perfluoromethane (CF$_4$) is vented to the destruction device in any stream in more than trace concentrations, you must test and determine the destruction efficiency achieved specifically for CF$_4$ to take credit for the CF$_4$ emissions reduction.
(i) If sulfur hexafluoride (SF₆) is vented to the destruction device in any stream in more than trace concentrations, you must test and determine the destruction efficiency achieved specifically for SF₆, or alternatively for CF₄ as a surrogate, to take credit for the SF₆ emissions reduction.

(ii) If saturated perfluorocarbons other than CF₄ are vented to the destruction device in any stream in more than trace concentrations, you must test and determine the destruction efficiency achieved for the lowest molecular weight saturated perfluorocarbon vented to the destruction device, or alternatively for a lower molecular weight saturated PFC or SF₆ as a surrogate, to take credit for the PFC emission reduction.

(iv) For all other fluorinated GHGs that are vented to the destruction device in any stream in more than trace concentrations, you must test and determine the destruction efficiency achieved for the most-difficult-to-destroy fluorinated GHG or surrogate vented to the destruction device. Examples of acceptable surrogates include the Class 1 compounds (ranked 1 through 34) in Appendix D, Table D–1 of “Guidance on Setting Permit Conditions and Reporting Trial Burn Results; Volume II of the Hazardous Waste Incineration Guidance Series,” January 1989, EPA Publication EPA 625/6–89/019. You can obtain a copy of this publication by contacting the Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460, (202) 272–0167, http://www.epa.gov.

(2) Destruction efficiency testing frequency. You must conduct emissions testing to determine the destruction efficiency as provided in paragraphs (g)(2)(i) or (ii) of this section, which ever occurs first:

(i) Conduct an emissions test every 10 years. In the calculations under §98.123, apply the updated destruction efficiency to the destruction that occurs after the test.

(ii) Destruction device changes that affect the destruction efficiency. If you make a change to the destruction device that would be expected to affect the destruction efficiency, you must conduct an emissions test to update the destruction efficiency. Conduct the test before the February 28 of the year that immediately follows the change. In the calculations under §98.123, apply the updated destruction efficiency to the destruction that occurs after the change to the device.

(3) Previous testing. If you have conducted an emissions test within the 10 years prior to December 31, 2010, and the emissions testing meets the requirements in paragraph (g)(1) of this section, you may use the destruction efficiency determined during this previous emissions testing. For purposes of paragraph (g)(2)(i) of this section, the date of the previous emissions test rather than December 31, 2010 shall constitute the beginning of the 10-year re-measurement cycle.

(4) Hazardous Waste Combustor testing. If a destruction device used to destroy fluorinated GHG is subject to subpart EEE of part 63 of this chapter or any portion of parts 260–270 of this chapter, you may apply the destruction efficiency specifically determined for CF₄, SF₆, PFCs other than CF₄, and all other fluorinated GHGs under that test if the testing meets the criteria in paragraph (g)(1)(i) through (g)(1)(iv) of this section. If the testing of the destruction efficiency under subpart EEE of part 63 of this chapter was conducted more than 10 years ago, you may use the most recent destruction efficiency test provided that the design, operation, or maintenance of the destruction device has not changed since the last destruction efficiency test in a manner that could affect the ability to achieve the destruction efficiency, and the hazardous waste is fed into the normal flame zone.

(3) Mass of previously produced fluorinated GHGs fed into destruction device. You must measure the mass of each fluorinated GHG that is fed into the destruction device in more than trace concentrations and that was previously produced as defined at §98.410(b). Such fluorinated GHGs include but are not limited to quantities that are shipped to the facility by another facility for destruction and quantities that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore destroyed. You must use
flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of ±1 percent of full scale or better. If the measured mass includes more than trace concentrations of materials other than the fluorinated GHG being destroyed, you must measure the concentration of the fluorinated GHG being destroyed. You must multiply this concentration (mass fraction) by the mass measurement to obtain the mass of the fluorinated GHG fed into the destruction device.

(i) Emissions due to malfunctions of destruction device. In their estimates of the mass of fluorinated GHG destroyed, fluorinated gas production facilities that destroy fluorinated GHGs must account for any temporary reductions in the destruction efficiency that result from any malfunctions of the destruction device, including periods of operation outside of the operating conditions defined in operating permit requirements and/or destruction device manufacturer specifications.

(j) Emissions due to process startup, shutdown, or malfunctions. Fluorinated GHG production facilities must account for fluorinated GHG emissions that occur as a result of startups, shutdowns, and malfunctions, either recording fluorinated GHG emissions during these events, or documenting that these events do not result in significant fluorinated GHG emissions. Facilities may use the calculation methods in §98.123(c)(1) to estimate emissions during startups, shutdowns, and malfunctions.

(k) Monitoring for venting residual fluorinated GHG in containers. Measure the residual fluorinated GHG in containers received by the facility either using scales or using pressure and temperature measurements. You may use pressure and temperature measurements only in cases where no liquid fluorinated GHG is present in the container. Scales must have an accuracy and precision of ±1 percent or better of the filled weight (gas plus tare) of the containers of fluorinated GHGs that are typically weighed on the scale. For example, for scales that are generally used to weigh cylinders that contain 115 pounds of gas when full and that have a tare weight of 115 pounds, this equates to ±1 percent of 230 pounds, or ±2.3 pounds. Pressure gauges and thermometers used to measure quantities that are monitored under this paragraph must have an accuracy and precision of ±1 percent of full scale or better.

(l) Initial scoping speciations, emissions testing, emission factor development, emission calculation factor development, emission characterization development, and destruction efficiency determinations must be completed by February 29, 2012 for processes and operating scenarios that operate between December 31, 2010 and December 31, 2011. For other processes and operating scenarios, initial scoping speciations, emissions testing, emission factor development, emission calculation factor development, emission characterization development, and destruction efficiency determinations must be complete by February 28 of the year following the year in which the process or operating scenario commences or recommences.

(m) Calibrate all flow meters, weigh scales, and combinations of volumetric and density measures using monitoring instruments traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST) or other recognized national measurement institute. Recalibrate all flow meters, weigh scales, and combinations of volumetric and density measures at the minimum frequency specified by the manufacturer. Use any of the following applicable flow meter test methods or the calibration procedures specified by the flow meter, weigh-scale, or other volumetric or density measure manufacturer.


(n) All analytical equipment used to determine the concentration of fluorinated GHGs, including but not limited to gas chromatographs and associated detectors, infrared (IR), fourier transform infrared (FTIR), and nuclear magnetic resonance (NMR) devices, must be calibrated at a frequency needed to support the type of analysis specified in the GHG Monitoring Plan as required under §98.124(e)(6) and 93.3(g)(6). Quality assurance samples at the concentrations of concern must be used for the calibration. Such quality assurance samples must consist of or be prepared from certified standards of the analytes of concern where available; if not available, calibration must be performed by a method specified in the GHG Monitoring Plan.

(o) Special provisions for estimating 2011 and subsequent year emissions.

(1) Best available monitoring methods. To estimate emissions that occur from January 1, 2011 through June 30, 2011, owners or operators may use best available monitoring methods for any parameter that cannot reasonably be measured according to the monitoring and QA/QC requirements of this subpart. The owner or operator must use the calculation methodologies and equations in §98.123, but may use the best available monitoring method for any parameter for which it is not reasonably feasible to acquire, install, or operate a required piece of monitoring equipment, to procure measurement services from necessary providers, or to gain physical access to make required measurements in a facility by January 1, 2011. Starting no later than July 1, 2011, the owner or operator must discontinue using best available methods and begin following all applicable monitoring and QA/QC requirements of this part, except as provided in paragraphs (o)(2) through (o)(4) of this section. Best available monitoring methods means any of the following methods specified in this paragraph:

(i) Monitoring methods currently used by the facility that do not meet the specifications of this subpart.

(ii) Supplier data.

(iii) Engineering calculations or assessments.

(iv) Other company records.

(2) Requests for extension of the use of best available monitoring methods to estimate 2011 emissions: parameters other than scoping speciations, emission factors, and emission characterizations. The owner or operator may submit a request to the Administrator to use one or more best available monitoring methods for parameters other than scoping speciations, emission factors, or emission characterizations to estimate emissions that occur between July 1, 2011 and December 31, 2011.

(i) Timing of request. The extension request must be submitted to EPA no later than February 28, 2011.

(ii) Content of request. Requests must contain the following information:

(A) A list of specific items of monitoring equipment and measurement services for which the request is being made and the locations (e.g., processes and vents) where each piece of monitoring equipment will be installed and where each measurement service will be provided.

(B) Identification of the specific rule requirements for which the monitoring equipment or measurement service is needed.

(C) A description of the reasons why the needed equipment could not be obtained, installed, or operated or why the needed measurement service could not be provided before July 1, 2011. The owner or operator must consider all of the data collection and emission calculation options outlined in the rule for a specific emissions source before
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claiming that a specific safety, technical, logistical, or legal barrier exists.

(D) If the reason for the extension is that the equipment cannot be purchased, delivered, or installed before July 1, 2011, include supporting documentation such as the date the monitoring equipment was ordered, investigation of alternative suppliers, the dates by which alternative vendors promised delivery or installation, backorder notices or unexpected delays, descriptions of actions taken to expedite delivery or installation, and the current expected date of delivery or installation.

(E) If the reason for the extension is that service providers were unable to provide necessary measurement services, include supporting documentation demonstrating that these services could not be acquired before July 1, 2011. This documentation must include written correspondence to and from at least two service providers stating that they will not be able to provide the necessary services before July 1, 2011.

(F) If the reason for the extension is that the process is operating continuously without process shutdown, include supporting documentation showing that it is not practicable to isolate the process equipment or unit and install the measurement device without a full shutdown or a hot tap, and that there is no opportunity before July 1, 2011 to install the device. Include the date of the three most recent shutdowns for each relevant process equipment or unit, the frequency of shutdowns for each relevant process equipment or unit, and the date of the next planned process equipment or unit shutdown.

(G) If the reason for the extension is that access to process streams, emissions streams, or destroyed streams, as applicable, could not be gained before July 1, 2011 for reasons other than the continuous operation of the process without shutdown, include illustrative documentation such as photographs and engineering diagrams demonstrating that access could not be gained.

(H) A description of the best available monitoring methods that will be used (i.e., which calculation method will be used) to develop the emission estimate. Where the proposed best available monitoring method is the use of current monitoring data in the mass-balance approach, include the estimated relative and absolute errors of the mass-balance approach using the current monitoring data.

(1) A description of the specific actions the owner or operator will take to comply with monitoring requirements by January 1, 2012.

(3) Requests for extension of the use of best available monitoring methods to estimate 2011 emissions: scoping specifications, emission factors, and emission characterizations. The owner or operator may submit a request to the Administrator to use one or more best available monitoring methods for scoping specifications, emission factors, and emission characterizations to estimate emissions that occur between July 1, 2011 and December 31, 2011.

(i) Timing of request. The extension request must be submitted to EPA no later than June 30, 2011.

(ii) Content of request. Requests must contain the information outlined in paragraph (o)(2)(ii) of this section, substituting March 1, 2012 for July 1, 2011 and substituting March 1, 2013 for January 1, 2012.

(iii) Reporting of 2011 emissions using scoping specifications, emission factors, and emission characterizations developed after February 29, 2012. Facilities that are approved to use best available monitoring methods in 2011 for scoping specifications, emission factors, or emission characterizations for certain processes must submit, by March 31, 2013, revised 2011 emission estimates that reflect the scoping specifications, emission factors, and emission characterizations that are measured for those processes after February 29, 2012. If the operating scenario for 2011 is different from all of the operating scenarios for which emission factors are developed after February 29, 2012, use Equation L–23 at §98.123(c)(3)(viii) to adjust the emission factor(s) or emission characterizations measured for the post-February 29, 2012 operating scenario(s) to account for the differences.

(4) Requests for extension of the use of best available monitoring methods to estimate emissions that occur after 2011. EPA
§ 98.125 Procedures for estimating missing data.

(a) A complete record of all measured parameters used in the GHG emissions calculations in §98.123 is required. Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter must be used in the calculations as specified in the paragraphs (b) and (c) of this section. You must document and keep records of the procedures used for all such estimates.

(b) For each missing value of the fluorinated GHG concentration or fluorine-containing compound concentration, the substitute data value must be the arithmetic average of the quality-assured values of that parameter immediately preceding and immediately following the missing data incident.
§ 98.126 Data reporting requirements.

(a) All facilities. In addition to the information required by §98.3(c), you must report the information in paragraphs (a)(2) through (a)(6) of this section.

(1) Frequency of reporting under paragraph (a) of this section. The information in paragraphs (a)(2), (5), and (6) of this section must be reported annually. The information in paragraphs (a)(3) and (4) of this section must be reported once by March 31, 2012 for each process and operating scenario that operates between December 31, 2010 and December 31, 2011. For other processes and operating scenarios, the information in paragraphs (a)(3) and (4) of this section must be reported once by March 31 of the year following the year in which the process or operating scenario commences or recommences.

(2) You must report the total mass in metric tons of each fluorinated GHG emitted from:

(i) Each fluorinated gas production process and all fluorinated gas production processes combined.

(ii) Each fluorinated gas transformation process that is not part of a fluorinated gas production process and all such fluorinated gas transformation processes combined, except report separately fluorinated GHG emissions from transformation processes where a fluorinated GHG reactant is produced at another facility.

(iii) Each fluorinated gas destruction process that is not part of a fluorinated gas production process or a fluorinated gas transformation process and all such fluorinated gas destruction processes combined.

(iv) Venting of residual fluorinated GHGs from containers returned from the field.

(3) The chemical identities of the contents of the stream(s) (including process streams, emissions streams, and destroyed streams) analyzed under the initial scoping speciation of fluorinated GHG at §98.124(a), by process.

(4) The location and function of the stream(s) (including process streams, emissions streams, and destroyed streams) that were analyzed under the initial scoping speciation of fluorinated GHG at §98.124(a), by process.

(5) The method used to determine the mass emissions of each fluorinated GHG, i.e., mass balance, process-vent-specific emission factor, or process-vent-specific emission calculation factor, for each process and process vent at the facility. For processes for which the process-vent-specific emission factor or process-vent-specific emission calculation factor are used, report the method used to estimate emissions from equipment leaks.

(6) The chemical formula and total mass produced of the fluorinated gas product in metric tons, by chemical and process.

(b) Reporting for mass balance approach. For processes whose emissions are determined using the mass-balance approach under §98.123(b), you must report the information listed in paragraphs (b)(1) through (b)(13) of this section for each process on an annual basis. Identify and separately report fluorinated GHG emissions from transformation processes where the fluorinated GHG reactants are produced at another facility. If you use an
element other than fluorine in the mass-balance equation pursuant to §98.123(b)(3), substitute that element for fluorine in the reporting requirements of this paragraph.

(1) If you calculate the relative and absolute errors under §98.123(b)(1), the absolute and relative errors calculated under paragraph §98.123(b)(1), as well as the data (including quantities and their accuracies and precisions) used in these calculations.

(2) The balanced chemical equation that describes the reaction used to manufacture the fluorinated GHG product and each fluorinated GHG transformation product.

(3) The mass and chemical formula of each fluorinated GHG reactant emitted from the process in metric tons.

(4) The mass and chemical formula of the fluorinated GHG product emitted from the process in metric tons.

(5) The mass and chemical formula of each fluorinated GHG by-product emitted from the process in metric tons.

(6) The mass and chemical formula of each fluorine-containing reactant that is fed into the process (metric tons).

(7) The mass and chemical formula of each fluorine-containing product produced by the process (metric tons).

(8) If you use §98.123(b)(4) to estimate the total mass of fluorine in destroyed or recaptured streams, report the following.

(i) The mass and chemical formula of each fluorine-containing product that is removed from the process and fed into the destruction device (metric tons).

(ii) The mass and chemical formula of each fluorine-containing by-product that is removed from the process and fed into the destruction device (metric tons).

(iii) The mass and chemical formula of each fluorine-containing reactant that is removed from the process and fed into the destruction device (metric tons).

(iv) The mass and chemical formula of each fluorine-containing by-product that is removed from the process and recaptured (metric tons).

(v) The demonstrated destruction efficiency of the destruction device for each fluorinated GHG fed into the device from the process in greater than trace concentrations (fraction).

(9) If you use §98.123(b)(15) to estimate the total mass of fluorine in destroyed or recaptured streams, report the following.

(i) The mass of fluorine in each stream that is fed into the destruction device (metric tons).

(ii) The mass of fluorine that is recaptured (metric tons).

(iii) The weighted average destruction efficiency of the destruction device calculated for each stream under §98.123(b)(16).

(10) The fraction of the mass emitted that consists of each fluorine-containing reactant.

(11) The fraction of the mass emitted that consists of the fluorine-containing product.

(12) The fraction of the mass emitted that consists of each fluorine-containing by-product.

(13) The method used to estimate the total mass of fluorine in destroyed or recaptured streams (specify §98.123(b)(4) or (15)).

(c) Reporting for emission factor and emission calculation factor approach. For processes whose emissions are determined using the emission factor approach under §98.123(c)(3) or the emission calculation factor under §98.123(c)(4), you must report the following for each process.

Fluorinated GHG emissions from transformation processes where the fluorinated GHG reactants are produced at another facility must be identified and reported separately from other fluorinated GHG emissions.

(1) The identity and quantity of the process activity used to estimate emissions (e.g., tons of product produced or tons of reactant consumed).

(2) The site-specific, process-vent-specific emission factor(s) or emission calculation factor for each process vent.

(3) The mass of each fluorinated GHG emitted from each process vent (metric tons).

(4) The mass of each fluorinated GHG emitted from equipment leaks (metric tons).

(d) Reporting for missing data. Where missing data have been estimated pursuant to §98.125, you must report the
reason the data were missing, the length of time the data were missing, the method used to estimate the missing data, and the estimates of those data.

(e) Reporting of destruction device excess emissions data. Each fluorinated gas production facility that destroys fluorinated GHGs must report the excess emissions that result from malfunctions of the destruction device, and these excess emissions would be reflected in the fluorinated GHG estimates in § 98.123(b) and (c). Such excess emissions would occur if the destruction efficiency was reduced due to the malfunction.

(f) Reporting of destruction device testing. By March 31, 2012 or by March 31 of the year immediately following the year in which it begins fluorinated GHG destruction, each fluorinated gas production facility that destroys fluorinated GHGs must submit a report containing the information in paragraphs (f)(1) through (f)(4) of this section. This report is one-time unless you make a change to the destruction device that would be expected to affect its destruction efficiencies.

(1) Destruction efficiency (DE) of each destruction device for each fluorinated GHG whose destruction the facility reflects in § 98.123, in accordance with § 98.123(g)(1)(i) through (iv).

(2) Chemical identity of the fluorinated GHG(s) used in the performance test conducted to determine destruction efficiency, including surrogates, and information on why the surrogate is sufficient to demonstrate the destruction efficiency for each fluorinated GHG, consistent with requirements in § 98.123(g)(1), vented to the destruction device.

(3) Date of the most recent destruction device test.

(4) Name of all applicable Federal or State regulations that may apply to the destruction process.

(5) If you make a change to the destruction device that would be expected to affect its destruction efficiencies, submit a revised report that reflects the changes, including the revised destruction efficiencies measured for the device under § 98.123(g)(2)(ii), by March 31 of the year that immediately follows the change.

(g) Reporting for destruction of previously produced fluorinated GHGs. Each fluorinated gas production facility that destroys fluorinated GHGs must report, separately from the fluorinated GHG emissions reported under paragraphs (b) or (c) of this section, the following for each previously produced fluorinated GHG destroyed:

(1) The mass of the fluorinated GHG fed into the destruction device.

(2) The mass of the fluorinated GHG emitted from the destruction device.

(h) Reporting of emissions from venting of residual fluorinated GHGs from containers. Each fluorinated gas production facility that vents residual fluorinated GHGs from containers must report the following for each fluorinated GHG vented:

(1) The mass of the residual fluorinated GHG vented from each container size and type annually (tons).

(2) If applicable, the heel factor calculated for each container size and type.

(i) Reporting of fluorinated GHG products of incomplete combustion (PICs) of fluorinated gases. Each fluorinated gas production facility that destroys fluorinated gases must submit a one-time report by June 30, 2011, that describes any measurements, research, or analysis that it has performed or obtained that relate to the formation of products of incomplete combustion that are fluorinated GHGs during the destruction of fluorinated gases. The report must include the methods and results of any measurement or modeling studies, including the products of incomplete combustion for which the exhaust stream was analyzed, as well as copies of relevant scientific papers, if available, or citations of the papers, if they are not. No new testing is required to fulfill this requirement.

§ 98.127 Records that must be retained.

In addition to the records required by § 98.3(g), you must retain the dated records specified in paragraphs (a) through (j) of this section, as applicable.

(a) Process information records.

(1) Identify all products and processes subject to this subpart. Include the unit identification as appropriate.
(2) Monthly and annual records, as applicable, of all analyses and calculations conducted as required under §98.123, including the data monitored under §98.124, and all information reported as required and §98.126.

(b) Scoping speciation. Retain records documenting the information reported under §98.126(a)(3) and (4).

(c) Mass-balance method. Retain the following records for each process for which the mass-balance method was used to estimate emissions. If you use an element other than fluorine in the mass-balance equation pursuant to §98.123(b)(3), substitute that element for fluorine in the recordkeeping requirements of this paragraph.

(1) The data and calculations used to determine the absolute and relative errors associated with use of the mass-balance approach.

(2) The data and calculations used to estimate the mass of fluorine emitted from the process.

(3) The data and calculations used to determine the fractions of the mass emitted consisting of each reactant (FER<sub>d</sub>), product (FEP), and by-product (FEB<sub>b</sub>), including the preliminary calculations in §98.123(b)(8)(i).

(d) Emission factor and emission calculation factor method. Retain the following records for each process for which the emission factor or emission calculation factor method was used to estimate emissions.

(1) Identify all continuous process vents with emissions of fluorinated GHGs that are less than 10,000 metric tons CO<sub>2</sub>e per year and all continuous process vents with emissions of 10,000 metric tons CO<sub>2</sub>e per year or more. Include the data and calculation used to develop the preliminary estimate of emissions for each process vent.

(2) Identify all batch process vents.

(3) For each vent, identify the method used to develop the factor (i.e., emission factor by emissions test or emission calculation factor).

(4) The emissions test data and reports (see §98.124(c)(5)) and the calculations used to determine the process-vent-specific emission factor, including the actual process-vent-specific emission factor, the average hourly emission rate of each fluorinated GHG from the process vent during the test and the process feed rate, process production rate, or other process activity rate during the test.

(5) The process-vent-specific emission calculation factor and the calculations used to determine the process-vent-specific emission calculation factor.

(6) The annual process production quantity or other process activity information in the appropriate units, along with the dates and time period during which the process was operating and dates and time periods the process vents are vented to the destruction device. As an alternative to date and time periods when process vents are vented to the destruction device, a facility may track dates and time periods that process vents by-pass the destruction device.

(7) Calculations used to determine annual emissions of each fluorinated GHG for each process and the total fluorinated GHG emissions for all processes, i.e., total for facility.

(e) Destruction efficiency testing. A fluorinated GHG production facility that destroys fluorinated GHGs and reflects this destruction in §98.123 must retain the emissions performance testing reports (including revised reports) for each destruction device. The emissions performance testing report must contain all information and data used to derive the destruction efficiency for each fluorinated GHG whose destruction the facility reflects in §98.123, as well as the key process and device conditions during the test. This information includes the following:

(1) Destruction efficiency (DE) determined for each fluorinated GHG whose destruction the facility reflects in §98.123.

(2) The chemical identity of the fluorinated GHG(s) used in the performance test conducted to determine destruction efficiency, including surrogates, and information on why the surrogate is sufficient to demonstrate destruction efficiency for each fluorinated GHG, consistent with requirements in §98.124(g)(1)(i) through (iv), vented to the destruction device.

(3) Mass flow rate of the stream containing the fluorinated GHG(s) or surrogate into the device during the test.

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(4) Concentration (mass fraction) of each fluorinated GHG or surrogate in the stream flowing into the device during the test.

(5) Concentration (mass fraction) of each fluorinated GHG or surrogate at the outlet of the destruction device during the test.

(6) Mass flow rate at the outlet of the destruction device during the test.

(7) Test methods and analytical methods used to determine the mass flow rates and fluorinated GHG (or surrogate) concentrations of the streams flowing into and out of the destruction device during the test.

(8) Destruction device conditions that are normally monitored for device control, such as temperature, total mass flow rates into the device, and CO or O2 levels.

(9) Name of all applicable Federal or State regulations that may apply to the destruction process.

(f) Equipment leak records. If you are subject to §98.123(d) of this subpart, you must maintain information on the number of each type of equipment; the service of each piece of equipment (gas, light liquid, heavy liquid); the concentration of each fluorinated GHG in the stream; each piece of equipment excluded from monitoring requirement; the time period each piece of equipment was in service, and the emission calculations for each fluorinated GHG for all processes. Depending on which equipment leak monitoring approach you follow, you must maintain information on the associated screening data concentrations for greater than or equal to 10,000 ppmv and associated screening data concentrations for less than 10,000 ppmv; associated actual screening data concentrations; and associated screening data and leak rate data (i.e., bagging) used to develop a unit-specific correlation. If you developed and follow a site-specific leak detection approach, provide the records for monitoring events and the emissions estimation calculations, as appropriate, consistent with the approach for equipment leak emission estimation in your GHG Monitoring Plan.

(g) Container heel records. If you vent residual fluorinated GHGs from containers, maintain the following records of the measurements and calculations used to estimate emissions of residual fluorinated GHGs from containers.

(i) If you measure the contents of each container, maintain records of these measurements and the calculations used to estimate emissions of each fluorinated GHG from each container size and type.

(ii) If you develop and apply container heel factors to estimate emissions, maintain records of the measurements and calculations used to develop the heel factor for each fluorinated GHG and each container size and type and of the number of containers of each fluorinated GHG and of each container size and type returned to your facility.

(h) Missing data records. Where missing data have been estimated pursuant to §98.125, you must record the reason the data were missing, the length of time the data were missing, the method used to estimate the missing data, and the estimates of those data.

(i) All facilities. Dated records documenting the initial and periodic calibration of all analytical equipment used to determine the concentration of fluorinated GHGs, including but not limited to gas chromatographs, gas chromatography-mass spectrometry (GC/MS), gas chromatograph-electron capture detector (GC/ECD), fourier transform infrared (FTIR), and nuclear magnetic resonance (NMR) devices, and all mass measurement equipment such as weigh scales, flowmeters, and volumetric and density measures used to measure the quantities reported under this subpart, including the industry standards or manufacturer directions used for calibration pursuant to §98.124(e), (f), (g), (m), and (n).

(j) GHG Monitoring Plans, as described in §98.3(g)(5), must be completed by April 1, 2011.

§ 98.128 Definitions.

Except as provided in this section, all of the terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part. If a conflict exists between a definition provided in this subpart and a definition provided in subpart A, the definition in this subpart shall take precedence for the reporting requirements in this subpart.
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Batch process or batch operation means a noncontinuous operation involving intermittent or discontinuous feed into equipment, and, in general, involves the emptying of the equipment after the batch operation ceases and prior to beginning a new operation. Addition of raw material and withdrawal of product do not occur simultaneously in a batch operation.

Batch emission episode means a discrete venting episode associated with a vessel in a process; a vessel may have more than one batch emission episode. For example, a displacement of vapor resulting from the charging of a vessel with a feed material will result in a discrete emission episode that will last through the duration of the charge and will have an average flow rate equal to the rate of the charge. If the vessel is then heated, there will also be another discrete emission episode resulting from the expulsion of expanded vapor. Other emission episodes also may occur from the same vessel and other vessels in the process, depending on process operations.

By-product means a chemical that is produced coincidentally during the production of another chemical.

Completely destroyed means destroyed with a destruction efficiency of 99.99 percent or greater.

Completely recaptured means 99.99 percent or greater of each fluorinated GHG is removed from a stream.

Continuous process or operation means a process where the inputs and outputs flow continuously throughout the duration of the process. Continuous processes are typically steady state.

Destruction device means any device used to destroy fluorinated GHG.

Destruction process means a process used to destroy fluorinated GHG in a destruction device such as a thermal incinerator or catalytic oxidizer.

Difficult-to-monitor means the equipment piece may not be monitored without elevating the monitoring personnel more than 2 meters (7 feet) above a support surface or it is not accessible in a safe manner when it is in fluorinated GHG service.

Dual mechanical seal pump and dual mechanical seal agitator means a pump or agitator equipped with a dual mechanical seal system that includes a barrier fluid system where the barrier fluid is not in light liquid service; each barrier fluid system is equipped with a sensor that will detect failure of the seal system, the barrier fluid system, or both; and meets the following requirements:

1. Each dual mechanical seal system is operated with the barrier fluid at a pressure that is at all times (except periods of startup, shutdown, or malfunction) greater than the pump or agitator stuffing box pressure; or

2. Equipped with a barrier fluid degassing reservoir that is routed to a process or fuel gas system or connected by a closed-vent system to a control device; or

3. Equipped with a closed-loop system that purges the barrier fluid into a process stream.

Equipment (for the purposes of § 98.123(d) and § 98.124(f) only) means each pump, compressor, agitator, pressure relief device, sampling connection system, open-ended valve or line, valve, connector, and instrumentation system in fluorinated GHG service for a process subject to this subpart; and any destruction devices or closed-vent systems to which processes subject to this subpart are vented.

Fluorinated gas means any fluorinated GHG, CFC, or HCFC.

In fluorinated GHG service means that a piece of equipment either contains or contacts a feedstock, by-product, or product that is a liquid or gas and contains at least 5 percent by weight fluorinated GHG.

In gas and vapor service means that a piece of equipment in regulated material service contains a gas or vapor at operating conditions.

In heavy liquid service means that a piece of equipment in regulated material service is not in gas and vapor service or in light liquid service.

In light liquid service means that a piece of equipment in regulated material service contains a liquid that meets the following conditions:

1. The vapor pressure of one or more of the compounds is greater than 0.3 kilopascals at 20 °C.

2. The total concentration of the pure compounds constituents having a vapor pressure greater than 0.3...
kilopascals at 20 °C is equal to or greater than 20 percent by weight of the total process stream.

(3) The fluid is a liquid at operating conditions.

Note to definition of “in light liquid service”: Vapor pressures may be determined by standard reference texts or ASTM D–2879, (incorporated by reference, see §98.7).

In vacuum service means that equipment is operating at an internal pressure which is at least 5 kilopascals below ambient pressure.

Isolated intermediate means a product of a process that is stored before subsequent processing. An isolated intermediate is usually a product of chemical synthesis. Storage of an isolated intermediate marks the end of a process. Storage occurs at any time the intermediate is placed in equipment used solely for storage.

No external shaft pump and No external shaft agitator means any pump or agitator that is designed with no externally actuated shaft penetrating the pump or agitator housing.

Operating scenario means any specific operation of a process and includes the information specified in paragraphs (1) through (5) of this definition for each process. A change or series of changes to any of these elements, except for paragraph (4) of this definition, constitutes a different operating scenario.

(1) A description of the process, the specific process equipment used, and the range of operating conditions for the process.

(2) An identification of related process vents, their associated emissions episodes and durations, and calculations and engineering analyses to show the annual uncontrolled fluorinated GHG emissions from the process vent.

(3) The control or destruction devices used, as applicable, including a description of operating and/or testing conditions for any associated destruction device.

(4) The process vents (including those from other processes) that are simultaneously routed to the control or destruction device(s).

(5) The applicable monitoring requirements and any parametric level that assures destruction or removal for all emissions routed to the control or destruction device.

Process means all equipment that collectively functions to produce a fluorinated gas product, including an isolated intermediate (which is also a fluorinated gas product), or to transform a fluorinated gas product. A process may consist of one or more unit operations. For the purposes of this subpart, process includes any, all, or a combination of reaction, recovery, separation, purification, or other activity, operation, manufacture, or treatment which are used to produce a fluorinated gas product.

For a continuous process, cleaning operations conducted may be considered part of the process, at the discretion of the facility. For a batch process, cleaning operations are part of the process. Ancillary activities are not considered a process or part of any process under this subpart. Ancillary activities include boilers and incinerators, chillers and refrigeration systems, and other equipment and activities that are not directly involved (i.e., they operate within a closed system and materials are not combined with process fluids) in the processing of raw materials or the manufacturing of a fluorinated gas product.

Process condenser means a condenser whose primary purpose is to recover material as an integral part of a process. All condensers recovering condensate from a process vent at or above the boiling point or all condensers in line prior to a vacuum source are considered process condensers. Typically, a primary condenser or condensers in series are considered to be integral to the process if they are capable of and normally used for the purpose of recovering chemicals for fuel value (i.e., net positive heating value), use, reuse or for sale for fuel value, use, or reuse.

Process vent (for the purposes of this subpart only) means a vent from a process vessel or vents from multiple process vessels within a process that are manifolded together into a common header, through which a fluorinated GHG-containing gas stream is, or has the potential to be, released to the atmosphere (or the point of entry into a control device, if any). Examples of process vents include, but are not limited to, vents on condensers.
§ 98.140 Definition of the source category.

(a) A glass manufacturing facility manufactures flat glass, container glass, pressed and blown glass, or wool fiberglass by melting a mixture of raw materials to produce molten glass and form the molten glass into sheets, containers, fibers, or other shapes. A glass manufacturing facility uses one or more continuous glass melting furnaces to produce glass.

(b) A glass melting furnace that is an experimental furnace or a research and development process unit is not subject to this subpart.

§ 98.141 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a glass production process and the facility meets the requirements of either §98.2(a)(1) or (2).

§ 98.142 GHGs to report.

You must report:
(a) CO₂ process emissions from each continuous glass melting furnace.
(b) CO₂ combustion emissions from each continuous glass melting furnace.
(c) CH₄ and N₂O combustion emissions from each continuous glass melting furnace. You must calculate and report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.
(d) CO₂, CH₄, and N₂O emissions from each stationary fuel combustion unit other than continuous glass melting furnaces. You must report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.

§ 98.143 Calculating GHG emissions.

You must calculate and report the annual process CO₂ emissions from each continuous glass melting furnace using the procedure in paragraphs (a) and (b) of this section.

(a) For each continuous glass melting furnace that meets the conditions specified in §98.33(b)(4)(ii) or (iii), you must calculate and report under this subpart the combined process and combustion CO₂ emissions by operating and maintaining a CEMS to measure CO₂ emissions according to the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(b) For each continuous glass melting furnace that is not subject to the requirements in paragraph (a) of this section, calculate and report the process and combustion CO₂ emissions from the glass melting furnace by using either the procedure in paragraph (b)(1) of this section or the procedure in paragraphs (b)(2) through (b)(7) of this section, except as specified in paragraph (c) of this section.
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(1) Calculate and report under this subpart the combined process and combustion CO$_2$ emissions by operating and maintaining a CEMS to measure CO$_2$ emissions according to the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(2) Calculate and report the process and combustion CO$_2$ emissions separately using the procedures specified in paragraphs (b)(2)(i) through (b)(2)(vi) of this section.

(i) For each carbonate-based raw material charged to the furnace, obtain from the supplier of the raw material the carbonate-based mineral mass fraction.

(ii) Determine the quantity of each carbonate-based raw material charged to the furnace.

(iii) Apply the appropriate emission factor for each carbonate-based raw material charged to the furnace, as shown in Table N–1 to this subpart.

(iv) Use Equation N–1 of this section to calculate process mass emissions of CO$_2$ for each furnace:

\[
E_{CO2} = \sum_{i=1}^{n} MF_i \cdot \left( M_i \cdot \frac{2000}{2205} \right) \cdot EF_i \cdot F_i
\]  

(Eq. N-1)

Where:

- $E_{CO2} =$ Process emissions of CO$_2$ from the furnace (metric tons).
- $MF_i =$ Annual average mass fraction of carbonate-based mineral $i$ in carbonate-based raw material $i$ (percentage, expressed as a decimal).
- $M_i =$ Annual amount of carbonate-based raw material $i$ charged to furnace (tons).
- $2000/2205 =$ Conversion factor to convert tons to metric tons.
- $EF_i =$ Emission factor for carbonate-based raw material $i$ (metric ton CO$_2$ per metric ton carbonate-based raw material as shown in Table N–1 to this subpart).
- $F_i =$ Fraction of calcination achieved for carbonate-based raw material $i$, assumed to be equal to 1.0 (percentage, expressed as a decimal).

(v) You must calculate the total process CO$_2$ emissions from continuous glass melting furnaces at the facility using Equation N–2 of this section:

\[
CO_2 = \sum_{i=1}^{k} E_{CO2i}
\]  

(Eq. N-2)

Where:

- $CO_2 =$ Annual process CO$_2$ emissions from glass manufacturing facility (metric tons).
- $E_{CO2i} =$ Annual CO$_2$ emissions from glass melting furnace $i$ (metric tons).
- $k =$ Number of continuous glass melting furnaces.

(vi) Calculate and report under subpart C of this part (General Stationary Fuel Combustion Sources) the combustion CO$_2$ emissions in the glass furnace according to the applicable requirements in subpart C.

(c) As an alternative to data provided by the raw material supplier, a value of 1.0 can be used for the mass fraction ($MF_i$) of carbonate-based mineral $i$ in Equation N–1 of this section.

§ 98.144 Monitoring and QA/QC requirements.

(a) You must measure annual amounts of carbonate-based raw materials charged to each continuous glass melting furnace from monthly measurements using plant instruments used for accounting purposes, such as calibrated scales or weigh hoppers. Total annual mass charged to glass melting furnaces at the facility shall be compared to records of raw material purchases for the year.

(b) You must measure carbonate-based mineral mass fractions at least annually to verify the mass fraction data provided by the supplier of the raw material; such measurements shall be based on sampling and chemical analysis using ASTM D3682-01 (Re-approved 2006) Standard Test Method for Major and Minor Elements in Combustion Residues from Coal Utilization Processes (incorporated by reference,
§ 98.145 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations is required (e.g., carbonate raw materials consumed, etc.). If the monitoring and quality assurance procedures in §98.144 cannot be followed and data is missing, you must use the most appropriate of the missing data procedures in paragraphs (a) and (b) of this section. You must document and keep records of the procedures used for all such missing value estimates.

(a) For missing data on the monthly amounts of carbonate-based raw materials charged to any continuous glass melting furnace use the best available estimate(s) of the parameter(s), based on all available process data or data used for accounting purposes, such as purchase records.

(b) For missing data on the mass fractions of carbonate-based minerals in the carbonate-based raw materials assume that the mass fraction of each carbonate based mineral is 1.0.

§ 98.146 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) and (b) of this section, as applicable.

(a) If a CEMS is used to measure CO₂ emissions, then you must report under this subpart the relevant information required under §98.36 for the Tier 4 Calculation Methodology and the following information specified in paragraphs (a)(1) and (2) of this section:

(1) Annual quantity of each carbonate-based raw material charged to each continuous glass melting furnace and for all furnaces combined (tons).

(2) Annual quantity of glass produced by each glass melting furnace and by all furnaces combined (tons).

(b) If a CEMS is not used to determine CO₂ emissions from continuous glass melting furnaces, then you must report the following information as specified in paragraphs (b)(1) through (b)(9) of this section:

(1) Annual process emissions of CO₂ (metric tons) for each continuous glass melting furnace and for all furnaces combined.

(2) Annual quantity of each carbonate-based raw material charged (tons) to each continuous glass melting furnace and for all furnaces combined.

(3) Annual quantity of glass produced (tons) from each continuous glass melting furnace and from all furnaces combined.

(4) Carbonate-based mineral mass fraction (percentage, expressed as a decimal) for each carbonate-based raw material charged to a continuous glass melting furnace.

(5) Results of all tests used to verify the carbonate-based mineral mass fraction for each carbonate-based raw material charged to a continuous glass melting furnace, as specified in paragraphs (b)(5)(i) through (b)(5)(iii) of this section:

(i) Date of test.

(ii) Method(s) and any variations used in the analyses.

(iii) Mass fraction of each sample analyzed.

(6) The fraction of calcination achieved for each carbonate-based raw
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material, if a value other than 1.0 is used to calculate process mass emissions of CO₂.

(7) Method used to determine fraction of calcination.

(8) Total number of continuous glass melting furnaces.

(9) The number of times in the reporting year that missing data procedures were followed to measure monthly quantities of carbonate-based raw materials or mass fraction of the carbonate-based minerals for any continuous glass melting furnace (months).


§ 98.147 Records that must be retained.

In addition to the information required by §98.3(g), you must retain the records listed in paragraphs (a), (b), and (c) of this section:

(a) If a CEMS is used to measure emissions, then you must retain the records required under §98.37 for the Tier 4 Calculation Methodology and the following information specified in paragraphs (a)(1) and (a)(2) of this section:

(1) Monthly glass production rate for each continuous glass melting furnace (tons).

(2) Monthly amount of each carbonate-based raw material charged to each continuous glass melting furnace (tons).

(b) If process CO₂ emissions are calculated according to the procedures specified in §98.143(b), you must retain the records in paragraphs (b)(1) through (b)(5) of this section:

(1) Monthly glass production rate for each continuous glass melting furnace (metric tons).

(2) Monthly amount of each carbonate-based raw material charged to each continuous glass melting furnace (metric tons).

(3) Data on carbonate-based mineral mass fractions provided by the raw material supplier for all raw materials consumed annually and included in calculating process emissions in Equation N–1 of this subpart.

(4) Results of all tests used to verify the carbonate-based mineral mass fraction for each carbonate-based raw material charged to a continuous glass melting furnace, including the data specified in paragraphs (b)(4)(i) through (b)(4)(v) of this section:

(i) Date of test.

(ii) Method(s), and any variations of the methods, used in the analyses.

(iii) Mass fraction of each sample analyzed.

(iv) Relevant calibration data for the instrument(s) used in the analyses.

(v) Name and address of laboratory that conducted the tests.

(5) The fraction of calcination achieved for each carbonate-based raw material (percentage, expressed as a decimal), if a value other than 1.0 is used to calculate process mass emissions of CO₂.

(c) All other documentation used to support the reported GHG emissions.

§ 98.148 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

<table>
<thead>
<tr>
<th>Carbonate-based raw material—mineral</th>
<th>CO₂ emission factor a</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limestone—CaCO₃</td>
<td>0.440</td>
</tr>
<tr>
<td>Dolomite—CaMg(CO₃)₂</td>
<td>0.477</td>
</tr>
<tr>
<td>Sodium carbonate/soda ash—Na₂CO₃</td>
<td>0.415</td>
</tr>
<tr>
<td>Barium carbonate—BaCO₃</td>
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<tr>
<td>Potassium carbonate—K₂CO₃</td>
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</tr>
<tr>
<td>Lithium carbonate (Li₂CO₃)</td>
<td>0.596</td>
</tr>
<tr>
<td>Strontium carbonate (SrCO₃)</td>
<td>0.298</td>
</tr>
</tbody>
</table>

*Emission factors in units of metric tons of CO₂ emitted per metric ton of carbonate-based raw material charged to the furnace.


Subpart O—HCFC–22 Production and HFC–23 Destruction

§ 98.150 Definition of the source category.

§ 98.151 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains an HCFC–22 production or HFC–23 destruction process and the facility meets the requirements of either § 98.2(a)(1) or (a)(2).

§ 98.152 GHGs to report.

(a) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO₂, CH₄, and N₂O from each stationary combustion unit following the requirements of subpart C.

(b) You must report HFC–23 emissions from HCFC–22 production processes and HFC–23 destruction processes.

§ 98.153 Calculating GHG emissions.

(a) The mass of HFC–23 generated from each HCFC–22 production process shall be estimated by using one of two methods, as applicable:

(1) Where the mass flow of the combined stream of HFC–23 and another reaction product (e.g., HCl) is measured, multiply the weekly (or more frequent) HFC–23 concentration measurement (which may be the average of more frequent concentration measurements) by the weekly (or more frequent) mass flow of the combined stream of HFC–23 and the other product. To estimate annual HFC–23 production, sum the weekly (or more frequent) estimates of the quantities of HFC–23 produced over the year. This calculation is summarized in Equation O–1 of this section:

\[ G_{23} = \sum_{p=1}^{n} \left( c_{23} \cdot F_p \right) \cdot 10^{-3} \]  

(Eq. O-1)

Where:

\( G_{23} \) = Mass of HFC–23 generated annually (metric tons).

\( c_{23} \) = Fraction HFC–23 by weight in HFC–23/other product stream.

\( F_p \) = Mass flow of HFC–23/other product stream during the period \( p \) (kg).

\( p \) = Period over which mass flows and concentrations are measured.

\( n \) = Number of concentration and flow measurement periods for the year.

\( 10^{-3} \) = Conversion factor from kilograms to metric tons.

(2) Where the mass of only a reaction product other than HFC–23 (either HCFC–22 or HCl) is measured, multiply the ratio of the weekly (or more frequent) measurement of the HFC–23 concentration and the weekly (or more frequent) measurement of the other product concentration by the weekly (or more frequent) mass produced of the other product. To estimate annual HFC–23 production, sum the weekly (or more frequent) estimates of the quantities of HFC–23 produced over the year. This calculation is summarized in Equation O–2 of this section, assuming that the other product is HCFC–22. If the other product is HCl, HCl may be substituted for HCFC–22 in Equations O–2 and O–3 of this section.

\[ G_{23} = \sum_{p=1}^{n} \left( \frac{c_{23}}{c_{22}} \right) \cdot P_{22} \cdot 10^{-3} \]  

(Eq. O-2)

Where:

\( G_{23} \) = Mass of HFC–23 generated annually (metric tons).

\( c_{23} \) = Fraction HFC–23 by weight in HCFC–22/HFC–23 stream.

\( c_{22} \) = Fraction HCFC–22 by weight in HCFC–22/HFC–23 stream.

\( P_{22} \) = Mass of HCFC–22 produced over the period \( p \) (kg), calculated using Equation O–3 of this section.

\( p \) = Period over which masses and concentrations are measured.

\( n \) = Number of concentration and mass measurement periods for the year.

\( 10^{-3} \) = Conversion factor from kilograms to metric tons.

(b) The mass of HCFC–22 produced over the period \( p \) shall be estimated by using Equation O–3 of this section:

\[ P_{22} = LF \cdot (O_{22} - U_{22}) \]  

(Eq. O-3)

Where:

\( P_{22} \) = Mass of HCFC–22 produced over the period \( p \) (kg).

\( LF \) = Loading factor for facility.

\( O_{22} \) = Production rate of HCFC–22.

\( U_{22} \) = Utilization rate of HCFC–22.

\( n \) = Number of concentration and mass measurement periods for the year.

\( 10^{-3} \) = Conversion factor from kilograms to metric tons.
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O\textsubscript{22} = mass of HCFC–22 that is measured coming out of the Production process over the period \( p \) (kg).

\( U_{22} \) = Mass of used HCFC–22 that is added to the production process upstream of the output measurement over the period \( p \) (kg).

\( LF \) = Factor to account for the loss of HCFC–22 upstream of the measurement. The value for \( LF \) shall be determined pursuant to §98.154(e).

(c) For HCFC–22 production facilities that do not use a thermal oxidizer or that have a thermal oxidizer that is not directly connected to the HCFC–22 production equipment, HFC–23 emissions shall be estimated using Equation O–4 of this section:

\[
E_{23} = G_{23} - (S_{23} + OD_{23} + D_{23} + I_{23}) \quad \text{(Eq. O-4)}
\]

Where:

\( E_{23} \) = Mass of HFC–23 emitted annually (metric tons).

\( G_{23} \) = Mass of HFC–23 generated annually (metric tons).

\( S_{23} \) = Mass of HFC–23 sent off site for sale annually (metric tons).

\( OD_{23} \) = Mass of HFC–23 sent off site for destruction (metric tons).

\( D_{23} \) = Mass of HFC–23 destroyed on site (metric tons).

\( I_{23} \) = Increase in HFC–23 inventory = HFC–23 in storage at end of year—HFC–23 in storage at beginning of year (metric tons).

(d) For HCFC–22 production facilities that use a thermal oxidizer connected to the HCFC–22 production equipment, HFC–23 emissions shall be estimated using Equation O–5 of this section:

\[
E_{23} = E_L + E_{PV} + E_D \quad \text{(Eq. O-5)}
\]

Where:

\( E_{23} \) = Mass of HFC–23 emitted annually (metric tons).

\( E_L \) = Mass of HFC–23 emitted annually from equipment leaks, calculated using Equation O–6 of this section (metric tons).

\( E_{PV} \) = Mass of HFC–23 emitted annually from process vents, calculated using Equation O–7 of this section (metric tons).

\( E_D \) = Mass of HFC–23 emitted annually from thermal oxidizer (metric tons), calculated using Equation O–8 of this section.

(1) The mass of HFC–23 emitted annually from equipment leaks (for use in Equation O–5 of this section) shall be estimated by using Equation O–6 of this section:

\[
E_L = \sum_{p=1}^{n} \sum_{t} c_{23} \times (F_{Gr} \times N_{Gr} + F_{Lt} \times N_{Lt}) \times 10^{-3} \quad \text{(Eq. O-6)}
\]

Where:

\( E_L \) = Mass of HFC–23 emitted annually from equipment leaks (metric tons).

\( c_{23} \) = Fraction HFC–23 by weight in the stream(s) in the equipment.

\( F_{Gr} \) = The applicable leak rate specified in Table O–1 of this subpart for each source of equipment type and service \( t \) with a screening value of less than 10,000 ppmv (kg/hr/source).

\( N_{Gr} \) = The number of sources of equipment type and service \( t \) with screening values greater than or equal to 10,000 ppmv as determined according to §98.154(j).

\( F_{Lt} \) = The applicable leak rate specified in Table O–1 of this subpart for each source of equipment type and service \( t \) with a screening value of less than 10,000 ppmv (kg/hr/source).

\( N_{Lt} \) = The number of sources of equipment type and service \( t \) with screening values less than 10,000 ppmv as determined according to §98.154(j).

\( p = \) One hour.

\( n = \) Number of hours during the year during which equipment contained HFC–23.

\( t = \) Equipment type and service as specified in Table O–1 of this subpart.

\( 10^{-3} = \) Factor converting kg to metric tons.

(2) The mass of HFC–23 emitted annually from process vents (for use in Equation O–5 of this section) shall be estimated by using Equation O–7 of this section:
\begin{equation}
E_{PV} = \sum_{p=1}^{n} ER_f \left( \frac{PR_p}{PR_T} \right) \times l_p \times 10^{-3} \quad \text{(Eq. O-7)}
\end{equation}

Where:
- $E_{PV}$ = Mass of HFC-23 emitted annually from process vents (metric tons).
- $ER_f$ = The HFC-23 emission rate from the process vents during the period of the most recent test (kg/hr).
- $PR_p$ = The HCFC-22 production rate during the period $p$ (kg/hr).
- $PR_T$ = The HCFC-22 production rate during the most recent test period (kg/hr).
- $l_p$ = The length of the period $p$ (hours).
- $n$ = The number of periods in a year.

(3) The total mass of HFC-23 emitted from destruction devices shall be estimated by using Equation O-8 of this section:

\begin{equation}
E_D = F_D - D_{23} \quad \text{(Eq. O-8)}
\end{equation}

Where:
- $E_D$ = Mass of HFC-23 emitted annually from the destruction device (metric tons).
- $F_D$ = Mass of HFC-23 fed into the destruction device annually (metric tons).
- $D_{23}$ = Mass of HFC-23 destroyed annually (metric tons).

(4) For facilities that destroy HFC-23, the total mass of HFC-23 destroyed shall be estimated by using Equation O-9 of this section:

\begin{equation}
D_{23} = F_D \times DE \quad \text{(Eq. O-9)}
\end{equation}

Where:
- $D_{23}$ = Mass of HFC-23 destroyed annually (metric tons).
- $F_D$ = Mass of HFC-23 fed into the destruction device annually (metric tons).
- $DE$ = Destruction Efficiency of the destruction device (fraction).

§ 98.154 Monitoring and QA/QC requirements.

These requirements apply to measurements that are reported under this subpart or that are used to estimate reported quantities pursuant to § 98.153.

(a) The concentrations (fractions by weight) of HFC-23 and HCFC-22 in the product stream shall be measured at least weekly using equipment and methods (e.g., gas chromatography) with an accuracy and precision of 5 percent or better at the concentrations of the process samples.

(b) The mass flow of the product stream containing the HFC-23 shall be measured at least weekly using weigh scales, flowmeters, or a combination of volumetric and density measurements with an accuracy and precision of 1.0 percent of full scale or better.

(c) The mass of HCFC-22 or HCl coming out of the production process shall be measured at least weekly using weigh scales, flowmeters, or a combination of volumetric and density measurements with an accuracy and precision of 1.0 percent of full scale or better.

(d) The mass of any used HCFC-22 added back into the production process upstream of the output measurement in paragraph (c) of this section shall be measured (when being added) using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of 1.0 percent of full scale or better. If the mass in paragraph (c) of this section is measured by weighing containers that include returned heels as well as newly produced fluorinated GHGs, the returned heels shall be considered used fluorinated HCFC-22 for purposes of this paragraph (d) of this section and § 98.153(b).

(e) The loss factor LF in Equation O-3 of this subpart for the mass of HCFC-22 produced shall have the value 1.015 or another value that can be demonstrated, to the satisfaction of the Administrator, to account for losses of HCFC-22 between the reactor and the point of measurement at the facility where production is being estimated.

(f) The mass of HFC-23 sent off site for sale shall be measured at least weekly (when being packaged) using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of 1.0 percent of full scale or better.

(g) The mass of HFC-23 sent off site for destruction shall be measured at
least weekly (when being packaged) using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of 1.0 percent of full scale or better. If the measured mass includes more than trace concentrations of materials other than HFC–23, the concentration of the fluorinated GHG shall be measured at least weekly using equipment and methods (e.g., gas chromatography) with an accuracy and precision of 5 percent or better at the concentrations of the process samples. This concentration (mass fraction) shall be multiplied by the mass measurement to obtain the mass of the HFC–23 sent to another facility for destruction.

(b) The masses of HFC–23 in storage at the beginning and end of the year shall be measured using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of 1.0 percent of full scale or better.

(i) The number of sources of equipment type t with screening values greater than or equal to 10,000 ppmv shall be determined using EPA Method 21 at 40 CFR part 60, appendix A–7, and defining a leak as follows:

(1) A leak source that could emit HFC–23, and

(2) A leak source at whose surface a concentration of fluorocarbons equal to or greater than 10,000 ppm is measured.

(j) The number of sources of equipment type t with screening values less than 10,000 ppmv shall be the difference between the number of leak sources of equipment type t that could emit HFC–23 and the number of sources of equipment type t with screening values greater than or equal to 10,000 ppmv as determined under paragraph (h) of this section.

(k) The mass of HFC–23 emitted from process vents shall be estimated at least monthly by incorporating the results of the most recent emissions test into Equation O–7 of this subpart. HCFC–22 production facilities that use a destruction device connected to the HCFC–22 production equipment shall conduct emissions tests at process vents at least once every five years or after significant changes to the process. Emissions tests shall be conducted in accordance with EPA Method 18 at 40 CFR part 60, appendix A–6, under conditions that are typical for the production process at the facility. The sensitivity of the tests shall be sufficient to detect an emission rate that would result in annual emissions of 200 kg of HFC–23 if sustained over one year.

(l) For purposes of Equation O–9 of this subpart, the destruction efficiency must be equated to the destruction efficiency determined during a new or previous performance test of the destruction device. HFC–23 destruction facilities shall conduct annual measurements of HFC–23 concentrations at the outlet of the destruction device in accordance with EPA Method 18 at 40 CFR part 60, appendix A–6. Three samples shall be taken under conditions that are typical for the production process and destruction device at the facility, and the average concentration of HFC–23 shall be determined. The sensitivity of the concentration measurement shall be sufficient to detect an outlet concentration equal to or less than the outlet concentration determined in the destruction efficiency performance test. If the concentration measurement indicates that the HFC–23 concentration is less than or equal to that measured during the performance test that is the basis for the destruction efficiency, continue to use the previously determined destruction efficiency. If the concentration measurement indicates that the HFC–23 concentration is greater than that measured during the performance test that is the basis for the destruction efficiency, facilities shall either:

(1) Substitute the higher HFC–23 concentration for that measured during the destruction efficiency performance test and calculate a new destruction efficiency, or

(2) Estimate the mass emissions of HFC–23 from the destruction device based on the measured HFC–23 concentration and volumetric flow rate determined by measurement of volumetric flow rate using EPA Method 2, 2A, 2C, 2D, or 2F at 40 CFR part 60, appendix A–1, or Method 26 at 40 CFR part 60, appendix A–2. Determine the mass rate of HFC–23 into the destruction device by measuring the HFC–23
§ 98.155 Procedures for estimating missing data.

(a) A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable (e.g., if a meter malfunctions during unit operation or if a required process sample is not taken), a substitute data value for the missing parameter shall be used in the calculations, according to the following requirements:

(1) For each missing value of the HFC–23 or HCFC–22 concentration, the substitute data value shall be the arithmetic average of the quality-assured values of that parameter immediately preceding and immediately following the missing data incident. If, for a particular parameter, no quality-assured data are available prior to the missing data incident, the substitute data value shall be the first quality-assured value obtained after the missing data period.

(2) For each missing value of the product stream mass flow or product mass, the substitute value of that parameter shall be a secondary product measurement where such a measurement is available. If that measurement is taken significantly downstream of the usual mass flow or mass measurement (e.g., at the shipping dock rather than near the reactor), the measurement shall be multiplied by 1.015 to compensate for losses. Where a secondary mass measurement is not available, the substitute value of the parameter shall be an estimate based on a related parameter. For example, if a flowmeter measuring the mass fed into a destruction device is rendered inoperable, then the mass fed into the destruction device may be estimated at least monthly through analysis of certified standards (or of calibration gases prepared from a high-concentration certified standard using a gas dilution system that meets the requirements specified in Method 205 at 40 CFR part 51, appendix M) with known HFC–23 concentrations that are in the same range (fractions by mass) as the process samples.

using the production rate and the previously observed relationship between
the production rate and the mass flow
rate into the destruction device.

§ 98.156 Data reporting requirements.

(a) In addition to the information re-
quired by § 98.3(c), the HCFC–22 produc-
tion facility shall report the following
information at the facility level:
(1) Annual mass of HCFC–22 produced
in metric tons.
(2) Loss Factor used to account for
the loss of HCFC–22 upstream of the
measurement.
(3) Annual mass of reactants fed into
the process in metric tons of reactant.
(4) The mass (in metric tons) of mate-
rials other than HCFC–22 and HFC–23
(i.e., unreacted reactants, HCl and
other by-products) that occur in more
than trace concentrations and that are
permanently removed from the process.
(5) The method for tracking startups,
shutdowns, and malfunctions and HFC–
23 generation/emissions during these
events.
(6) The names and addresses of facili-
ties to which any HFC–23 was sent for
destruction, and the quantities of HFC–
23 (metric tons) sent to each.
(7) Annual mass of the HFC–23 gen-
erated in metric tons.
(8) Annual mass of any HFC–23 sent
off site for sale in metric tons.
(9) Annual mass of any HFC–23 sent
off site for destruction in metric tons.
(10) Mass of HFC–23 in storage at the
beginning and end of the year, in met-
ric tons.
(11) Annual mass of HFC–23 emitted
in metric tons.
(12) Annual mass of HFC–23 emitted
from equipment leaks in metric tons.
(13) Annual mass of HFC–23 emitted
from process vents in metric tons.
(b) In addition to the information re-
quired by § 98.3(c), facilities that de-
stroy HFC–23 shall report the following
for each HFC–23 destruction process:
(1) Annual mass of HFC–23 fed into
the destruction device.
(2) Annual mass of HFC–23 destroyed.
(3) Annual mass of HFC–23 emitted
from the destruction device.
(c) Each HFC–23 destruction facility
shall report the concentration (mass
fraction) of HFC–23 measured at the
outlet of the destruction device during
the facility’s annual HFC–23 concentra-
tion measurements at the outlet of the
device.
(d) If the HFC–23 concentration meas-
ured pursuant to § 98.154(1) is greater
than that measured during the per-
formance test that is the basis for the
destruction efficiency (DE), the facility
shall report the revised destruction ef-
ciciency calculated under § 98.154(1) and
the values used to calculate it, speci-
yfying whether § 98.154(1)(1) or
§ 98.154(1)(2) has been used for the cal-
culation. Specifically, the facility shall
report the following:
(1) Flow rate of HFC–23 being fed into
the destruction device in kg/hr.
(2) Concentration (mass fraction) of
HFC–23 at the outlet of the destruc-
tion device.
(3) Flow rate at the outlet of the de-
struction device in kg/hr.
(4) Emission rate (in kg/hr) cal-
culated from paragraphs (d)(2) and
(d)(3) of this section.
(5) Destruction efficiency (DE) cal-
culated from paragraphs (d)(1) and
(d)(4) of this section.
(e) By March 31, 2011 or within 60
days of commencing HFC–23 destruc-
tion, HFC–23 destruction facilities
shall submit a one-time report includ-
ning the following information for each
destruction process:
(1) Destruction efficiency (DE).
(2) The methods used to determine
destruction efficiency.
(3) The methods used to record the
mass of HFC–23 destroyed.
(4) The name of other relevant fed-
eral or state regulations that may
apply to the destruction process.
(5) If any changes are made that af-
flect HFC–23 destruction efficiency or
the methods used to record volume de-
stroyed, then these changes must be re-
flected in a revision to this report. The
revised report must be submitted to
EPA within 60 days of the change.

[74 FR 56374, Oct. 30, 2009, as amended at 75
FR 66463, Oct. 28, 2010]

§ 98.157 Records that must be re-
tained.

(a) In addition to the data required
by § 98.3(g), HCFC–22 production facili-
ties shall retain the following records:
(1) The data used to estimate HFC–23
emissions.
(2) Records documenting the initial and periodic calibration of the gas chromatographs, weigh scales, volumetric and density measurements, and flowmeters used to measure the quantities reported under this rule, including the industry standards or manufacturer directions used for calibration pursuant to §98.154(p) and (q).

(b) In addition to the data required by §98.3(g), the HFC–23 destruction facilities shall retain the following records:

(1) Records documenting their one-time and annual reports in §98.156(b) through (e).

(2) Records documenting the initial and periodic calibration of the gas chromatographs, weigh scales, volumetric and density measurements, and flowmeters used to measure the quantities reported under this subpart, including the industry standard practice or manufacturer directions used for calibration pursuant to §98.154(p) and (q).


§ 98.158 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Table O–1 to Subpart O of Part 98—Emission Factors for Equipment Leaks

<table>
<thead>
<tr>
<th>Equipment type</th>
<th>Service</th>
<th>Emission factor (kg/hr/source)</th>
<th>≥10,000 ppmv</th>
<th>&lt;10,000 ppmv</th>
</tr>
</thead>
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<td>Valves</td>
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<td>0.0782</td>
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<td></td>
<td>0.0852</td>
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<td>Light liquid</td>
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<td>Gas</td>
<td></td>
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<td>0.0894</td>
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<td>Gas</td>
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<td>Open-ended lines</td>
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<td>0.00150</td>
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</tbody>
</table>

Subpart P—Hydrogen Production

§ 98.160 Definition of the source category.

(a) A hydrogen production source category consists of facilities that produce hydrogen gas sold as a product to other entities.

(b) This source category comprises process units that produce hydrogen by reforming, gasification, oxidation, reaction, or other transformations of feedstocks.

(c) This source category includes merchant hydrogen production facilities located within another facility if they are not owned by, or under the direct control of, the other facility’s owner and operator.


§ 98.161 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a hydrogen production process and the facility meets the requirements of either §98.2(a)(1) or (a)(2).

§ 98.162 GHGs to report.

You must report:

(a) CO₂ emissions from each hydrogen production process unit.

(b) [Reserved]

(c) CO₂, CH₄, and N₂O emissions from each stationary combustion unit other than hydrogen production process units. You must calculate and report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.

(d) For CO₂ collected and transferred off site, you must follow the requirements of subpart PP of this part.

§ 98.163 Calculating GHG emissions.

You must calculate and report the annual CO₂ emissions from each hydrogen production process unit using the procedures specified in either paragraph (a) or (b) of this section.

(a) Continuous Emissions Monitoring Systems (CEMS). Calculate and report under this subpart the CO₂ emissions by operating and maintaining CEMS according to the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(b) Fuel and feedstock material balance approach. Calculate and report CO₂ emissions as the sum of the annual emissions associated with each fuel and feedstock used for hydrogen production by following paragraphs (b)(1) through (b)(3) of this section.

(1) Gaseous fuel and feedstock. You must calculate the annual CO₂ emissions from each gaseous fuel and feedstock according to Equation P-1 of this section:

\[
CO₂ = \left( \sum_{n=1}^{k} \frac{44}{12} \cdot \text{Fdstk}_n \cdot \text{CC}_n \cdot \frac{\text{MW}}{\text{MVC}} \right) \cdot 0.001 \quad (\text{Eq. P-1})
\]

* Where:
  * \(CO₂\) = Annual CO₂ process emissions arising from fuel and feedstock consumption (metric tons/yr).
  * \(\text{Fdstk}_n\) = Volume of the gaseous fuel and feedstock used in month \(n\) (scf [at standard conditions of 68 °F and atmospheric pressure]) of fuel and feedstock.
  * \(\text{CC}_n\) = Average carbon content of the gaseous fuel and feedstock, from the results of one or more analyses for month \(n\) (kg carbon per kg of fuel and feedstock). If measurements are taken more frequently than monthly, use the arithmetic average of measurement values within the month to calculate a monthly average.
  * \(\text{MW}_n\) = Average molecular weight of the gaseous fuel and feedstock from the results of one or more analyses for month \(n\) (kg/kg-mole).
  * \(\text{MVC}\) = Molar volume conversion factor (849.5 scf per kg-mole at standard conditions).
  * \(k\) = Months in the year.
  * \(\frac{44}{12}\) = Ratio of molecular weights, CO₂ to carbon.
  * 0.001 = Conversion factor from kg to metric tons.

(2) Liquid fuel and feedstock. You must calculate the annual CO₂ emissions from each liquid fuel and feedstock according to Equation P-2 of this section:

\[
CO₂ = \left( \sum_{n=1}^{k} \frac{44}{12} \cdot \text{Fdstk}_n \cdot \text{CC}_n \right) \cdot 0.001 \quad (\text{Eq. P-2})
\]

* Where:
  * \(CO₂\) = Annual CO₂ emissions arising from fuel and feedstock consumption (metric tons/yr).
  * \(\text{Fdstk}_n\) = Volume of the liquid fuel and feedstock used in month \(n\) (gallons of fuel and feedstock).
  * \(\text{CC}_n\) = Average carbon content of the liquid fuel and feedstock, from the results of one or more analyses for month \(n\) (kg carbon per gallon of fuel and feedstock).
  * \(k\) = Months in the year.
  * \(\frac{44}{12}\) = Ratio of molecular weights, CO₂ to carbon.
  * 0.001 = Conversion factor from kg to metric tons.

(3) Solid fuel and feedstock. You must calculate the annual CO₂ emissions from each solid fuel and feedstock according to Equation P-3 of this section:
CO₂ = \left( \sum_{n=1}^{k} \frac{44}{12} \cdot F_{dstk_n} \cdot CC_n \right) \cdot 0.001 \quad \text{(Eq. P-3)}

Where:

CO₂ = \text{Annual CO₂ emissions from fuel and feedstock consumption in metric tons per month (metric tons/yr).}

F_{dstk} = \text{Mass of solid fuel and feedstock used in month } n \text{ (kg of fuel and feedstock).}

CC_n = \text{Average carbon content of the solid fuel and feedstock, from the results of one or more analyses for month } n \text{ (kg carbon per kg of fuel and feedstock).}

k = \text{Months in the year.}

\frac{44}{12} = \text{Ratio of molecular weights, CO₂ to carbon.}

0.001 = \text{Conversion factor from kg to metric tons.}

(c) If GHG emissions from a hydrogen production process unit are vented through the same stack as any combustion unit or process equipment that reports CO₂ emissions using a CEMS that complies with the Tier 4 Calculation Methodology in subpart C of this part (General Stationary Fuel Combustion Sources), then the calculation methodology in paragraph (b) of this section shall not be used to calculate process emissions. The owner or operator shall report under this subpart the combined stack emissions according to the Tier 4 Calculation Methodology in §98.3(b)(1). Perform oil tank drop measurements (if used to quantify liquid fuel or feedstock consumption) according to §98.34(b)(2). Calibrate all solids weighing equipment according to the procedures in §98.3(i).

(2) Determine the carbon content and the molecular weight annually of standard gaseous hydrocarbon fuels and feedstocks having consistent composition (e.g., natural gas). For other gaseous fuels and feedstocks (e.g., biogas, refinery gas, or process gas), sample and analyze no less frequently than weekly to determine the carbon content and molecular weight of the fuel and feedstock.

(3) Determine the carbon content of coal, coke, and other solid fuels and feedstocks at least monthly, except annually for standard solid hydrocarbon fuels and feedstocks having consistent composition, or upon delivery for solid fuels delivered by bulk transport (e.g., by truck or rail).

(4) Determine the carbon content of fuel oil, naphtha, and other liquid fuels and feedstocks at least monthly, except annually for standard liquid hydrocarbon fuels and feedstocks having consistent composition, or upon delivery for liquid fuels delivered by bulk transport (e.g., by truck or rail).

(5) You must use the following applicable methods to determine the carbon content for all fuels and feedstocks, and molecular weight of gaseous fuels and feedstocks. Alternatively, you may use the results of continuous chromatographic analysis of the fuel and feedstock, provided that the gas chromatograph (GC) is operated, maintained, and calibrated according to the manufacturer’s instructions; and the methods used for operation, maintenance, and calibration of the GC are documented in the written monitoring plan for the unit under §98.3(g)(5).
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(i) ASTM D1945–03 Standard Test Method for Analysis of Natural Gas by Gas Chromatography (incorporated by reference, see §98.7).

(ii) ASTM D1946–90 (Reapproved 2006), Standard Practice for Analysis of Reformed Gas by Gas Chromatography (incorporated by reference, see §98.7).

(iii) ASTM D2013–07 Standard Practice of Preparing Coal Samples for Analysis (incorporated by reference, see §98.7).

(iv) ASTM D2234/D2234M–07 Standard Practice for Collection of a Gross Sample of Coal (incorporated by reference, see §98.7).


(vi) ASTM D3176–89 (Reapproved 2002), Standard Practice for Ultimate Analysis of Coal and Coke (incorporated by reference, see §98.7).


(xi) ASTM D5373–08 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, see §98.7).

(xii) ASTM D6609–08 Standard Guide for Part-Stream Sampling of Coal (incorporated by reference, see §98.7).

(xiii) ASTM D6883–04 Standard Practice for Manual Sampling of Stationary Coal from Railroad Cars, Barges, Trucks, or Stockpiles (incorporated by reference, see §98.7).

(xiv) ASTM D7430–08 Standard Practice for Mechanical Sampling of Coal (incorporated by reference, see §98.7).

(xv) ASTM UOP539–97 Refinery Gas Analysis by Gas Chromatography (incorporated by reference, see §98.7).

(xvi) GPA 2261–00 Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography (incorporated by reference, see §98.7).


(c) For units using the calculation methodologies described in this section, the records required under §98.3(g) must include both the company records and a detailed explanation of how company records are used to estimate the following:

(1) Fuel and feedstock consumption, when solid fuel and feedstock is combusted and a CEMS is not used to measure GHG emissions.

(2) Fossil fuel consumption, when, pursuant to §98.33(e), the owner or operator of a unit that uses CEMS to quantify CO\textsubscript{2} emissions and that combuts both fossil and biogenic fuels separately reports the biogenic portion of the total annual CO\textsubscript{2} emissions.

(3) Sorbent usage, if the methodology in §98.33(d) is used to calculate CO\textsubscript{2} emissions from sorbent.

(d) The owner or operator must document the procedures used to ensure the accuracy of the estimates of fuel and feedstock usage and sorbent usage (as applicable) in paragraph (b) of this section, including, but not limited to, calibration of weighing equipment, fuel and feedstock flow meters, and other measurement devices. The estimated accuracy of measurements made with these devices must also be recorded, and the technical basis for these estimates must be provided. 

§ 98.165 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable (e.g., if a meter malfunctions during unit operation), a substitute data value for the missing parameter must be used in the calculations as specified in paragraphs (a), (b), and (c) of this section:

(a) For each missing value of the monthly fuel and feedstock consumption, the substitute data value must be the best available estimate of the fuel and feedstock consumption, based on all available process data (e.g., hydrogen production, electrical load, and operating hours). You must document and keep records of the procedures used for all such estimates.

(b) For each missing value of the carbon content or molecular weight of the fuel and feedstock, the substitute data value must be the arithmetic average of the quality-assured values of carbon contents or molecular weight of the fuel and feedstock immediately preceding and immediately following the missing data incident. If no quality-assured data on carbon contents or molecular weight of the fuel and feedstock are available prior to the missing data incident, the substitute data value must be the first quality-assured value for carbon contents or molecular weight of the fuel and feedstock obtained after the missing data period. You must document and keep records of the procedures used for all such estimates.

(c) For missing CEMS data, you must use the missing data procedures in §98.35.

§ 98.166 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) or (b) of this section, as appropriate, and paragraphs (c) and (d) of this section:

(a) If a CEMS is used to measure CO₂ emissions, then you must report the relevant information required under §98.36 for the Tier 4 Calculation Methodology and the following information in this paragraph (a):

1. Unit identification number and annual CO₂ emissions.
2. Annual quantity of hydrogen produced (metric tons) for each process unit and for all units combined.
3. Annual quantity of ammonia produced (metric tons), if applicable, for each process unit and for all units combined.

(b) If a CEMS is not used to measure CO₂ emissions, then you must report the following information for each hydrogen production process unit:

1. Unit identification number and annual CO₂ emissions.
2. Monthly consumption of each fuel and feedstock used for hydrogen production and its type (scf of gaseous fuels and feedstocks, gallons of liquid fuels and feedstocks, kg of solid fuels and feedstocks).
3. Annual quantity of hydrogen produced (metric tons).
4. Annual quantity of ammonia produced, if applicable (metric tons).
5. Monthly analyses of carbon content for each fuel and feedstock used in hydrogen production (kg carbon/kg of gaseous and solid fuels and feedstocks, kg carbon per gallon of liquid fuels and feedstocks).
6. Monthly analyses of the molecular weight of gaseous fuels and feedstocks (kg/kg-mole) used, if any.
7. Quantity of CO₂ collected and transferred off site in either gas, liquid, or solid forms, following the requirements of subpart PP of this part.
8. Annual quantity of carbon other than CO₂ collected and transferred off site in either gas, liquid, or solid forms (kg carbon).

§ 98.167 Records that must be retained.

In addition to the information required by §98.3(g), you must retain the records specified in paragraphs (a) through (b) of this section for each hydrogen production facility:

(a) If a CEMS is used to measure CO₂ emissions, then you must retain under this subpart the records required for the Tier 4 Calculation Methodology in §98.37.

(b) If a CEMS is not used to measure CO₂ emissions, then you must retain...

records of all analyses and calculations conducted as listed in §§98.166(b), (c), and (d).

§ 98.168 Definitions.
All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart Q—Iron and Steel Production

§ 98.170 Definition of the source category.
The iron and steel production source category includes facilities with any of the following processes: taconite iron ore processing, integrated iron and steel manufacturing, cokemaking not colocated with an integrated iron and steel manufacturing process, and electric arc furnace (EAF) steelmaking not colocated with an integrated iron and steel manufacturing process. Integrated iron and steel manufacturing means the production of steel from iron ore or iron ore pellets. At a minimum, an integrated iron and steel manufacturing process has a basic oxygen furnace for refining molten iron into steel. Each cokemaking process and EAF process located at a facility with an integrated iron and steel manufacturing process is part of the integrated iron and steel manufacturing facility.

§ 98.171 Reporting threshold.
You must report GHG emissions under this subpart if your facility contains an iron and steel production process and the facility meets the requirements of either §98.2(a)(1) or (2).

§ 98.172 GHGs to report.
(a) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of \( \text{CO}_2 \), \( \text{CH}_4 \), and \( \text{N}_2\text{O} \) from each stationary combustion unit following the requirements of subpart C except for flares. Stationary combustion units include, but are not limited to, by-product recovery coke oven battery combustion stacks, blast furnace stoves, boilers, process heaters, reheating furnaces, annealing furnaces, flame suppression, ladle reheat furnaces, and other miscellaneous combustion sources.

(b) You must report \( \text{CO}_2 \) emissions from flares that burn blast furnace gas or coke oven gas according to the procedures in §98.253(b)(1) of subpart Y (Petroleum Refineries) of this part. When using the alternatives set forth in §98.253(b)(1)(i)(B) and §98.253(b)(1)(ii)(C), you must use the default \( \text{CO}_2 \) emission factors for coke oven gas and blast furnace gas from Table C–1 to subpart C in Equations Y–2 and Y–3 of subpart Y. You must report \( \text{CH}_4 \) and \( \text{N}_2\text{O} \) emissions from flares according to the requirements in §98.33(c)(2) using the emission factors for coke oven gas and blast furnace gas in Table C–2 to subpart C of this part.

(c) You must report process \( \text{CO}_2 \) emissions from each taconite indurating furnace; basic oxygen furnace; non-recovery coke oven battery combustion stack; coke pushing process; sinter process; EAF; decarburization vessel; and direct reduction furnace by following the procedures in this subpart.


§ 98.173 Calculating GHG emissions.
You must calculate and report the annual process \( \text{CO}_2 \) emissions from each taconite indurating furnace, basic oxygen furnace, non-recovery coke oven battery, sinter process, EAF, decarburization vessel, and direct reduction furnace using the procedures in either paragraph (a) or (b) of this section. Calculate and report the annual process \( \text{CO}_2 \) emissions from the coke pushing process according to paragraph (c) of this section.

(a) Calculate and report under this subpart the process \( \text{CO}_2 \) emissions by operating and maintaining CEMS according to the Tier 4 Calculation Methodology in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(b) Calculate and report under this subpart the process \( \text{CO}_2 \) emissions using the procedure in paragraph (b)(1) or (b)(2) of this section.

(1) Carbon mass balance method. Calculate the annual mass emissions of \( \text{CO}_2 \) for the process as specified in paragraphs (b)(1)(i) through (b)(1)(vii) of this section. The calculations are based
on the annual mass of inputs and outputs to the process and an annual analysis of the respective weight fraction of carbon as determined according to the procedures in §98.174(b). If you have a process input or output other than CO₂ in the exhaust gas that contains carbon that is not included in Equations Q-1 through Q-7 of this section, you must account for the carbon and mass rate of that process input or output in your calculations according to the procedures in §98.174(b)(5).

(i) For taconite indurating furnaces, estimate CO₂ emissions using Equation Q-1 of this section.

\[
\text{CO}_2 = \frac{44}{12} \left[ (F_s) \times (C_{sf}) \times (MW) \times 0.001 + (F_g) \times (C_{gf}) \times 0.001 + (O) \times (C_0) \times (R) \times (C_R) \right]
\] (Eq. Q-1)

Where:
- \( \text{CO}_2 \) = Annual CO₂ mass emissions from the taconite indurating furnace (metric tons).
- \( 44/12 \) = Ratio of molecular weights, CO₂ to carbon.
- \( (F_s) \) = Annual mass of the solid fuel combusted (metric tons).
- \( (C_{sf}) \) = Carbon content of the solid fuel, from the fuel analysis (percent by weight, expressed as a decimal fraction, e.g., 95% = 0.95).
- \( (F_g) \) = Annual volume of the gaseous fuel combusted (scf).
- \( (C_{gf}) \) = Average carbon content of the gaseous fuel, from the fuel analysis results (percent by weight, expressed as a decimal fraction).
- \( (O) \) = Annual mass of greenball (taconite) pellets fed to the furnace (metric tons).
- \( (C_0) \) = Carbon content of the greenball (taconite) pellets, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \( (R) \) = Annual mass of air pollution control residue collected (metric tons).
- \( (C_R) \) = Carbon content of the air pollution control residue, from the carbon analysis results (percent by weight, expressed as a decimal fraction).

(ii) For basic oxygen process furnaces, estimate CO₂ emissions using Equation Q-2 of this section.

\[
\text{CO}_2 = \frac{44}{12} \left[ (\text{Iron}) \times (C_{\text{Iron}}) + (\text{Scrap}) \times (C_{\text{Scrap}}) + (\text{Flux}) \times (C_{\text{Flux}}) + (\text{Carbon}) \times (C_{\text{Carbon}}) - (\text{Steel}) \times (C_{\text{Steel}}) - (\text{Slag}) \times (C_{\text{Slag}}) - (R) \times (C_R) \right]
\] (Eq. Q-2)

Where:
- \( \text{CO}_2 \) = Annual CO₂ mass emissions from the basic oxygen furnace (metric tons).
- \( 44/12 \) = Ratio of molecular weights, CO₂ to carbon.
- \( (\text{Iron}) \) = Annual mass of molten iron charged to the furnace (metric tons).
- \( (C_{\text{Iron}}) \) = Carbon content of the molten iron, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \( (\text{Scrap}) \) = Annual mass of ferrous scrap charged to the furnace (metric tons).
- \( (C_{\text{Scrap}}) \) = Carbon content of the ferrous scrap, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \( (\text{Flux}) \) = Annual mass of flux materials (e.g., limestone, dolomite) charged to the furnace (metric tons).
- \( (C_{\text{Flux}}) \) = Carbon content of the flux materials, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \( (\text{Carbon}) \) = Annual mass of carbonaceous materials (e.g., coal, coke) charged to the furnace (metric tons).
- \( (C_{\text{Carbon}}) \) = Carbon content of the carbonaceous materials, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
(Ccarbon) = Carbon content of the carbonaceous materials, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
(Steel) = Annual mass of molten raw steel produced by the furnace (metric tons).
(Csteel) = Carbon content of the steel, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
(Slag) = Annual mass of slag produced by the furnace (metric tons).
(Cslag) = Carbon content of the slag, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
(R) = Annual mass of air pollution control residue collected (metric tons).
(CR) = Carbon content of the air pollution control residue, from the carbon analysis results (percent by weight, expressed as a decimal fraction).

(iii) For non-recovery coke oven batteries, estimate CO\textsubscript{2} emissions using Equation Q–3 of this section.

\[
CO_2 = \frac{44}{12} \times [(\text{Coal}) \times (C_{\text{Coal}}) - (\text{Coke}) \times (C_{\text{Coke}}) - (R) \times (CR)] \quad \text{(Eq. Q-3)}
\]

Where:
- CO\textsubscript{2} = Annual CO\textsubscript{2} mass emissions from the non-recovery coke oven battery (metric tons).
- 44/12 = Ratio of molecular weights, CO\textsubscript{2} to carbon.
- (Coal) = Annual mass of coal charged to the battery (metric tons).
- (C\textsubscript{Coal}) = Carbon content of the coal, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- (Coke) = Annual mass of coke produced by the battery (metric tons).
- (C\textsubscript{Coke}) = Carbon content of the coke, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- (R) = Annual mass of air pollution control residue collected (metric tons).
- (CR) = Carbon content of the air pollution control residue, from the carbon analysis results (percent by weight, expressed as a decimal fraction).

(iv) For sinter processes, estimate CO\textsubscript{2} emissions using Equation Q–4 of this section.

\[
CO_2 = \frac{44}{12} \times \left[ (F_g) \times (C_{gf}) \times \frac{MW}{MVC} \times 0.001 \times (\text{Feed}) \times (C_{\text{Feed}}) - (\text{Sinter}) \times (C_{\text{Sinter}}) - (R) \times (CR) \right] \quad \text{(Eq. Q-4)}
\]

Where:
- CO\textsubscript{2} = Annual CO\textsubscript{2} mass emissions from the sinter process (metric tons).
- 44/12 = Ratio of molecular weights, CO\textsubscript{2} to carbon.
- (F\textsubscript{g}) = Annual volume of the gaseous fuel combusted (scf).
- (C\textsubscript{gf}) = Carbon content of the gaseous fuel, from the fuel analysis results (kg C per kg of fuel).
- MW = Molecular weight of the gaseous fuel (kg/kg-mole).
- MVC = Molar volume conversion factor (849.5 scf per kg-mole at standard conditions).
- 0.001 = Conversion factor from kg to metric tons.
- (Feed) = Annual mass of sinter feed material (metric tons).
- (C\textsubscript{Feed}) = Carbon content of the mixed sinter feed materials that form the bed entering the sintering machine, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- (Sinter) = Annual mass of sinter produced (metric tons).
- (C\textsubscript{Sinter}) = Carbon content of the sinter pellets, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- (R) = Annual mass of air pollution control residue collected (metric tons).
- (C\textsubscript{R}) = Carbon content of the air pollution control residue, from the carbon analysis results (percent by weight, expressed as a decimal fraction).

(v) For EAFs, estimate CO\textsubscript{2} emissions using Equation Q–5 of this section.
\[
\begin{align*}
\text{CO}_2 &= \frac{44}{12} \times \left[ (\text{Iron}) \times (C_{\text{Iron}}) + (\text{Scrap}) \times (C_{\text{Scrap}}) + (\text{Flux}) \times (C_{\text{Flux}}) + (\text{Electrode}) \times (C_{\text{Electrode}}) + (\text{Carbon}) \times (C_{\text{Carbon}}) - (\text{Steel}) \times (C_{\text{Steel}}) - (\text{Slag}) \times (C_{\text{Slag}}) - (R) \times (C_{R}) \right] \\
\text{Equation Q-5}
\end{align*}
\]

Where:
- \(\text{CO}_2\) = Annual \(\text{CO}_2\) mass emissions from the EAF (metric tons).
- \(\frac{44}{12}\) = Ratio of molecular weights, \(\text{CO}_2\) to carbon.
- \(\text{Iron}\) = Annual mass of direct reduced iron (if any) charged to the furnace (metric tons).
- \(C_{\text{Iron}}\) = Carbon content of the direct reduced iron, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \(\text{Scrap}\) = Annual mass of ferrous scrap charged to the furnace (metric tons).
- \(C_{\text{Scrap}}\) = Carbon content of the ferrous scrap, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \(\text{Flux}\) = Annual mass of flux materials (e.g., limestone, dolomite) charged to the furnace (metric tons).
- \(C_{\text{Flux}}\) = Carbon content of the flux materials, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \(\text{Electrode}\) = Annual mass of carbon electrode consumed (metric tons).
- \(C_{\text{Electrode}}\) = Carbon content of the carbon electrode, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \(\text{Carbon}\) = Annual mass of carbonaceous materials (e.g., coal, coke) charged to the furnace (metric tons).
- \(C_{\text{Carbon}}\) = Carbon content of the carbonaceous materials, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \(\text{Steel}\) = Annual mass of molten raw steel produced by the furnace (metric tons).
- \(C_{\text{Steel}}\) = Carbon content of the steel, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \(\text{Slag}\) = Annual mass of slag produced by the furnace (metric tons).
- \(C_{\text{Slag}}\) = Carbon content of the slag, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \(R\) = Annual mass of air pollution control residue collected (metric tons).
- \(C_{R}\) = Carbon content of the air pollution control residue, from the carbon analysis results (percent by weight, expressed as a decimal fraction).

(iii) For decarburization vessels, estimate \(\text{CO}_2\) emissions using Equation Q-6 of this section.

\[
\begin{align*}
\text{CO}_2 &= \frac{44}{12} \times \left( \text{Steel} \times \left[ (C_{\text{SteelIn}}) - (C_{\text{SteelOut}}) \right] - (R) \times (C_{R}) \right) \\
\text{Equation Q-6}
\end{align*}
\]

Where:
- \(\text{CO}_2\) = Annual \(\text{CO}_2\) mass emissions from the decarburization vessel (metric tons).
- \(\frac{44}{12}\) = Ratio of molecular weights, \(\text{CO}_2\) to carbon.
- \(\text{Steel}\) = Annual mass of molten steel charged to the vessel (metric tons).
- \(C_{\text{SteelIn}}\) = Carbon content of the molten steel before decarburization, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \(C_{\text{SteelOut}}\) = Carbon content of the molten steel after decarburization, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \(R\) = Annual mass of air pollution control residue collected (metric tons).
- \(C_{R}\) = Carbon content of the air pollution control residue, from the carbon analysis results (percent by weight, expressed as a decimal fraction).

(vii) For direct reduction furnaces, estimate \(\text{CO}_2\) emissions using Equation Q-7 of this section.
\[ CO_2 = \frac{44}{12} \left[ (F_g) \cdot (C_{gf}) \cdot \frac{MW}{MVC} \cdot 0.001 + (Ore) \cdot (C_{Ore}) + (Carbon) \cdot (C_{Carbon}) + (Other) \cdot (C_{Other}) - (Iron) \cdot (C_{Iron}) - (NM) \cdot (C_{NM}) - (R) \cdot (C_R) \right] \]  

Where:

- \( CO_2 \) = Annual \( CO_2 \) mass emissions from the direct reduction furnace (metric tons).
- \( 44/12 \) = Ratio of molecular weights, \( CO_2 \) to carbon.
- \( (F_g) \) = Annual volume of the gaseous fuel combusted (scf).
- \( (C_{gf}) \) = Carbon content of the gaseous fuel, from the fuel analysis results (kg C per kg of fuel).
- \( MW \) = Molecular weight of the gaseous fuel (kg/kg-mole).
- \( MVC \) = Molar volume conversion factor (849.5 scf per kg-mole at standard conditions).
- \( 0.001 \) = Conversion factor from kg to metric tons.
- \( (Ore) \) = Annual mass of iron ore or iron ore pellets fed to the furnace (metric tons).
- \( (C_{Ore}) \) = Carbon content of the iron ore or iron ore pellets, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \( (Carbon) \) = Annual mass of carbonaceous materials (e.g., coal, coke) charged to the furnace (metric tons).
- \( (C_{Carbon}) \) = Carbon content of the carbonaceous materials, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \( (Other) \) = Annual mass of other materials charged to the furnace (metric tons).
- \( (C_{Other}) \) = Average carbon content of the other materials charged to the furnace, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \( (Iron) \) = Annual mass of iron produced (metric tons).
- \( (C_{Iron}) \) = Carbon content of the iron, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \( (NM) \) = Annual mass of non-metallic materials produced by the furnace (metric tons).
- \( (C_{NM}) \) = Carbon content of the non-metallic materials, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \( (R) \) = Annual mass of air pollution control residue collected (metric tons).
- \( (C_R) \) = Carbon content of the air pollution control residue, from the carbon analysis results (percent by weight, expressed as a decimal fraction).

(2) Site-specific emission factor method. Conduct a performance test and measure \( CO_2 \) emissions from all exhaust stacks for the process and measure either the feed rate of materials into the process or the production rate during the test as described in paragraphs (b)(2)(i) through (b)(2)(iv) of this section.

(1) You must measure the process production rate or process feed rate, as applicable, during the performance test according to the procedures in §98.174(c)(5) and calculate the average rate for the test period in metric tons per hour.

(ii) You must calculate the hourly \( CO_2 \) emission rate using Equation Q-8 of this section and determine the average hourly \( CO_2 \) emission rate for the test.

\[ CO_2 = 5.18 \times 10^{-7} \times C_{CO2} \times Q \times \left(\frac{100 - \% H_2O}{100}\right) \]  

Where:

- \( CO_2 \) = \( CO_2 \) mass emission rate, corrected for moisture (metric tons/hr).
- \( 5.18 \times 10^{-7} \) = Conversion factor (metric tons/scf-% \( CO_2 \)).
- \( C_{CO2} \) = Hourly \( CO_2 \) concentration, dry basis (% \( CO_2 \)).
- \( Q \) = Hourly stack gas volumetric flow rate (scfh).
\( \% \text{H}_2 \text{O} = \text{Hourly moisture percentage in the stack gas.} \)

(iii) You must calculate a site-specific emission factor for the process in metric tons of \( \text{CO}_2 \) per metric ton of feed or production, as applicable, by dividing the average hourly \( \text{CO}_2 \) emission rate during the test by the average hourly feed or production rate during the test.

(iv) You must calculate \( \text{CO}_2 \) emissions for the process by multiplying the emission factor by the total amount of feed or production, as applicable, for the reporting period.

(c) You must determine emissions of \( \text{CO}_2 \) from the coke pushing process in \( \text{mtCO}_2 \) by multiplying the metric tons of coal charged to the coke ovens during the reporting period by 0.008.

(d) If GHG emissions from a taconite indurating furnace, basic oxygen furnace, non-recovery coke oven battery, sinter process, EAF, decarburization vessel, or direct reduction furnace are vented through the same stack as any combustion unit or process equipment that reports \( \text{CO}_2 \) emissions using a CEMS that complies with the Tier 4 Calculation Methodology in subpart C of this part (General Stationary Fuel Combustion Sources), then the calculation methodology in paragraph (b) of this section shall not be used to calculate process emissions. The owner or operator shall report under this subpart the combined stack emissions according to the Tier 4 Calculation Methodology in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).


§ 98.174 Monitoring and QA/QC requirements.

(a) If you operate and maintain a CEMS that measures \( \text{CO}_2 \) emissions consistent with subpart C of this part, you must meet the monitoring and QA/QC requirements of §98.34(c).

(b) If you determine \( \text{CO}_2 \) emissions using the carbon mass balance procedure in §98.173(b)(1), you must:

(1) Except as provided in paragraph (b)(4) of this section, determine the mass of each process input and output other than fuels using the same plant instruments or procedures that are used for accounting purposes (such as weigh hoppers, belt weigh feeders, weighed purchased quantities in shipments or containers, combination of bulk density and volume measurements, etc.), record the totals for each process input and output for each calendar month, and sum the monthly mass to determine the annual mass for each process input and output. Determine the mass rate of fuels using the procedures for combustion units in §98.34.

(2) Except as provided in paragraph (b)(4) of this section, determine the carbon content of each process input and output annually for use in the applicable equations in §98.173(b)(1) based on analyses provided by the supplier or by the average carbon content determined by collecting and analyzing at least three samples each year using the standard methods specified in paragraphs (b)(2)(i) through (b)(2)(vi) of this section as applicable.

(i) ASTM C25–06, Standard Test Methods for Chemical Analysis of Limestone, Quicklime, and Hydrated Lime (incorporated by reference, see §98.7) for limestone, dolomite, and slag.

(ii) ASTM D5373–08 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, see §98.7) for coal, coke, and other carbonaceous materials.

(iii) ASTM E1915–07a, Standard Test Methods for Analysis of Metal Bearing Ores and Related Materials by Combustion Infrared-Absorption Spectrometry (incorporated by reference, see §98.7) for iron ore, taconite pellets, and other iron-bearing materials.


(v) ASM CS–104 UNS No. G10460—Alloy Digest April 1985 (Carbon Steel of Medium Carbon Content) (incorporated by reference, see §98.7); ISO/TR 15349–1:1998, Unalloyed steel—Determination of low carbon content. Part 1: Infrared absorption method after combustion in

(vi) For each process input that is a fuel, determine the carbon content and molecular weight (if applicable) using the applicable methods listed in § 98.34.

(3) For solid ferrous materials charged to basic oxygen process furnaces or EAFs that differ in carbon content, you may determine a weighted average carbon content based on the carbon content of each type of ferrous material and the average weight percent of each type that is used. Examples of these different ferrous materials include carbon steel, low carbon steel, stainless steel, high alloy steel, pig iron, iron scrap, and direct reduced iron.

(4) If you document that a specific process input or output contributes less than one percent of the total mass of carbon into or out of the process, you do not have to determine the monthly mass or annual carbon content of that input or output.

(5) Except as provided in paragraph (b)(4) of this section, you must determine the annual carbon content and monthly mass rate of any input or output that contains carbon that is not listed in the equations in § 98.173(b)(1) using the procedures in paragraphs (b)(1) and (b)(2) of this section.

(c) If you determine CO\textsubscript{2} emissions using the site-specific emission factor procedure in § 98.173(b)(2), you must:

(1) Conduct an annual performance test that is based on representative performance (i.e., performance based on normal operating conditions) of the affected process.

(2) For the furnace exhaust from basic oxygen furnaces, EAFs, decarburization vessels, and direct reduction furnaces, sample the furnace exhaust for at least three complete production cycles that start when the furnace is being charged and end after steel or iron and slag have been tapped. For EAFs that produce both carbon steel and stainless or specialty (low carbon) steel, develop an emission factor for the production of both types of steel.

(3) For taconite indurating furnaces, non-recovery coke batteries, and sinter processes, sample for at least 3 hours.

(4) Conduct the stack test using EPA Method 3A at 40 CFR part 60, appendix A–2 to measure the CO\textsubscript{2} concentration, Method 2, 2A, 2C, 2D, or 2F at 40 CFR part 60, appendix A–1 or Method 26 at 40 CFR part 60, appendix A–2 to determine the stack gas volumetric flow rate, and Method 4 at 40 CFR part 60, at appendix A–3 to determine the moisture content of the stack gas.

(5) Determine the mass rate of process feed or process production (as applicable) during the test using the same plant instruments or procedures that are used for accounting purposes (such as weigh hoppers, belt weigh feeders, combination of bulk density and volume measurements, etc.)

(6) If your process operates under different conditions as part of normal operations in such a manner that CO\textsubscript{2} emissions change by more than 20 percent (e.g., routine changes in the carbon content of the sinter feed or change in grade of product), you must perform emission testing and develop separate emission factors for these different operating conditions and determine emissions based on the number of hours the process operates and the production or feed rate (as applicable) at each specific different condition.

(7) If your EAF and decarburization vessel exhaust to a common emission control device and stack, you must sample each process in the ducts before the emissions are combined, sample each process when only one process is operating, or sample the combined emissions when both processes are operating and base the site-specific emission factor on the steel production rate of the EAF.

(8) The results of a performance test must include the analysis of samples, determination of emissions, and raw data. The performance test report must contain all information and data used to derive the emission factor.

(d) For a coke pushing process, determine the metric tons of coal charged to the coke ovens and record the totals.
§ 98.175 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations in §98.173 is required. Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter shall be used in the calculations as specified in the paragraphs (a) and (b) of this section. You must follow the missing data procedures in §98.255(b) of subpart Y (Petroleum Refineries) of this part for flares burning coke oven gas or blast furnace gas. You must document and keep records of the procedures used for all such estimates.

(a) For each missing data for the carbon content of inputs and outputs for facilities that estimate emissions using the carbon mass balance procedure in §98.173(b)(1) or for facilities that estimate emissions using the site-specific emission factor procedure in §98.173(b)(2); 100 percent data availability is required. You must repeat the test for average carbon contents of inputs and outputs according to the procedures in §98.174(b)(2). Similarly, you must repeat the test to determine the site-specific emission factor if data on the CO\textsubscript{2} emission rate, process production rate or process feed rate are missing.

(b) For missing records of the monthly mass or volume of carbon-containing inputs and outputs using the carbon mass balance procedure in §98.173(b)(1), the substitute data value must be based on the best available estimate of the mass of the input or output material from all available process data or data used for accounting purposes.

§ 98.176 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information required in paragraphs (a) through (h) of this section for each coke pushing operation; taconite indurating furnace; basic oxygen furnace; non-recovery coke oven battery; sinter process; EAF; decarburization vessel; direct reduction furnace; and flare burning coke oven gas or blast furnace gas. For reporting year 2010, the information required in paragraphs (a) through (h) of this section is not required for decarburization vessels that are not argon-oxygen decarburization vessels.

For reporting year 2011 and each subsequent reporting year, the information in paragraphs (a) through (h) of this section must be reported for all decarburization vessels.

(a) Unit identification number and annual CO\textsubscript{2} emissions (in metric tons).

(b) Annual production quantity (in metric tons) for taconite pellets, coke, sinter, iron, and raw steel.

(c) If a CEMS is used to measure CO\textsubscript{2} emissions, then you must report the relevant information required under §98.36 for the Tier 4 Calculation Methodology.

(d) If a CEMS is not used to measure CO\textsubscript{2} emissions, then you must report for each process whether the emissions were determined using the carbon mass balance method in §98.173(b)(1) or the site-specific emission factor method in §98.173(b)(2).

(e) If you use the carbon mass balance method in §98.173(b)(1) to determine CO\textsubscript{2} emissions, you must report the following information for each process:

1. The carbon content of each process input and output used to determine CO\textsubscript{2} emissions.

2. Whether the carbon content was determined from information from the supplier or by laboratory analysis, and if by laboratory analysis, the method used.

3. The annual volume of each type of gaseous fuel (reported separately for each type in standard cubic feet), the annual volume of each type of liquid fuel (reported separately for each type in gallons), and the annual mass (in metric tons) of each other process inputs and outputs used to determine CO\textsubscript{2} emissions.
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(4) The molecular weight of gaseous fuels.

(5) If you used the missing data procedures in §98.175(b), you must report how the monthly mass for each process input or output with missing data was determined and the number of months the missing data procedures were used.

(f) If you used the site-specific emission factor method in §98.173(b)(2) to determine CO\textsubscript{2} emissions, you must report the following information for each process:

(1) The measured average hourly CO\textsubscript{2} emission rate during the test (in metric tons per hour).

(2) The average hourly feed or production rate (as applicable) during the test (in metric tons per hour).

(3) The site-specific emission factor (in metric tons of CO\textsubscript{2} per metric ton of feed or production, as applicable).

(4) The annual feed or production rate (as applicable) used to estimate annual CO\textsubscript{2} emissions (in metric tons).

(g) The annual amount of coal charged to the coke ovens (in metric tons).

(h) For flares burning coke oven gas or blast furnace gas, the information specified in §98.256(e) of subpart Y (Petroleum Refineries) of this part.


§ 98.177 Records that must be retained.

In addition to the records required by §98.3(g), you must retain the records specified in paragraphs (a) through (e) of this section, as applicable. Facilities that use CEMS to measure emissions must also retain records of the verification data required for the Tier 4 Calculating Methodology in §98.36(e).

(a) Records of all analyses and calculations conducted, including all information reported as required under §98.176.

(b) When the carbon mass balance method is used to estimate emissions for a process, the monthly mass of each process input and output that are used to determine the annual mass.

(c) Production capacity (in metric tons per year) for the production of taconite pellets, coke, sinter, iron, and raw steel.

(d) Annual operating hours for each taconite indurating furnace, basic oxygen furnace, non-recovery coke oven battery, sinter process, electric arc furnace, decarburization vessel, and direct reduction furnace.

(e) Facilities must keep records that include a detailed explanation of how company records or measurements are used to determine all sources of carbon input and output and the metric tons of coal charged to the coke ovens (e.g., weigh belts, a combination of measuring volume and bulk density). You also must document the procedures used to ensure the accuracy of the measurements of fuel usage including, but not limited to, calibration of weighing equipment, fuel flow meters, coal usage including, but not limited to, calibration of weighing equipment and other measurement devices. The estimated accuracy of measurements made with these devices must also be recorded, and the technical basis for these estimates must be provided.


§ 98.178 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart R—Lead Production

§ 98.180 Definition of the source category.

The lead production source category consists of primary lead smelters and secondary lead smelters. A primary lead smelter is a facility engaged in the production of lead metal from lead sulfide ore concentrates through the use of pyrometallurgical techniques. A secondary lead smelter is a facility at which lead-bearing scrap materials (including but not limited to, lead-acid batteries) are recycled by smelting into elemental lead or lead alloys.

§ 98.181 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a lead production process and the facility meets the requirements of either §98.2(a)(1) or (a)(2).
§ 98.182 GHGs to report.
You must report:

(a) Process CO\textsubscript{2} emissions from each smelting furnace used for lead production.
(b) CO\textsubscript{2} combustion emissions from each smelting furnace used for lead production.
(c) CH\textsubscript{4} and N\textsubscript{2}O combustion emissions from each smelting furnace used for lead production. You must calculate and report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.
(d) CO\textsubscript{2}, CH\textsubscript{4}, and N\textsubscript{2}O emissions from each stationary combustion unit other than smelting furnaces used for lead production. You must report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.

§ 98.183 Calculating GHG emissions.
You must calculate and report the annual process CO\textsubscript{2} emissions from each smelting furnace using the procedure in paragraphs (a) and (b) of this section.

(a) For each smelting furnace that meets the conditions specified in § 98.33(b)(4)(ii) or (b)(4)(iii), you must calculate and report combined process and combustion CO\textsubscript{2} emissions by operating and maintaining a CEMS to measure CO\textsubscript{2} emissions according to the Tier 4 Calculation Methodology specified in § 98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(b) For each smelting furnace that is not subject to the requirements in paragraph (a) of this section, calculate and report process and combustion CO\textsubscript{2} emissions from the smelting furnace by using the procedure in either paragraph (b)(1) or (b)(2) of this section.

(1) Calculate and report under this subpart the combined process and combustion CO\textsubscript{2} emissions by operating and maintaining a CEMS to measure CO\textsubscript{2} emissions according to the Tier 4 Calculation Methodology specified in § 98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(2) Calculate and report process and combustion CO\textsubscript{2} emissions separately using the procedures specified in paragraphs (b)(2)(i) through (b)(2)(iii) of this section.

(i) For each smelting furnace, determine the annual mass of carbon in each carbon-containing material, other than fuel, that is fed, charged, or otherwise introduced into the smelting furnace and estimate annual process CO\textsubscript{2} emissions using Equation R-1 of this section. Carbon-containing materials include carbonaceous reducing agents. If you document that a specific material contributes less than 1 percent of the total carbon into the process, you do not have to include the material in your calculation using Equation R-1 of this section.

\[
E_{\text{CO}_2} = \frac{2000}{2205} \left[ \text{Ore} \times C_{\text{Ore}} + \text{Scrap} \times C_{\text{Scrap}} + \text{Flux} \times C_{\text{Flux}} + \text{Other} \times C_{\text{Other}} \right] \quad \text{(Eq. R-1)}
\]

Where:

\(E_{\text{CO}_2}\) = Annual process CO\textsubscript{2} emissions from an individual smelting furnace (metric tons).
44/12 = Ratio of molecular weights, CO\textsubscript{2} to carbon.
2000/2205 = Conversion factor to convert tons to metric tons.
Ore = Annual mass of lead ore charged to the smelting furnace (tons).
\(C_{\text{Ore}}\) = Carbon content of the lead ore, from the carbon analysis results (percent by weight, expressed as a decimal fraction).
Scrap = Annual mass of lead scrap charged to the smelting furnace (tons).
\(C_{\text{Scrap}}\) = Carbon content of the lead scrap, from the carbon analysis (percent by weight, expressed as a decimal fraction).
Flux = Annual mass of flux materials (e.g., limestone, dolomite) charged to the smelting furnace (tons).
\(C_{\text{Flux}}\) = Carbon content of the flux materials, from the carbon analysis (percent by weight, expressed as a decimal fraction).
(ii) Determine the combined annual process CO₂ emissions from the smelting furnaces at your facility using Equation R-2 of this section.

\[
\text{CO}_2 = \sum_{k=1}^{k} E_{\text{CO}_2 k} \quad \text{Eq. R-2}
\]

Where:
- \( E_{\text{CO}_2 k} \) = Annual process CO₂ emissions from smelting furnace \( k \) calculated using Equation R-1 of this section (metric tons/year).
- \( k \) = Total number of smelting furnaces at facility used for lead production.

(iii) Calculate and report under subpart C of this part (General Stationary Fuel Combustion Sources) the combustion CO₂ emissions from the smelting furnaces according to the applicable requirements in subpart C.

§ 98.185 Monitoring and QA/QC requirements.

If you determine process CO₂ emissions using the carbon mass balance procedure in §98.183(b)(2)(i) and (b)(2)(ii), you must meet the requirements specified in paragraphs (a) and (b) of this section.

(a) Determine the annual mass for each material used for the calculations of annual process CO₂ emissions using Equation R-1 of this subpart by summing the monthly mass for the material determined for each month of the calendar year. The monthly mass may be determined using plant instruments used for accounting purposes, including either direct measurement of the quantity of the material placed in the unit or by calculations using process operating information.

(b) For each material identified in paragraph (a) of this section, you must determine the average carbon content of the material consumed or used in the calendar year using the methods specified in either paragraph (b)(1) or (b)(2) of this section. If you document that a specific process input or output contributes less than one percent of the total mass of carbon into or out of the process, you do not have to determine the monthly mass or annual carbon content of that input or output.

(1) Information provided by your material supplier.

(2) Collecting and analyzing at least three representative samples of the material each year. The carbon content of the material must be analyzed at least annually using the methods (and their QA/QC procedures) specified in paragraphs (b)(2)(i) through (b)(2)(iii) of this section, as applicable.

(i) ASTM E1941–04, Standard Test Method for Determination of Carbon in Refractory and Reactive Metals and Their Alloys (incorporated by reference, see §98.7) for analysis of metal ore and alloy product.

(ii) ASTM D5373–08 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, see §98.7), for analysis of carbonaceous reducing agents and carbon electrodes.

(iii) ASTM C25–06, Standard Test Methods for Chemical Analysis of Limestone, Quicklime, and Hydrated Lime (incorporated by reference, see §98.7) for analysis of flux materials such as limestone or dolomite.

§ 98.185 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations in §98.183 is required. Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter shall be used in the calculations as specified in the paragraphs (a) and (b) of this section. You must document and keep records of the procedures used for all such estimates.

(a) For each missing data for the carbon content for the smelting furnaces
§ 98.186 Data reporting procedures.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) or (b) of this section, as applicable.

(a) If a CEMS is used to measure CO₂ emissions according to the requirements in §98.183(a) or (b)(1), then you must report under this subpart the relevant information required by §98.36 and the information specified in paragraphs (a)(1) through (a)(4) of this section.

(1) Identification number of each smelting furnace.

(2) Annual lead product production capacity (tons).

(3) Annual production for each lead product (tons).

(4) Total number of smelting furnaces at facility used for lead production.

(b) If a CEMS is not used to measure CO₂ emissions, and you measure CO₂ emissions according to the requirements in §98.183(b)(2)(i) and (b)(2)(ii), then you must report the information specified in paragraphs (b)(1) through (b)(9) of this section.

(1) Identification number of each smelting furnace.

(2) Annual process CO₂ emissions (in metric tons) from each smelting furnace as determined by Equation R–1 of this subpart.

(3) Annual lead product production capacity for the facility and each smelting furnace (tons).

(4) Annual production for each lead product (tons).

(5) Total number of smelting furnaces at facility used for production of lead products reported in paragraph (b)(4) of this section.

(6) Annual material quantity for each material used for the calculation of annual process CO₂ emissions using Equation R–1 of this subpart for each smelting furnace (tons).

(7) Annual average of the carbon content determinations for each material used for the calculation of annual process CO₂ emissions using Equation R–1 of this subpart for each smelting furnace.

(8) List the method used for the determination of carbon content for each material reported in paragraph (b)(7) of this section (e.g., supplier provided information, analyses of representative samples you collected).

(9) If you use the missing data procedures in §98.185(b), you must report how the monthly mass of carbon-containing materials with missing data was determined and the number of months the missing data procedures were used.

§ 98.187 Records that must be retained.

In addition to the records required by §98.3(g), each annual report must contain the information specified in paragraphs (a) through (c) of this section, as applicable to the smelting furnaces at your facility.

(a) If a CEMS is used to measure combined process and combustion CO₂ emissions according to the requirements in §98.183(a) or (b)(1), then you must retain the records required for the Tier 4 Calculation Methodology in §98.37 and the information specified in paragraphs (a)(1) through (a)(3) of this section.

(1) Monthly smelting furnace production quantity for each lead product (tons).

(2) Number of smelting furnace operating hours each month.

(3) Number of smelting furnace operating hours in calendar year.

(b) If the carbon mass balance procedure is used to determine process CO₂ emissions according to the requirements in §98.183(b)(2)(i) and (b)(2)(ii), then you must retain under this subpart the records specified in paragraphs (b)(1) through (b)(5) of this section.
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§ 98.193 Calculating GHG emissions.

You must calculate and report the annual process CO\textsubscript{2} emissions from all lime kilns combined using the procedure in paragraphs (a) and (b) of this section.

(a) If all lime kilns meet the conditions specified in §98.33(b)(4)(ii) or (b)(4)(iii), you must calculate and report under this subpart the combined process and combustion CO\textsubscript{2} emissions by operating and maintaining a CEMS to measure CO\textsubscript{2} emissions according to

(b) This source category includes all LMPs unless the LMP is located at a kraft pulp mill, soda pulp mill, sulfite pulp mill, or only processes sludge containing calcium carbonate from water softening processes. The lime manufacturing source category consists of marketed and non-marketed lime manufacturing facilities.

(1) Monthly smelting furnace production quantity for each lead product (tons).

(2) Number of smelting furnace operating hours each month.

(3) Number of smelting furnace operating hours in calendar year.

(4) Monthly material quantity consumed, used, or produced for each material included for the calculations of annual process CO\textsubscript{2} emissions using Equation R–1 of this subpart (tons).

(5) Average carbon content determined and records of the supplier provided information or analyses used for the determination for each material included for the calculations of annual process CO\textsubscript{2} emissions using Equation R–1 of this subpart.

(c) You must keep records that include a detailed explanation of how company records of measurements are used to estimate the carbon input to each smelting furnace, including documentation of any materials excluded from Equation R–1 of this subpart that contribute less than 1 percent of the total carbon into or out of the process. You also must document the procedures used to ensure the accuracy of the measurements made with these devices must also be recorded, and the technical basis for these estimates must be provided.

§ 98.188 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart S—Lime Manufacturing

§ 98.190 Definition of the source category.

(a) Lime manufacturing plants (LMPs) engage in the manufacture of a lime product (e.g., calcium oxide, high-calcium quicklime, calcium hydroxide, hydrated lime, dolomitic quicklime, dolomitic hydrate, or other lime products) by calcination of limestone, dolomite, shells or other calcareous substances as defined in 40 CFR 63.7081(a)(1).

(b) This source category includes all LMPs unless the LMP is located at a kraft pulp mill, soda pulp mill, sulfite pulp mill, or only processes sludge containing calcium carbonate from water softening processes. The lime manufacturing source category consists of marketed and non-marketed lime manufacturing facilities.

(c) Lime kilns at pulp and paper manufacturing facilities must report emissions under subpart AA of this part (Pulp and Paper Manufacturing).


§ 98.191 Reporting threshold.

You must report GHG emissions under this subpart if your facility is a lime manufacturing plant as defined in §98.190 and the facility meets the requirements of either §98.2(a)(1) or (a)(2).

§ 98.192 GHGs to report.

You must report:

(a) CO\textsubscript{2} process emissions from lime kilns.

(b) CO\textsubscript{2} emissions from fuel combustion at lime kilns.

(c) N\textsubscript{2}O and CH\textsubscript{4} emissions from fuel combustion at each lime kiln. You must report these emissions under 40 CFR part 98, subpart C (General Stationary Fuel Combustion Sources).

(d) CO\textsubscript{2}, N\textsubscript{2}O, and CH\textsubscript{4} emissions from each stationary fuel combustion unit other than lime kilns. You must report these emissions under 40 CFR part 98, subpart C (General Stationary Fuel Combustion Sources).

(e) CO\textsubscript{2} collected and transferred off site under 40 CFR part 98, following the requirements of subpart PP of this part (Suppliers of Carbon Dioxide (CO\textsubscript{2})).

§ 98.193 Calculating GHG emissions.

You must calculate and report the annual process CO\textsubscript{2} emissions from all lime kilns combined using the procedure in paragraphs (a) and (b) of this section.

(a) If all lime kilns meet the conditions specified in §98.33(b)(4)(ii) or (b)(4)(iii), you must calculate and report under this subpart the combined process and combustion CO\textsubscript{2} emissions by operating and maintaining a CEMS to measure CO\textsubscript{2} emissions according to
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the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(b) If CEMS are not required to be used to determine CO₂ emissions from all lime kilns under paragraph (a) of this section, then you must calculate and report the process and combustion CO₂ emissions from the lime kilns by using the procedures in either paragraph (b)(1) or (b)(2) of this section.

(1) Calculate and report under this subpart the combined process and combustion CO₂ emissions by operating and maintaining a CEMS to measure CO₂ emissions from all lime kilns according to the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(2) Calculate and report process and combustion CO₂ emissions separately using the procedures specified in paragraphs (b)(2)(i) through (b)(2)(v) of this section.

(i) You must calculate a monthly emission factor for each type of lime produced using Equation S–1 of this section. Calcium oxide and magnesium oxide content must be analyzed monthly for each lime product type that is produced:

\[
EF_{LIME,i,n} = \left[ \left( SR_{CaO} \times CaO_{LIME,i,n} \right) + \left( SR_{MgO} \times MgO_{LIME,i,n} \right) \right] \times \frac{2000}{2205} \quad (\text{Eq. S-1})
\]

Where:

\( EF_{LIME,i,n} \) = Emission factor for lime type i, for month n (metric tons CO₂/ton lime).

\( SR_{CaO} \) = Stoichiometric ratio of CO₂ and CaO for calcium carbonate (see Table S–1 of this subpart) (metric tons CO₂/metric tons CaO).

\( SR_{MgO} \) = Stoichiometric ratio of CO₂ and MgO for magnesium carbonate (see Table S–1 of this subpart) (metric tons CO₂/metric tons MgO).

\( CaO_{LIME,i,n} \) = Calcium oxide content for lime type i, for month n, determined according to §98.194(c) (metric tons CaO/metric ton lime).

\( MgO_{LIME,i,n} \) = Magnesium oxide content for lime type i, for month n, determined according to §98.194(c) (metric tons MgO/metric ton lime).

\( 2000/2205 \) = Conversion factor for tons to metric tons.

(ii) You must calculate a monthly emission factor for each type of calcined byproduct/waste sold (including lime kiln dust) using Equation S–2 of this section:

\[
EF_{LKD,i,n} = \left[ \left( SR_{CaO} \times CaO_{LKD,i,n} \right) + \left( SR_{MgO} \times MgO_{LKD,i,n} \right) \right] \times \frac{2000}{2205} \quad (\text{Eq. S-2})
\]

Where:

\( EF_{LKD,i,n} \) = Emission factor for calcined lime byproduct/waste type i sold, for month n (metric tons CO₂/ton lime byproduct).

\( SR_{CaO} \) = Stoichiometric ratio of CO₂ and CaO for calcium carbonate (see Table S–1 of this subpart) (metric tons CO₂/metric tons CaO).

\( SR_{MgO} \) = Stoichiometric ratio of CO₂ and MgO for magnesium carbonate (see Table S–1 of this subpart) (metric tons CO₂/metric tons MgO).

\( CaO_{LKD,i,n} \) = Calcium oxide content for calcined lime byproduct/waste type i sold, for month n (metric tons CaO/metric ton lime).

\( MgO_{LKD,i,n} \) = Magnesium oxide content for calcined lime byproduct/waste type i sold, for month n (metric tons MgO/metric ton lime).

\( 2000/2205 \) = Conversion factor for tons to metric tons.

(iii) You must calculate the annual CO₂ emissions from each type of calcined byproduct/waste that is not sold (including lime kiln dust and scrubber sludge) using Equation S–3 of this section:
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§ 98.194 Monitoring and QA/QC requirements.

(a) You must determine the total quantity of each type of lime product that is produced and each calcined byproduct/waste (such as lime kiln dust) that is sold. The quantities of each should be directly measured monthly with the same plant instruments used for accounting purposes, including but not limited to, calibrated weigh feeders, rail or truck scales, and barge measurements. The direct measurements of each lime product shall be reconciled annually with the difference in the beginning of and end of year inventories for these products, when measurements represent lime sold.

(b) You must determine the annual quantity of each calcined byproduct/waste generated that is sold by either direct measurement using the same instruments identified in paragraph (a) of this section or by using a calculated byproduct/waste generation rate.

(4) You must calculate annual CO₂ emissions for calcined lime byproduct/waste type i that is not sold (metric tons CaO/metric ton lime).

\[ E_{\text{waste},i} = \left( \left( SR_{\text{CaO}} \times CaO_{\text{waste},i} \right) + \left( SR_{\text{MgO}} \times MgO_{\text{waste},i} \right) \right) \times M_{\text{waste},i} \times \frac{2000}{2205} \]  

(Eq. S-3)

Where:

- \( E_{\text{waste},i} \) = Annual CO₂ emissions for calcined lime byproduct/waste type i that is not sold (metric tons CO₂).
- \( SR_{\text{CaO}} \) = Stoichiometric ratio of CO₂ and CaO for calcium carbonate (see Table S-1 of this subpart) (metric tons CO₂/metric tons CaO).
- \( SR_{\text{MgO}} \) = Stoichiometric ratio of CO₂ and MgO for magnesium carbonate (see Table S-1 of this subpart) (metric tons CO₂/metric tons MgO).
- \( CaO_{\text{waste},i} \) = Calcium oxide content for calcined lime byproduct/waste type i that is not sold (metric tons CaO/metric ton lime).
- \( MgO_{\text{waste},i} \) = Magnesium oxide content for calcined lime byproduct/waste type i that is not sold (metric tons MgO/metric ton lime).
- \( M_{\text{waste},i} \) = Annual weight or mass of calcined byproducts/wastes for lime type i that is not sold (tons).

You must calculate annual CO₂ process emissions for all kilns using Equation S-4 of this section:

\[ E_{\text{CO}_2} = \sum_{i=1}^{t} \sum_{n=1}^{12} \left( EF_{\text{LIME},i,n} \times M_{\text{LIME},i,n} \right) + \sum_{i=1}^{b} \sum_{n=1}^{12} EF_{\text{LKD},i,n} \times M_{\text{LKD},i,n} + \sum_{z} E_{\text{waste},i} \]  

(Eq. S-4)

Where:

- \( E_{\text{CO}_2} \) = Annual CO₂ process emissions from lime production from all kilns (metric tons/year).
- \( EF_{\text{LIME},i,n} \) = Emission factor for lime type i produced, in calendar month n (metric tons CO₂/ton lime) from Equation S-1 of this section.
- \( M_{\text{LIME},i,n} \) = Weight or mass of lime type i produced in calendar month n (tons).
- \( EF_{\text{LKD},i,n} \) = Emission factor of calcined byproducts/wastes sold for lime type i in calendar month n, (metric tons CO₂/ton byproduct/waste) from Equation S-2 of this section.
- \( M_{\text{LKD},i,n} \) = Monthly weight or mass of calcined byproducts/waste sold (such as lime kiln dust, LKD) for lime type i in calendar month n (tons).
- \( E_{\text{waste},i} \) = Annual CO₂ emissions for calcined lime byproduct/waste type i that is not sold (metric tons CO₂) from Equation S-3 of this section.
- \( t \) = Number of lime types produced
- \( b \) = Number of calcined byproducts/wastes that are sold
- \( z \) = Number of calcined byproducts/wastes that are not sold

(5) You must calculate and report under subpart C of this part (General Stationary Fuel Combustion Sources) the combustion CO₂ emissions from each lime kiln according to the applicable requirements in subpart C.
§ 98.195 Procedures for estimating missing data.

For the procedure in §98.193(b)(1), a complete record of all measured parameters used in the GHG emissions calculations is required (e.g., oxide content, quantity of lime products, etc.). Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter shall be used in the calculations as specified in paragraphs (a) or (b) of this section. You must document and keep records of the procedures used for all such estimates.

(a) For each missing value of the quantity of lime produced (by type), and quantity of calcined byproduct/waste produced and sold, the substitute data value shall be the best available estimate based on all available process data or data used for accounting purposes.

(b) For missing values related to the CaO and MgO content, you must conduct a new composition test according to the standard methods in §98.194 (c)(1) or (c)(2).


§ 98.196 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) or (b) of this section, as applicable.

(a) If a CEMS is used to measure CO₂ emissions, then you must report under this subpart the relevant information required by §98.36 and the information listed in paragraphs (a)(1) through (8) of this section.

(1) Method used to determine the quantity of lime that is produced and sold.

(2) Method used to determine the quantity of calcined lime byproduct/waste sold.

(3) Beginning and end of year inventories for each lime product that is produced, by type.

(4) Beginning and end of year inventories for calcined lime byproducts/wastes sold, by type.

(5) Annual amount of calcined lime byproduct/waste sold, by type (tons).

(6) Annual amount of lime product sold, by type (tons).

(7) Annual amount of calcined lime byproduct/waste that is not sold, by type (tons).

(8) Annual amount of lime product not sold, by type (tons).

(b) If a CEMS is not used to measure CO₂ emissions, then you must report the information listed in paragraphs (b)(1) through (17) of this section.

(1) Annual CO₂ process emissions from all kilns combined (metric tons).

(2) Monthly emission factors for each lime type produced.

(3) Monthly emission factors for each calcined byproduct/waste by lime type that is sold.

(4) Standard method used (ASTM or NLA testing method) to determine chemical compositions of each lime type produced and each calcined lime byproduct/waste type.

(5) Monthly results of chemical composition analysis of each type of lime product produced and calcined byproduct/waste.

(6) Annual results of chemical composition analysis of each type of lime byproduct/waste that is not sold.

(7) Method used to determine the quantity of lime produced and/or lime sold.

(8) Monthly amount of lime product sold, by type (tons).

(9) Method used to determine the quantity of calcined lime byproduct/waste sold.

(10) Monthly amount of calcined lime byproduct/waste sold, by type (tons).

(11) Annual amount of calcined lime byproduct/waste that is not sold, by type (tons).

(12) Monthly weight or mass of each lime type produced (tons).

(13) Beginning and end of year inventories for each lime product that is produced.

(14) Beginning and end of year inventories for calcined lime byproducts/wastes sold.

(15) Annual lime production capacity (tons) per facility.

(16) Number of times in the reporting year that missing data procedures were followed to measure lime production (months) or the chemical composition of lime products sold (months).

(17) Indicate whether CO\textsubscript{2} was used on-site (i.e. for use in a purification process). If CO\textsubscript{2} was used on-site, provide the information in paragraphs (b)(17)(i) and (ii) of this section.

(i) The annual amount of CO\textsubscript{2} captured for use in the on-site process.

(ii) The method used to determine the amount of CO\textsubscript{2} captured.

§ 98.197 Records that must be retained.

In addition to the records required by §98.3(g), you must retain the records specified in paragraphs (a) and (b) of this section.

(a) Annual operating hours in calendar year.

(b) Records of all analyses (e.g. chemical composition of lime products, by type) and calculations conducted.

§ 98.198 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Table S–1 to Subpart S of Part 98—Basic Parameters for the Calculation of Emission Factors for Lime Production

<table>
<thead>
<tr>
<th>Variable</th>
<th>Stoichiometric ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>SR\textsubscript{CaO}</td>
<td>0.7848</td>
</tr>
<tr>
<td>SR\textsubscript{MgO}</td>
<td>1.0918</td>
</tr>
</tbody>
</table>

Subpart T—Magnesium Production

Source: 75 FR 39761, July 12, 2010, unless otherwise noted.

§ 98.200 Definition of source category.

The magnesium production and processing source category consists of the following processes:

(a) Any process in which molten magnesium is used in alloying, casting, drawing, extruding, forming, or rolling operations.

(b) Any process in which molten magnesium is produced through smelting (including electrolytic smelting), refining, or remelting operations.

§ 98.201 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a magnesium production process and the facility meets the requirements of either §98.2(a)(1) or (2).

§ 98.202 GHGs to report.

(a) You must report emissions of the following gases in metric tons per year resulting from their use as cover gases or carrier gases in magnesium production or processing:

(1) Sulfur hexafluoride (SF\textsubscript{6}).

(2) HFC–134a.
§ 98.203 Calculating GHG emissions.

(a) Calculate the mass of each GHG emitted from magnesium production or processing over the calendar year using either Equation T–1 or Equation T–2 of this section, as appropriate. Both of these equations equate emissions of cover gases or carrier gases to consumption of cover gases or carrier gases.

(1) To estimate emissions of cover gases or carrier gases by monitoring changes in container masses and inventories, emissions of each cover gas or carrier gas shall be estimated using Equation T–1 of this section:

\[ E_x = (I_{B,x} - I_{E,x} + A_x - D_x) \times 0.001 \]  

(\text{Eq. T-1})

Where:

- \( E_x \) = Emissions of each cover gas or carrier gas, \( X \), in metric tons over the reporting year.
- \( I_{B,x} \) = Inventory of each cover gas or carrier gas stored in cylinders or other containers at the beginning of the year, including heels, in kg.
- \( I_{E,x} \) = Inventory of each cover gas or carrier gas stored in cylinders or other containers at the end of the year, including heels, in kg.
- \( A_x \) = Acquisitions of each cover gas or carrier gas during the year through purchases or other transactions, including heels in cylinders or other containers returned to the magnesium production or processing facility, in kg.
- \( D_x \) = Disbursements of each cover gas or carrier gas to sources and locations outside the facility through sales or other transactions during the year, including heels in cylinders or other containers returned by the magnesium production or processing facility to the gas supplier, in kg.
- 0.001 = Conversion factor from kg to metric tons.
- \( X \) = Each cover gas or carrier gas that is a GHG.

(2) To estimate emissions of cover gases or carrier gases by monitoring changes in the masses of individual containers as their contents are used, emissions of each cover gas or carrier gas shall be estimated using Equation T–2 of this section:

\[ E_{\text{GHG}} = \sum_{p=1}^{n} Q_p \times 0.001 \]  

(\text{Eq. T-2})

Where:

- \( E_{\text{GHG}} \) = Emissions of each cover gas or carrier gas, \( X \), over the reporting year (metric tons).
- \( Q_p \) = The mass of the cover or carrier gas consumed (kg) over the container-use period \( p \), from Equation T–3 of this section.
- \( n \) = The number of container-use periods in the year.
- 0.001 = Conversion factor from kg to metric tons.
- \( X \) = Each cover gas or carrier gas that is a GHG.

(b) For purposes of Equation T–2 of this section, the mass of the cover gas used over the period \( p \) for an individual container shall be estimated by using Equation T–3 of this section:

\[ Q_p = M_{B} - M_{E} \]  

(\text{Eq. T-3})

Where:

- \( Q_p \) = The mass of the cover or carrier gas consumed (kg) over the container-use period \( p \) (e.g., one month).
- \( M_{B} \) = The mass of the container’s contents (kg) at the beginning of period \( p \).
- \( M_{E} \) = The mass of the container’s contents (kg) at the end of period \( p \).

(c) If a facility has mass flow controllers (MFC) and the capacity to track and record MFC measurements to estimate total gas usage, the mass of each cover or carrier gas consumed \( (Q_p) \), in kg for period \( p \) in Equation T–2 of this section.
§ 98.204 Monitoring and QA/QC requirements.

(a) For calendar year 2011 monitoring, the facility may submit a request to the Administrator to use one or more best available monitoring methods as listed in §98.3(d)(1)(i) through (iv). The request must be submitted no later than October 12, 2010 and must contain the information in §98.3(d)(2)(ii). To obtain approval, the request must demonstrate to the Administrator’s satisfaction that it is not reasonably feasible to acquire, install, and operate a required piece of monitoring equipment by January 1, 2011. The use of best available monitoring methods will not be approved beyond December 31, 2011.

(b) Emissions (consumption) of cover gases and carrier gases may be estimated by monitoring the changes in container weights and inventories using Equation T–1 of this subpart, by monitoring the changes in individual container weights as the contents of each container are used using Equations T–2 and T–3 of this subpart, or by monitoring the mass flow of the pure cover gas or carrier gas into the gas distribution system. Emissions must be estimated at least annually.

(c) When estimating emissions by monitoring the mass flow of the pure cover gas or carrier gas into the gas distribution system, you must use gas flow meters, or mass flow controllers, with an accuracy of 1 percent of full scale or better.

(d) When estimating emissions using Equation T–1 of this subpart, you must ensure that all the quantities required by Equation T–1 of this subpart have been measured using scales or load cells with an accuracy of 1 percent of full scale or better, accounting for the tare weights of the containers. You may accept gas masses or weights provided by the gas supplier e.g., for the contents of containers containing new gas or for the heels remaining in cylinders returned to the gas supplier) if the supplier provides documentation verifying that accuracy standards are met; however, you remain responsible for the accuracy of these masses or weights under this subpart.

(e) When estimating emissions using Equations T–2 and T–3 of this subpart, you must monitor and record container identities and masses as follows:

1) Track the identities and masses of containers leaving and entering storage with check-out and check-in sheets and procedures. The masses of cylinders returning to storage shall be measured immediately before the cylinders are put back into storage.

2) Ensure that all the quantities required by Equations T–2 and T–3 of this subpart have been measured using scales or load cells with an accuracy of 1 percent of full scale or better, accounting for the tare weights of the containers. You may accept gas masses or weights provided by the gas supplier e.g., for the contents of cylinders containing new gas or for the heels remaining in cylinders returned to the gas supplier) if the supplier provides documentation verifying that accuracy standards are met; however, you remain responsible for the accuracy of these masses or weights under this subpart.

(f) All flowmeters, scales, and load cells used to measure quantities that are to be reported under this subpart shall be calibrated using calibration procedures specified by the flowmeter, scale, or load cell manufacturer. Calibration shall be performed prior to the first reporting year. After the initial calibration, recalibration shall be performed at the minimum frequency specified by the manufacturer.

§ 98.205 Procedures for estimating missing data.

(a) A complete record of all measured parameters used in the GHG emission calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter will be used in the calculations as specified in paragraph (b) of this section.

(b) Replace missing data on the emissions of cover or carrier gases by multiplying magnesium production during the missing data period by the average cover or carrier gas usage rate from the most recent period when operating conditions were similar to those for the period for which the data are missing. Calculate the usage rate for each cover
or carrier gas using Equation T-4 of this section:

\[ R_{GHG} = \frac{C_{GHG}}{Mg} \times 0.001 \]  

(Eq. T-4)

Where:

- \( R_{GHG} \): The usage rate for a particular cover or carrier gas over the period of comparable operation (metric tons gas/metric ton Mg).
- \( C_{GHG} \): The consumption of that cover or carrier gas over the period of comparable operation (kg).
- \( Mg \): The magnesium produced or fed into the process over the period of comparable operation (metric tons).
- 0.001: Conversion factor from kg to metric tons.

(c) If the precise before and after weights are not available, it should be assumed that the container was emptied in the process (i.e., quantity purchased should be used, less heel).

§ 98.207 Records that must be retained.

In addition to the records specified in §98.3(g), you must retain the following information at the facility level:

(a) Check-out and weigh-in sheets and procedures for gas cylinders.

(b) Accuracy certifications and calibration records for scales including the method or manufacturer’s specification used for calibration.

(c) Residual gas amounts (heel) in cylinders sent back to suppliers.

(d) Records, including invoices, for gas purchases, sales, and disbursements for all GHGs.

§ 98.208 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part. Additionally, some sector-specific definitions are provided below:

- **Carrier gas** means the gas with which cover gas is mixed to transport and dilute the cover gas thus maximizing its efficient use. Carrier gases typically include \( CO_2 \), \( N_2 \), and/or dry air.

- **Cover gas** means \( SF_6 \), HFC-134a, fluorinated ketone (FK 5–1–12) or other gas used to protect the surface of molten magnesium from rapid oxidation and burning in the presence of air. The molten magnesium may be the surface of a casting or ingot production operation or the surface of a crucible of molten magnesium that feeds a casting operation.

Subpart U—Miscellaneous Uses of Carbonate

§ 98.210 Definition of the source category.

(a) This source category includes any equipment that uses carbonates listed in Table U–1 in manufacturing processes that emit carbon dioxide. Table U–1 includes the following carbonates:
§ 98.213 Calculating GHG emissions.

You must determine CO\textsubscript{2} process emissions from carbonate use in sorbent technology used to control emissions from stationary fuel combustion equipment. Emissions from carbonate used in sorbent technology are reported under 40 CFR part C (Stationary Fuel Combustion Sources).

You must determine CO\textsubscript{2} process emissions from carbonate use in sorbent technology used to control emissions from stationary fuel combustion equipment. Emissions from carbonate used in sorbent technology are reported under 40 CFR part C (Stationary Fuel Combustion Sources).

\[ E_{CO_2} = \sum_{i=1}^{n} M_i \times EF_i \times F_i \times \frac{2000}{2205} \quad (Eq. U-1) \]

Where:
- \( E_{CO_2} \) = Annual CO\textsubscript{2} mass emissions from consumption of carbonates (metric tons).
- \( M_i \) = Annual mass of carbonate type \( i \) consumed (tons).
- \( EF_i \) = Emission factor for the carbonate type \( i \), as specified in Table U-1 of this subpart, metric tons CO\textsubscript{2} per metric ton carbonate consumed.
- \( F_i \) = Fraction calcination achieved for each particular carbonate type \( i \) (decimal fraction). As an alternative to measuring the calcination fraction, a value of 1.0 can be used.
- \( n \) = Number of carbonate types.
- \( \frac{2000}{2205} \) = Conversion factor to convert tons to metric tons.

(b) Calculate the process emissions of CO\textsubscript{2} using actual mass of output carbonates with Equation U-2 of this section.

\[ E_{CO_2} = \left( \sum_{k=1}^{m} (M_k \times EF_k) - \sum_{j=1}^{n} (M_j \times EF_j) \right) \times \frac{2000}{2205} \quad (Eq. U-2) \]

Where:
- \( E_{CO_2} \) = Annual CO\textsubscript{2} mass emissions from consumption of carbonates (metric tons).
- \( M_i \) = Annual mass of input carbonate type \( k \) (tons).
- \( EF_k \) = Emission factor for the carbonate type \( k \), as specified in Table U-1 of this subpart (metric tons CO\textsubscript{2} per metric ton carbonate input).
- \( M_j \) = Annual mass of output carbonate type \( j \) (tons).
- \( EF_j \) = Emission factor for the output carbonate type \( j \), as specified in Table U-1 of this subpart (metric tons CO\textsubscript{2} per metric ton carbonate input).
- \( m \) = Number of input carbonate types.
- \( n \) = Number of output carbonate types.
§ 98.214 Monitoring and QA/QC requirements.

(a) The annual mass of carbonate consumed (for Equation U–1 of this subpart) or carbonate inputs (for Equation U–2 of this subpart) must be determined annually from monthly measurements using the same plant instruments used for accounting purposes including purchase records or direct measurement, such as weigh hoppers or weigh belt feeders.

(b) The annual mass of carbonate outputs (for Equation U–2 of this subpart) must be determined annually from monthly measurements using the same plant instruments used for accounting purposes including purchase records or direct measurement, such as weigh hoppers or belt weigh feeders.

(c) If you follow the procedures of §98.213(a), as an alternative to assuming a calcination fraction of 1.0, you can determine on an annual basis the calcination fraction for each carbonate consumed based on sampling and chemical analysis using a suitable method such as using an x-ray fluorescence standard method or other enhanced industry consensus standard method published by an industry consensus standard organization (e.g., ASTM, ASME, etc.).

§ 98.215 Procedures for estimating missing data.

(a) A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter shall be used in the calculations as specified in paragraph (b) of this section. You must document and keep records of the procedures used for all such estimates.

(b) For each missing value of monthly carbonate consumed, monthly carbonate output, or monthly carbonate input, the substitute data value must be the best available estimate based on the all available process data or data used for accounting purposes.

§ 98.216 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) through (g) of this section at the facility level, as applicable.

(a) Annual CO₂ emissions from miscellaneous carbonate use (metric tons).

(b) Annual mass of each carbonate type consumed (tons).

(c) Measurement method used to determine the mass of carbonate.

(d) Method used to calculate emissions.

(e) If you followed the calculation method of §98.213(b)(1)(i), you must report the information in paragraphs (e)(1) through (e)(3) of this section.

(1) Annual carbonate consumption by carbonate type (tons).

(2) Annual calcination fractions used in calculations.

(3) If you determined the calcination fraction, indicate which standard method was used.

(f) If you followed the calculation method of §98.213(b)(1)(ii), you must report the information in paragraphs (f)(1) and (f)(2) of this section.

(1) Annual carbonate input by carbonate type (tons).

(2) Annual carbonate output by carbonate type (tons).

(g) Number of times in the reporting year that missing data procedures were followed to measure carbonate consumption, carbonate input or carbonate output (months).

§ 98.217 Records that must be retained.

In addition to the records required by §98.3(g), you must retain the records specified in paragraphs (a) through (d) of this section:

(a) Monthly carbonate consumption (by carbonate type in tons).

(b) You must document the procedures used to ensure the accuracy of the monthly measurements of carbonate consumption, carbonate input or carbonate output including, but not limited to, calibration of weighing equipment and other measurement devices.

(c) Records of all analyses conducted to meet the requirements of this rule.

(d) Records of all calculations conducted.
§ 98.218 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

TABLE U–1 TO SUBPART U OF PART 98—
CO₂ EMISSION FACTORS FOR COMMON CARBONATES

<table>
<thead>
<tr>
<th>Mineral name—carbonate</th>
<th>CO₂ emission factor (tons CO₂/ton carbonate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limestone—CaCO₃</td>
<td>0.43971</td>
</tr>
<tr>
<td>Magnesite—MgCO₃</td>
<td>0.52197</td>
</tr>
<tr>
<td>Dolomite—CaMg(CO₃)₂</td>
<td>0.47732</td>
</tr>
<tr>
<td>Siderite—FeCO₃</td>
<td>0.37987</td>
</tr>
<tr>
<td>Ankerite—Ca(Fe, Mg, Mn)(CO₃)₂</td>
<td>0.47572</td>
</tr>
<tr>
<td>Rhodochrosite—MnCO₃</td>
<td>0.41492</td>
</tr>
<tr>
<td>Sodium Carbonate/Soda Ash—Na₂CO₃</td>
<td>0.36286</td>
</tr>
</tbody>
</table>

Subpart V—Nitric Acid Production

§ 98.220 Definition of source category.

A nitric acid production facility uses one or more trains to produce weak nitric acid (30 to 70 percent in strength). A nitric acid train produces weak nitric acid through the catalytic oxidation of ammonia.

§ 98.221 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a nitric acid train and the facility meets the requirements of either § 98.2(a)(1) or (a)(2).

§ 98.222 GHGs to report.

(a) You must report N₂O process emissions from each nitric acid production train as required by this subpart.

(b) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO₂, CH₄, and N₂O from each stationary combustion unit by following the requirements of subpart C.

§ 98.223 Calculating GHG emissions.

(a) You must determine annual N₂O process emissions from each nitric acid train according to paragraphs (a)(1) or (a)(2) of this section.

(1) Use a site-specific emission factor and production data according to paragraphs (b) through (i) of this section.

(2) Request Administrator approval for an alternative method of determining N₂O emissions according to paragraphs (a)(2)(i) and (a)(2)(ii) of this section.

(i) You must submit the request within 45 days following promulgation of this subpart or within the first 30 days of each subsequent reporting year.

(ii) If the Administrator does not approve your requested alternative method within 150 days of the end of the reporting year, you must determine the N₂O emissions for the current reporting period using the procedures specified in paragraph (a)(1) of this section.

(b) You must conduct an annual performance test for each nitric acid train according to paragraphs (b)(1) through (3) of this section.

(1) You must conduct the performance test at the absorber tail gas vent, referred to as the test point, for each nitric acid train according to § 98.224(b) through (f). If multiple nitric acid production units exhaust to a common abatement technology and/or emission point, you must sample each process in the ducts before the emissions are combined, sample each process when only one process is operating, or sample the combined emissions when multiple processes are operating and base the site-specific emission factor on the combined production rate of the multiple nitric acid production units.

(2) You must conduct the performance test under normal process operating conditions.

(3) You must measure the production rate during the performance test and calculate the production rate for the test period in metric tons (100 percent acid basis) per hour.

(c) Using the results of the performance test in paragraph (b) of this section, you must calculate an average site-specific emission factor for each nitric acid train "t" according to Equation V–1 of this section:
\[ EF_{N2O_t} = \frac{\sum_1^n C_{N2O_t} \times 1.14 \times 10^{-7} \times Q}{n} \]  
(Eq. V-1)

Where:
- \( EF_{N2O_t} \) = Average site-specific \( N_2O \) emissions factor for nitric acid train “\( t \)” (lb \( N_2O \)/ton nitric acid produced, 100 percent acid basis).
- \( C_{N2O_t} \) = \( N_2O \) concentration for each test run during the performance test (ppm \( N_2O \)).
- \( 1.14 \times 10^{-7} \) = Conversion factor (lb/dscf-ppm \( N_2O \)).
- \( Q \) = Volumetric flow rate of effluent gas for each test run during the performance test (dscf/hr).
- \( P \) = Production rate for each test run during the performance test (tons nitric acid produced per hour, 100 percent acid basis).
- \( n \) = Number of test runs.

(d) If nitric acid train “\( t \)” exhausts to any \( N_2O \) abatement technology “\( N \)” after the test point, you must determine the destruction efficiency for each \( N_2O \) abatement technology “\( N \)” according to paragraphs (d)(1), (d)(2), or (d)(3) of this section.

(1) Use the manufacturer’s specified destruction efficiency.

(2) Estimate the destruction efficiency through process knowledge. Examples of information that could constitute process knowledge include calculations based on material balances, process stoichiometry, or previous test results provided the results are still relevant to the current vent stream conditions. You must document how process knowledge (if applicable) was used to determine the destruction efficiency.

(3) Calculate the destruction efficiency by conducting an additional performance test on the emissions stream following the \( N_2O \) abatement technology.

(e) If nitric acid train “\( t \)” exhausts to any \( N_2O \) abatement technology “\( N \)” after the test point, you must determine the annual amount of nitric acid produced on train “\( t \)” while \( N_2O \) abatement technology “\( N \)” is operating according to §98.224(f). Then you must calculate the abatement utilization factor for each \( N_2O \) abatement technology “\( N \)” for each nitric acid train “\( t \)” according to Equation V–2 of this section.

\[ AF_{t,N} = \frac{P_{t,N}}{P_t} \]  
(Eq. V-2)

Where:
- \( AF_{t,N} \) = Abatement utilization factor of \( N_2O \) abatement technology “\( N \)” at nitric acid train “\( t \)” (fraction of annual production that abatement technology is operating).
- \( P_t \) = Total annual nitric acid production from nitric acid train “\( t \)” (ton acid produced, 100 percent acid basis).
- \( P_{t,N} \) = Annual nitric acid production from nitric acid train “\( t \)” during which \( N_2O \) abatement technology “\( N \)” was operational (ton acid produced, 100 percent acid basis).

(f) [Reserved]

(g) You must calculate \( N_2O \) emissions for each nitric acid train “\( t \)” according to paragraph (g)(1), (g)(2), (g)(3), or (g)(4) of this section.

(1) If nitric acid train “\( t \)” exhausts to one \( N_2O \) abatement technology “\( N \)” after the test point, you must use the emissions factor (determined in Equation V–1 of this section), the destruction efficiency (determined in paragraph (d) of this section), the annual nitric acid production (determined in paragraph (i) of this section), and the abatement utilization factor (determined in paragraph (e) of this section) according to Equation V–3a of this section:

\[ E_{N2O_t} = \frac{EF_{N2O_t} \ast P_t}{2205} \ast (1 - (DF \ast AF)) \]  
(Eq. V-3a)
Where:

$E_{N_{2}O_{t}}$ = Annual $N_{2}O$ mass emissions from nitric acid production unit “t” according to this Equation V–3a (metric tons).

$EF_{N_{2}O_{t}}$ = Average site-specific $N_{2}O$ emissions factor for nitric acid train “t” (lb $N_{2}O$/ton acid produced, 100 percent acid basis).

$P_{t}$ = Annual nitric acid production from the train “t” (ton acid produced, 100 percent acid basis).

$DF_{N}$ = Destruction efficiency of $N_{2}O$ abatement technology N that is used on nitric acid train “t” (percent of $N_{2}O$ removed from vent stream).

$AF_{N}$ = Abatement utilization factor of $N_{2}O$ abatement technology “N” for nitric acid train “t” (percent of time that the abatement technology is operating).

2205 = Conversion factor (lb/metric ton).

(2) If multiple $N_{2}O$ abatement technologies are located in series after your test point, you must use the emissions factor (determined in Equation V–1 of this section), the destruction efficiency (determined in paragraph (d) of this section), the annual nitric acid production (determined in paragraph (f) of this section), and the abatement utilization factor (determined in paragraph (e) of this section), according to Equation V–3b of this section:

$$E_{N_{2}O_{t}} = \frac{EF_{N_{2}O_{t}} \times P_{t}}{2205} \times (1 - (DF_{1} \times AF_{1})) \times (1 - (DF_{2} \times AF_{2})) \times \ldots \times (1 - (DF_{N} \times AF_{N}))$$

(Eq. V-3b)

Where:

$E_{N_{2}O_{t}}$ = Annual $N_{2}O$ mass emissions from nitric acid production unit “t” according to this Equation V–3b (metric tons).

$EF_{N_{2}O_{t}}$ = $N_{2}O$ emissions factor for unit “t” (lb $N_{2}O$/ton nitric acid produced).

$P_{t}$ = Annual nitric acid produced from unit “t” (ton acid produced, 100 percent acid basis).

$DF_{N}$ = Destruction efficiency of $N_{2}O$ abatement technology N (percent of $N_{2}O$ removed from vent stream).

$AF_{N}$ = Abatement utilization factor of $N_{2}O$ abatement technology “N” (percent of time that abatement technology is operating).

2205 = Conversion factor (lb/metric ton).

$N$ = Number of different $N_{2}O$ abatement technologies.

(3) If multiple $N_{2}O$ abatement technologies are located in parallel after your test point, you must use the emissions factor (determined in Equation V–1 of this section), the destruction efficiency (determined in paragraph (d) of this section), the annual nitric acid production (determined in paragraph (f) of this section), and the abatement utilization factor (determined in paragraph (e) of this section), according to Equation V–3c of this section:

$$E_{N_{2}O_{t}} = \frac{EF_{N_{2}O_{t}} \times P_{t}}{2205} \times \sum_{i=1}^{N} ((1 - (DF_{N} \times AF_{N})) \times FC_{N})$$

(Eq. V-3c)

Where:

$E_{N_{2}O_{t}}$ = Annual $N_{2}O$ mass emissions from nitric acid production unit “t” according to this Equation V–3c (metric tons).

$EF_{N_{2}O_{t}}$ = $N_{2}O$ emissions factor for unit “t” (lb $N_{2}O$/ton nitric acid produced).

$P_{t}$ = Annual nitric acid produced from unit “t” (ton acid produced, 100 percent acid basis).

$DF_{N}$ = Destruction efficiency of $N_{2}O$ abatement technology N (percent of $N_{2}O$ removed from vent stream).

$AF_{N}$ = Abatement utilization factor of $N_{2}O$ abatement technology “N” (percent of
§ 98.224 Monitoring and QA/QC requirements.

(a) You must conduct a new performance test according to a test plan as specified in paragraphs (a)(1) through (3) of this section.

(1) Conduct the performance test annually. The test should be conducted at a point during the campaign which is representative of the average emissions rate from the nitric acid campaigns. Facilities must document the methods used to determine the representative point of the campaign when the performance test is conducted.

(2) Conduct the performance test when your nitric acid production process is changed, specifically when abatement equipment is installed.

(3) If you requested Administrator approval for an alternative method of determining N₂O emissions under §98.223(a)(2), you must conduct the performance test if your request has not been approved by the Administrator within 150 days of the end of the reporting year in which it was submitted.

(b) You must measure the N₂O concentration during the performance test using one of the methods in paragraphs (b)(1) through (b)(3) of this section.


(3) An equivalent method, with Administrator approval.

(c) You must determine the production rate(s) (100 percent basis) from

\[ N_{2O} = \sum_{i=1}^{m} E_{N2Ot} \]  

(Eq. V-4)

Where:

- \( N_{2O} \) = Annual process N₂O emissions from nitric acid production facility (metric tons).
- \( E_{N2Ot} \) = N₂O mass emissions per year for nitric acid train “t” (metric tons).
- \( m \) = Number of nitric acid trains.

(4) If nitric acid train “t” does not exhaust to any N₂O abatement technology after the test point, you must use the emissions factor (determined in Equation V–1 of this section), and the annual nitric acid production (determined in paragraph (i) of this section) according to Equation V–3b of this section:

\[ E_{N2Ot} = \frac{EF_{N2Ot} \times P_t}{2205} \]  

(Eq. V-3d)

Where:

- \( E_{N2Ot} \) = Annual N₂O mass emissions from nitric acid production unit “t” according to this Equation V-3d (metric tons).
- \( EF_{N2Ot} \) = Average site-specific N₂O emissions factor for nitric acid train “t” (lb N₂O/ton acid produced, 100 percent acid basis).
- \( P_t \) = Annual nitric acid production from nitric acid train “t” (ton acid produced, 100 percent acid basis).
- 2205 = Conversion factor (lb/metric ton).

(4) If nitric acid train “t” does not exhaust to any N₂O abatement technology “N” (percent of total emissions from unit “t” that are sent to abatement technology “N”).

\[ FC_N = \text{Fraction control factor of N}_2\text{O abatement technology “N”.} \]

2205 = Conversion factor (lb/metric ton).

\[ N = \text{Number of different N}_2\text{O abatement technologies with a fraction control factor.} \]
each nitric acid train during the performance test according to paragraphs (c)(1) or (c)(2) of this section.

(1) Direct measurement of production and concentration (such as using flow meters, weigh scales, for production and concentration measurements).

(2) Existing plant procedures used for accounting purposes (i.e. dedicated tank-level and acid concentration measurements).

(d) You must determine the volumetric flow rate during the performance test in conjunction with the applicable EPA methods in 40 CFR part 60, appendices A–1 through A–4. Conduct three emissions test runs of 1 hour each. All QA/QC procedures specified in the reference test methods and any associated performance specifications apply. For each test, the facility must prepare an emission factor determination report that must include the items in paragraphs (d)(1) through (d)(3) of this section.

(1) Analysis of samples, determination of emissions, and raw data.

(2) All information and data used to derive the emissions factor(s).

(3) The production rate during each test and how it was determined.

(e) You must determine the total monthly amount of nitric acid produced. You must also determine the monthly amount of nitric acid produced while N₂O abatement technology (located after the test point) is operating from each nitric acid train. These monthly amounts are determined according to the methods in paragraphs (c)(1) or (2) of this section.

(f) You must determine the annual amount of nitric acid produced. You must also determine the annual amount of nitric acid produced while N₂O abatement technology (located after the test point) is operating for each train. These annual amounts are determined by summing the respective monthly nitric acid quantities determined in paragraph (e) of this section.

§ 98.225 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter shall be used in the calculations as specified in paragraphs (a) and (b) of this section.

(a) For each missing value of nitric acid production, the substitute data shall be the best available estimate based on all available process data or data used for accounting purposes (such as sales records).

(b) For missing values related to the performance test, including emission factors, production rate, and N₂O concentration, you must conduct a new performance test according to the procedures in §98.224 (a) through (d).

§ 98.226 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) through (p) of this section.

(a) Train identification number.

(b) Annual process N₂O emissions from each nitric acid train (metric tons).

(c) [Reserved]

(d) Annual nitric acid production from each nitric acid train during which N₂O abatement technology is operating (ton acid produced, 100 percent acid basis).

(e) Annual nitric acid production from the nitric acid facility (tons, 100 percent acid basis).

(f) Number of nitric acid trains.

(g) Number of different N₂O abatement technologies per nitric acid train "t".

(h) Abatement technologies used (if applicable).

(i) Abatement technology destruction efficiency for each abatement technology (percent destruction).

(j) Abatement utilization factor for each abatement technology (fraction of annual production that abatement technology is operating).

(k) Type of nitric acid process used for each nitric acid train (low, medium, high, or dual pressure).

(l) Number of times in the reporting year that missing data procedures were followed to measure nitric acid production (months).

§ 98.227 Records that must be retained.

In addition to the information required by §98.3(g), you must retain the records specified in paragraphs (a) through (g) of this section for each nitric acid production facility:

(a) Records of significant changes to process.

(b) Documentation of how process knowledge was used to estimate abatement technology destruction efficiency (if applicable).

(c) Performance test reports.

(d) Number of operating hours in the calendar year for each nitric acid train (hours).

(e) Annual nitric acid permitted production capacity (tons).

(f) Measurements, records, and calculations used to determine reported parameters.

(g) Documentation of the procedures used to ensure the accuracy of the measurements of all reported parameters, including but not limited to, calibration of weighing equipment, flow meters, and other measurement devices. The estimated accuracy of measurements made with these devices must also be recorded, and the technical basis for these estimates must be provided.

§ 98.228 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart W—Petroleum and Natural Gas Systems

SOURCE: 75 FR 74488, Nov. 30, 2010, unless otherwise noted.

§ 98.230 Definition of the source category.

(a) This source category consists of the following industry segments:

(1) Offshore petroleum and natural gas production. Offshore petroleum and natural gas production is any platform structure, affixed temporarily or permanently to offshore submerged lands, that houses equipment to extract hydrocarbons from the ocean or lake floor and that processes and/or transfers such hydrocarbons to storage, transport vessels, or onshore. In addition, offshore production includes secondary platform structures connected to the platform structure via walkways, storage tanks associated with the platform structure and floating production and storage offloading equipment (FPSO). This source category does not include reporting of emissions from offshore drilling and exploration that is not conducted on production platforms.

(2) Onshore petroleum and natural gas production. Onshore petroleum and natural gas production means all equipment on a well pad or associated with
a well pad (including compressors, generators, or storage facilities), and portable non-self-propelled equipment on a well pad or associated with a well pad (including well drilling and completion equipment, workover equipment, gravity separation equipment, auxiliary non-transportation-related equipment, and leased, rented or contracted equipment) used in the production, extraction, recovery, lifting, stabilization, separation or treating of petroleum and/or natural gas (including condensate). This equipment also includes associated storage or measurement vessels and all enhanced oil recovery (EOR) operations using CO₂ and all petroleum and natural gas production located on islands, artificial islands, or structures connected by a causeway to land, an island, or artificial island.

(3) Onshore natural gas processing. Natural gas processing separates and recovers natural gas liquids (NGLs) and/or other non-methane gases and liquids from a stream of produced natural gas using equipment performing one or more of the following processes: oil and condensate removal, water removal, separation of natural gas liquids, sulfur and carbon dioxide removal, fractionation of NGLs, or other processes, and also the capture of CO₂ separated from natural gas streams. This segment also includes all residue gas compression equipment owned or operated by the natural gas processing facility, whether inside or outside the processing facility fence. This source category does not include reporting of emissions from gathering lines and boosting stations. This source category includes:

(i) All processing facilities that fractionate.

(ii) All processing facilities that do not fractionate with throughput of 25 MMscf per day or greater.

(4) Onshore natural gas transmission compression. Onshore natural gas transmission compression means any stationary combination of compressors that move natural gas at elevated pressure from production fields or natural gas processing facilities in transmission pipelines to natural gas distribution pipelines or into storage. In addition, transmission compressor stations may include equipment for liquids separation, natural gas dehydration, and tanks for the storage of water and hydrocarbon liquids. Residue (sales) gas compression operated by natural gas processing facilities are included in the onshore natural gas processing segment and are excluded from this segment. This source category also does not include reporting of emissions from gathering lines and boosting stations—these sources are currently not covered by subpart W.

(5) Underground natural gas storage. Underground natural gas storage means subsurface storage, including depleted gas or oil reservoirs and salt dome caverns that store natural gas that has been transferred from its original location for the primary purpose of load balancing (the process of equalizing the receipt and delivery of natural gas); natural gas underground storage processes and operations (including compression, dehydration and flow measurement, and excluding transmission pipelines); and all the wellheads connected to the compression units located at the facility that inject and recover natural gas into and from the underground reservoirs.

(6) Liquefied natural gas (LNG) storage. LNG storage means onshore LNG storage vessels located above ground, equipment for liquefying natural gas, compressors to capture and re-liquefy boil-off-gas, re-condensers, and vaporization units for re-gasification of the liquefied natural gas.

(7) LNG import and export equipment. LNG import equipment means all onshore or offshore equipment that receives imported LNG via ocean transport, stores LNG, re-gasifies LNG, and delivers re-gasified natural gas to a natural gas transmission or distribution system. LNG export equipment means all onshore or offshore equipment that receives natural gas, liquefies natural gas, store LNG, and transfers the LNG via ocean transportation to any location, including locations in the United States.

(8) Natural gas distribution. Natural gas distribution means the distribution pipelines (not interstate transmission pipelines or intrastate transmission pipelines) and metering and regulating equipment at city gate stations, and
§ 98.231 Reporting threshold.

(a) You must report GHG emissions under this subpart if your facility contains petroleum and natural gas systems and the facility meets the requirements of § 98.2(a)(2). Facilities must report emissions from the offshore petroleum and natural gas production industry segment only if emission sources specified in paragraph § 98.232(c) emit 25,000 metric tons of CO₂ equivalent or more per year. Facilities must report emissions from the natural gas distribution industry segment only if emission sources specified in paragraph § 98.232(i) emit 25,000 metric tons of CO₂ equivalent or more per year.

(b) For applying the threshold defined in § 98.2(a)(2), natural gas processing facilities must also include owned or operated residue gas compression equipment.

§ 98.232 GHGs to report.

(a) You must report CO₂, CH₄, and N₂O emissions from each industry segment specified in paragraph (b) through (a) of this section. CO₂, CH₄, and N₂O emissions from each flare as specified in paragraph (j) of this section, and stationary and portable combustion emissions as applicable as specified in paragraph (k) of this section.

(b) For offshore petroleum and natural gas production, report CO₂, CH₄, and N₂O emissions from equipment leaks, vented emission, and flare emission source types as identified in the data collection and emissions estimation study conducted by BOEMRE in compliance with 30 CFR 250.302 through 304. Offshore platforms do not need to report portable emissions.

(c) For an onshore petroleum and natural gas production facility, report CO₂, CH₄, and N₂O emissions from only the following source types on a well pad or associated with a well pad:

(1) Natural gas pneumatic device venting.

(2) [Reserved]

(3) Natural gas driven pneumatic pump venting.

(4) Well venting for liquids unloading.

(5) Gas well venting during well completions without hydraulic fracturing.

(6) Gas well venting during well completions with hydraulic fracturing.

(7) Gas well venting during well workovers without hydraulic fracturing.

(8) Gas well venting during well workovers with hydraulic fracturing.

(9) Flare stack emissions.

(10) Storage tanks vented emissions from produced hydrocarbons.

(11) Reciprocating compressor rod packing venting.

(12) Well testing venting and flaring.

(13) Associated gas venting and flaring from produced hydrocarbons.

(14) Dehydrator vents.

(15) [Reserved]

(16) EOR injection pump blowdown.

(17) Acid gas removal vents.

(18) EOR hydrocarbon liquids dissolved CO₂.

(19) Centrifugal compressor venting.

(20) [Reserved]

(21) Equipment leaks from valves, connectors, open ended lines, pressure relief valves, pumps, flanges, and other equipment leak sources (such as instruments, loading arms, stuffing boxes, compressor seals, dump lever arms, and breather caps).

(22) You must use the methods in § 98.233(z) and report under this subpart the emissions of CO₂, CH₄, and N₂O from stationary or portable fuel combustion equipment that cannot move on roadways under its own power and drive train, and that are located at an onshore production well pad. Stationary or portable equipment are the following equipment which are integral to the extraction, processing or movement of oil or natural gas: Well drilling and completion equipment, workover...
equipment, natural gas dehydrators, natural gas compressors, electrical generators, steam boilers, and process heaters.

(d) For onshore natural gas processing, report CO$_2$ and CH$_4$ emissions from the following sources:
   (1) Reciprocating compressor rod packing venting.
   (2) Centrifugal compressor venting.
   (3) Blowdown vent stacks.
   (4) Dehydrator vents.
   (5) Acid gas removal vents.
   (6) Equipment leaks from valves, connectors, open ended lines, pressure relief valves, and meters.

(e) For onshore natural gas transmission compression, report CO$_2$ and CH$_4$ emissions from the following sources:
   (1) Reciprocating compressor rod packing venting.
   (2) Centrifugal compressor venting.
   (3) Transmission storage tanks.
   (4) Blowdown vent stacks.
   (5) Natural gas pneumatic device venting.
   (6) [Reserved]
   (7) Equipment leaks from valves, connectors, open ended lines, pressure relief valves, and meters.

(f) For underground natural gas storage, report CO$_2$ and CH$_4$ emissions from the following sources:
   (1) Reciprocating compressor rod packing venting.
   (2) Centrifugal compressor venting.
   (3) Natural gas pneumatic device venting.
   (4) [Reserved]
   (5) Equipment leaks from valves, connectors, open ended lines, pressure relief valves, and meters.
   (6) [Reserved]

(g) For LNG storage, report CO$_2$ and CH$_4$ emissions from the following sources:
   (1) Reciprocating compressor rod packing venting.
   (2) Centrifugal compressor venting.
   (3) Equipment leaks from valves, pump seals, connectors, vapor recovery compressors, and other equipment leak sources.
   (4) LNG import and export equipment, report CO$_2$ and CH$_4$ emissions from the following sources:
      (1) Reciprocating compressor rod packing venting.
      (2) Centrifugal compressor venting.
      (3) Blowdown vent stacks.
      (4) Equipment leaks from valves, pump seals, connectors, vapor recovery compressors, and other equipment leak sources.

(h) LNG import and export equipment, report CO$_2$ and CH$_4$ emissions from the following sources:
   (1) Reciprocating compressor rod packing venting.
   (2) Equipment leaks from valves, pump seals, connectors, valve recovery compressors, and other equipment leak sources.

(i) For natural gas distribution, report emissions from the following sources:
   (1) Above ground meters and regulators at custody transfer city gate stations, including equipment leaks from connectors, block valves, control valves, pressure relief valves, and pressure relief meters, regulators, and open ended lines. Customer meters are excluded.
   (2) Above ground meters and regulators at non-custody transfer city gate stations, including station equipment leaks. Customer meters are excluded.
   (3) Below ground meters and regulators and vault equipment leaks. Customer meters are excluded.
   (4) Pipeline main equipment leaks.
   (5) Service line equipment leaks.
   (6) Report under subpart W of this part the emissions of CO$_2$, CH$_4$, and N$_2$O emissions from stationary fuel combustion sources following the methods in §98.233(z).

(j) All applicable industry segments must report the CO$_2$, CH$_4$, and N$_2$O emissions from each flare.

(k) Report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO$_2$, CH$_4$, and N$_2$O from each stationary fuel combustion unit following the requirements of subpart C. Onshore petroleum and natural gas production facilities must report stationary and portable combustion emissions as specified in paragraph (c) of this section. Natural gas distribution facilities must report stationary combustion emissions as specified in paragraph (i) of this section.

(l) You must report under subpart PP of this part (Suppliers of Carbon Dioxide) CO$_2$ emissions captured and transferred off site by following the requirements of subpart PP.

§98.233 Calculating GHG emissions.

You must calculate and report the annual GHG emissions as prescribed in this section. For actual conditions, reporters must use average atmospheric
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conditions or typical operating conditions as applicable to the respective monitoring methods in this section.

(a) Natural gas pneumatic device venting. Calculate CH₄ and CO₂ emissions from continuous high bleed, continuous low bleed, and intermittent bleed natural gas pneumatic devices using Equation W–1 of this section.

\[
\text{Mass}_{s,j} = \text{Count} \times \text{EF} \times \text{GHG}_i \times \text{Conv}_i \times 24 \times 365
\]  \hspace{1cm} \text{(Eq. W–1)}

Where:

- \(\text{Mass}_{s,j}\) = Annual total mass GHG emissions in metric tons CO₂e per year at standard conditions from a natural gas pneumatic device vent, for GHG \(i\).
- \(\text{Count}\) = Total number of continuous high bleed, continuous low bleed, or intermittent bleed natural gas pneumatic devices of each type as determined in paragraph (a)(1) of this section.
- \(\text{EF}\) = Population emission factors for natural gas pneumatic device venting listed in Tables W–1A, W–3, and W–4 of this subpart for onshore petroleum and natural gas production, onshore natural gas transmission compression, and underground natural gas storage facilities, respectively.
- \(\text{GHG}_i\) = For onshore petroleum and natural gas production facilities, concentration of GHG \(i\), CH₄ or CO₂, in produced natural gas; for facilities listed in §98.230(a)(3) through (a)(8), \(\text{GHG}_i\) equals 1.
- \(\text{Conv}_i\) = Conversion from standard cubic feet to metric tons CO₂e; 0.000410 for CH₄, and 0.00005357 for CO₂.
- 24 \times 365 = Conversion to yearly emissions estimate.

(i) In the first calendar year, the total number of each type, you may count the total of each type, or count any percentage number of each type plus an engineering estimate based on best available data of the number not counted.

(ii) In the second consecutive year, for the total number of each type, you may count the total of each type, or count any percentage number of each type plus an engineering estimate based on best available data of the number not counted.

(iii) In the third consecutive calendar year, complete the count of all pneumatic devices, including any changes to equipment counted in prior years.

(iv) For the calendar year immediately following the third consecutive calendar year, and for calendar years thereafter, facilities must update the total count of pneumatic devices and adjust accordingly to reflect any modifications due to changes in equipment.

(2) For onshore natural gas transmission compression and underground natural gas storage, all natural gas pneumatic devices must be counted in the first year and updated every calendar year.

(b) [Reserved]

(c) Natural gas driven pneumatic pump venting. Calculate CH₄ and CO₂ emissions from natural gas driven pneumatic pump venting using Equation W–2 of this section. Natural gas driven pneumatic pumps covered in paragraph (e) of this section do not have to report emissions under paragraph (c) of this section.

\[
\text{Mass}_{s,j} = \text{Count} \times \text{EF} \times \text{GHG}_i \times \text{Conv}_i \times 24 \times 365
\]  \hspace{1cm} \text{(Eq. W–2)}

Where:

- \(\text{Mass}_{s,j}\) = Annual total mass GHG emissions in metric tons CO₂e per year at standard conditions from all natural gas pneumatic pump venting, for GHG \(i\).
- \(\text{Count}\) = Total number of natural gas pneumatic pumps.
- \(\text{EF}\) = Population emission factors for natural gas pneumatic pump venting listed in Tables W–1A of this subpart for onshore petroleum and natural gas production.
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GHG, = Concentration of GHG 1, CH₄ or CO₂, in produced natural gas.
Conv, = Conversion from standard cubic feet to metric tons CO₂e; 0.000410 for CH₄ and 0.0000357 for CO₂.
24 * 365 = Conversion to yearly emissions estimate.

(d) Acid gas removal (AGR) vents. For AGR vent (including processes such as amine, membrane, molecular sieve or other absorbents and adsorbents), calculate emissions for CO₂ only (not CH₄) vented directly to the atmosphere or through a flare, engine (e.g. permeate from a membrane or de-adsorbed gas from a pressure swing adsorber used as fuel supplement), or sulfur recovery plant using any of the calculation methodologies described in paragraph (d) of this section.

(1) Calculation Methodology 1. If you operate and maintain a CEMS that measures CO₂ emissions according to subpart C of this part, you must calculate CO₂ emissions under this subpart by following the Tier 4 Calculation Methodology and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources). If CEMS and/or volumetric flow rate monitor are not available, you may install a CEMS that complies with the Tier 4 Calculation Methodology in subpart C of this part (General Stationary Fuel Combustion).

(2) Calculation Methodology 2. If CEMS is not available, use the CO₂ composition and annual volume of vent gas to calculate emissions using Equation W–3 of this section.

\[ E_{a,CO_2} = V_S \times V_{o,CO_2} \]  \hspace{1cm} (Eq. W–3)

Where:
- \( E_{a,CO_2} \) = Annual volumetric CO₂ emissions at actual conditions, in cubic feet per year.
- \( V_S \) = Total annual volume of vent gas flowing out of the AGR unit in cubic feet per year at actual conditions as determined by flow meter using methods set forth in §98.234(b).

- \( V_{o,CO_2} \) = Volume fraction of CO₂ content in vent gas out of the AGR unit as determined in (d)(6) of this section.

(3) Calculation Methodology 3. If using CEMS or vent meter is not an option, use the inlet or outlet gas flow rate of the acid gas removal unit to calculate emissions for CO₂ using Equation W–4 of this section.

\[ E_{a,CO_2} = (V + \alpha \times (V \times (V_{ol} - V_{ol})) \times (V_{ol} - V_{ol}) \)]  \hspace{1cm} (Eq. W–4)

Where:
- \( E_{a,CO_2} \) = Annual volumetric CO₂ emissions at actual condition, in cubic feet per year.
- \( V \) = Total annual volume of natural gas flow into or out of the AGR unit in cubic feet per year at actual condition as determined using methods specified in paragraph (d)(5) of this section.
- \( \alpha \) = Factor is 1 if the outlet stream flow is measured. Factor is 0 if the inlet stream flow is measured.
- \( V_{ol} \) = Volume fraction of CO₂ content in natural gas into the AGR unit as determined in paragraph (d)(7) of this section.
- \( V_{ol} \) = Volume fraction of CO₂ content in natural gas out of the AGR unit as determined in paragraph (d)(8) of this section.

(4) Calculation Methodology 4. Calculate emissions using any standard simulation software packages, such as AspenTech HYSYS® and API 4679 AMINECalc, that uses the Peng-Robinson equation of state, and speciates CO₂ emissions. A minimum of the following determined for typical operating conditions over the calendar year by engineering estimate and process knowledge based on best available data must be used to characterize emissions:

(i) Natural gas feed temperature, pressure, and flow rate.

(ii) Acid gas content of feed natural gas.

(iii) Acid gas content of outlet natural gas.

(iv) Unit operating hours, excluding downtime for maintenance or standby.
(v) Exit temperature of natural gas.
(vi) Solvent pressure, temperature, circulation rate, and weight.
(5) Record the gas flow rate of the inlet and outlet natural gas stream of an AGR unit using a meter according to methods set forth in §98.234(b). If you do not have a continuous flow meter, either install a continuous flow meter or use an engineering calculation to determine the flow rate.
(6) If continuous gas analyzer is not available on the vent stack, either install a continuous gas analyzer or take quarterly gas samples from the vent gas stream to determine Vol CO₂ according to methods set forth in §98.234(b).
(7) If a continuous gas analyzer is installed on the inlet gas stream, then the continuous gas analyzer results must be used. If continuous gas analyzer is not available, either install a continuous gas analyzer or take quarterly gas samples from the inlet gas stream to determine Vol according to methods set forth in §98.234(b).
(8) Determine volume fraction of CO₂ content in natural gas out of the AGR unit using one of the methods specified in paragraph (d)(8) of this section.
(i) If a continuous gas analyzer is installed on the outlet gas stream, then the continuous gas analyzer results must be used. If a continuous gas analyzer is not available, you may install a continuous gas analyzer.
(ii) If a continuous gas analyzer is not available or installed, quarterly gas samples may be taken from the outlet gas stream to determine Vol according to methods set forth in §98.234(b).
(iii) Use sales line quality specification for CO₂ in natural gas.
(9) Calculate CO₂ volumetric emissions at standard conditions using calculations in paragraph (t) of this section.
(10) Mass CO₂ emissions shall be calculated from volumetric CO₂ emissions using calculations in paragraph (v) of this section.
(11) Determine if emissions from the AGR unit are recovered and transferred outside the facility. Adjust the emission estimated in paragraphs (d)(1) through (d)(10) of this section downward by the magnitude of emission recovered and transferred outside the facility.
(e) Dehydrator vents. For dehydrator vents, calculate annual CH₄, CO₂ and N₂O (when flared) emissions using calculation methodologies described in paragraphs (e)(1) or (e)(2) of this section.
(1) Calculation Methodology 1. Calculate annual mass emissions from dehydrator vents with throughput greater than or equal to 0.4 million standard cubic feet per day using a software program, such as AspenTech HYSYS® or GRI-GLYCalc, that uses the Peng-Robinson equation of state to calculate the equilibrium coefficient, speciates CH₄ and CO₂ emissions from dehydrators, and has provisions to include regenerator control devices, a separator flash tank, stripping gas and a gas injection pump or gas assist pump. A minimum of the following parameters determined by engineering estimate based on best available data must be used to characterize emissions from dehydrators:
(i) Feed natural gas flow rate.
(ii) Feed natural gas water content.
(iii) Outlet natural gas water content.
(iv) Absorbent circulation pump type (natural gas pneumatic/air pneumatic/electric).
(v) Absorbent circulation rate.
(vi) Absorbent type: including triethylene glycol (TEG), diethylene glycol (DEG) or ethylene glycol (EG).
(vii) Use of stripping natural gas.
(viii) Use of flash tank separator (and disposition of recovered gas).
(ix) Hours operated.
(x) Wet natural gas temperature and pressure.
(xi) Wet natural gas composition. Determine this parameter by selecting one of the methods described under paragraph (e)(2)(xi) of this section.
(A) Use the wet natural gas composition as defined in paragraph (u)(2)(i) of this section.
(B) If wet natural gas composition cannot be determined using paragraph (u)(2)(i) of this section, select a representative analysis.
(C) You may use an appropriate standard method published by a consensus-based standards organization if such a method exists or you may use
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an industry standard practice as specified in §98.234(b)(1) to sample and analyze wet natural gas composition. (D) If only composition data for dry natural gas is available, assume the wet natural gas is saturated.

(2) Calculation Methodology 2. Calculate annual CH\textsubscript{4} and CO\textsubscript{2} emissions from glycol dehydrators with throughput less than 0.4 million cubic feet per day using Equation W-5 of this section:

\[ E_{s,i} = EF_i \times \text{Count} \times 1000 \quad \text{(Eq. W-5)} \]

Where:
- \( E_{s,i} \) = Annual total volumetric GHG emissions (either CO\textsubscript{2} or CH\textsubscript{4}) at standard conditions in cubic feet.
- \( EF_i \) = Population emission factors for glycol dehydrators in thousand standard cubic feet per dehydrator per year. Use 74.5 for CH\textsubscript{4} and 3.26 for CO\textsubscript{2} at 68 \degree F and 14.7 psia or 73.4 for CH\textsubscript{4} and 3.21 for CO\textsubscript{2} at 60 \degree F and 14.7 psia.
- \( \text{Count} \) = Total number of glycol dehydrators with throughput less than 0.4 million cubic feet.
- \( 1000 \) = Conversion of \( EF_i \) to thousand standard cubic to cubic feet.

(4) Calculate annual emissions from dehydrator vents to flares or regenerator fire-box/fire tubes as follows:

(A) Use the dehydrator vent volume and gas composition as determined in paragraphs (e)(1) or (e)(2) of this section.

(B) Use the calculation methodology of flare stacks in paragraph (n) of this section to determine dehydrator vent emissions from the flare or regenerator combustion gas vent.

(5) Dehydrators that use desiccant shall calculate emissions from the amount of gas vented from the vessel every time it is depressurized for the desiccant refilling process using Equation W-6 of this section. Desiccant dehydrators covered in (e)(5) of this section do not have to report emissions under (i) of this section.

\[ E_{s,n} = \frac{(H \times D^2 \times P \times P_2 \times \%G \times 365 \text{days/yr})}{(4 \times P_1 \times T \times 1,000 \text{cf/Mcf} \times 100)} \quad \text{(Eq. W-6)} \]

Where:
- \( E_{s,n} \) = Annual natural gas emissions at standard conditions in cubic feet.
- \( H \) = Height of the dehydrator vessel (ft).
- \( D \) = Inside diameter of the vessel (ft).
- \( P_1 \) = Atmospheric pressure (psia).
- \( P_2 \) = Pressure of the gas (psia).
- \( P \) = \( \pi \times 3.14 \).
- \( \%G \) = Percent of packed vessel volume that is gas.
- \( T \) = Time between refilling (days).
- \( 100 \) = Conversion of \( \%G \) to fraction.

(6) Both CH\textsubscript{4} and CO\textsubscript{2} volumetric and mass emissions shall be calculated from volumetric natural gas emissions using calculations in paragraphs (u) and (v) of this section.

(f) Well venting for liquids unloadings. Calculate CO\textsubscript{2} and CH\textsubscript{4} emissions from well venting for liquids unloading using one of the calculation methodologies described in paragraphs (f)(1), (f)(2) or (f)(3) of this section.

(1) Calculation Methodology 1. For one well of each unique well tubing diameter and producing horizon/formation combination in each gas producing field (see §98.238 for the definition of Field) where gas wells are vented to the atmosphere to expel liquids accumulated in the tubing, a recording flow meter shall be installed on the vent line used to vent gas from the well (e.g.
on the vent line off the wellhead separator or atmospheric storage tank) according to methods set forth in §98.234(b). Calculate emissions from well venting for liquids unloading using Equation W–7 of this section.

\[ E_{a,n} = \sum_{h} \sum_{t} T_{h,t} \times FR_{h,t} \quad \text{(Eq. W–7)} \]

Where:
- \( E_{a,n} \) = Annual natural gas emissions at actual conditions in cubic feet.
- \( T_{h,t} \) = Cumulative amount of time in hours of venting from all wells of the same tubing diameter (\( t \)) and producing horizon (\( h \)) combination during the year.
- \( FR_{h,t} \) = Average flow rate in cubic feet per hour of the measured well venting for the duration of the liquids unloading, under actual conditions as determined in paragraph (f)(1)(i) of this section.

(i) Determine the well vent average flow rate as specified under paragraph (f)(1)(i) of this section.

(A) The average flow rate per hour of venting is calculated for each unique tubing diameter and producing horizon/formation combination in each producing field by averaging the recorded flow rates for the recorded time of one representative well venting to the atmosphere.

(B) This average flow rate is applied to all wells in the field that have the same tubing diameter and producing horizon/formation combination, for the number of hours of venting these wells.

(C) A new average flow rate is calculated every other calendar year for each reporting field and horizon starting the first calendar year of data collection.

(ii) Calculate natural gas volumetric emissions at standard conditions using calculations in paragraph (t) of this section.

(2) Calculation Methodology 2. Calculate emissions from each well venting for liquids unloading using Equation W–8 of this section.

\[ E_{a,n} = \left\{ (0.37 \times 10^{-3}) \times CD^2 \times WD \times SP \times NV \right\} + \left\{ SFR \times (HR - 1.0) \times Z \right\} \quad \text{(Eq. W–8)} \]

Where:
- \( E_{a,n} \) = Annual natural gas emissions at actual conditions, in cubic feet/year.
- \( 0.37 \times 10^{-3} = \frac{3.14 \times \pi}{4} \times \frac{14.7 \times 144}{14.7 \times 144} \) (psia converted to pounds per square feet).
- \( CD \) = Casing diameter (inches).
- \( WD \) = Well depth to first producing horizon (feet).
- \( SP \) = Shut-in pressure (psia).
- \( NV \) = Number of vents per year.
- \( SFR \) = Average sales flow rate of gas well in cubic feet per hour.
- \( HR \) = Hours that the well was left open to the atmosphere during unloading.
- \( 1.0 \) = Hours for average well to blowdown casing volume at shut-in pressure.
- \( Z \) = If \( HR \) is less than 1.0 then \( Z \) is equal to 0. If \( HR \) is greater than or equal to 1.0 then \( Z \) is equal to 1.

(i) Calculate natural gas volumetric emissions at standard conditions using calculations in paragraph (t) of this section.

(ii) [Reserved]

(3) Calculation Methodology 3. Calculate emissions from each well venting to the atmosphere for liquids unloading with plunger lift assist using Equation W–9 of this section.

\[ E_{a,n} = \left\{ (0.37 \times 10^{-3}) \times TD^2 \times WD \times SP \times NV \right\} + \left\{ SFR \times (HR - 0.5) \times Z \right\} \quad \text{(Eq. W–9)} \]

Where:
- \( E_{a,n} \) = Annual natural gas emissions at actual conditions, in cubic feet/year.
- \( 0.37 \times 10^{-3} = \frac{3.14 \times \pi}{4} \times \frac{14.7 \times 144}{14.7 \times 144} \) (psia converted to pounds per square feet).
- \( TD \) = Tubing diameter (inches).
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WD = Tubing depth to plunger bumper (feet).
SP = Sales line pressure (psia).
Nv = Number of vents per year.
SFR = Average sales flow rate of gas well in cubic feet per hour.
HR = Hours that the well was left open to the atmosphere during unloading.
0.5 = Hours for average well to blowdown tubing volume at sales line pressure.
Z = If HR is less than 0.5 then Z is equal to 0. If HR is greater than or equal to 0.5 then Z is equal to 1.

(i) Calculate natural gas volumetric emissions at standard conditions using calculations in paragraph (t) of this section.

(ii) [Reserved]

(4) Both CH\textsubscript{4} and CO\textsubscript{2} volumetric and mass emissions shall be calculated from volumetric natural gas emissions using calculations in paragraphs (u) and (v) of this section.

(g) Gas well venting during completions and workovers from hydraulic fracturing. Calculate CH\textsubscript{4}, CO\textsubscript{2} and N\textsubscript{2}O (when flared) annual emissions from gas well venting during completions involving hydraulic fracturing in wells and well workovers using Equation W–10 of this section. Both CH\textsubscript{4} and CO\textsubscript{2} volumetric and mass emissions shall be calculated from volumetric total gas emissions using calculations in paragraphs (u) and (v) of this section.

\[ E_{a,n} = (T \times FR) - EnF - SG \quad \text{(Eq. W–10)} \]

Where:

- \( E_{a,n} \) = Annual volumetric total gas emissions in cubic feet at standard conditions from gas well venting during completions following hydraulic fracturing.
- \( T \) = Cumulative amount of time in hours of all well completion venting in a field during the year reporting.
- \( FR \) = Average flow rate in cubic feet per hour, under actual conditions, converted to standard conditions, as required in paragraph (g)(1) of this section.
- \( EnF \) = Volume of CO\textsubscript{2} or N\textsubscript{2}O injected gas in cubic feet at standard conditions that was recovered into a sales pipeline. If no gas was recovered for sales, SG is 0.
- \( SG \) = Volume of natural gas in cubic feet at standard conditions that was recovered into a sales pipeline. If no gas was recovered for sales, SG is 0.

(1) The average flow rate for gas well venting to the atmosphere or to a flare during well completions and workovers from hydraulic fracturing shall be determined using either of the calculation methodologies described in this paragraph (g)(1) of this section.

(i) Calculation Methodology 1. For one well completion in each gas producing field and for one well workover in each gas producing field, a recording flow meter (digital or analog) shall be installed on the vent line, ahead of a flare if used, to measure the backflow venting event according to methods set forth in §98.234(b).

(A) The average flow rate in cubic feet per hour of venting to the atmosphere or routed to a flare is determined from the flow recording over the period of backflow venting.

(B) The respective flow rates are applied to all well completions in the producing field and to all well workovers in the producing field for the total number of hours of venting of each of these wells.

(C) New flow rates for completions and workovers are measured every other calendar year for each reporting gas producing field and gas producing geologic horizon in each gas producing field starting in the first calendar year of data collection.

(D) Calculate total volumetric flow rate at standard conditions using calculations in paragraph (t) of this section.

(ii) Calculation Methodology 2. For one well completion in each gas producing field and for one well workover in each gas producing field, record the well flowing pressure upstream (and downstream in subsonic flow) of a well choke according to methods set forth in §98.234(b) to calculate intermittent well flow rate of gas during venting to the atmosphere or a flare. Calculate emissions using Equation W–11 of this
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section for subsonic flow or Equation W–12 of this section for sonic flow:

\[
FR = 1.27 \times 10^5 \cdot A \cdot \sqrt{3430 \cdot T_u \cdot \left[\left(\frac{P_2}{P_1}\right)^{1.515} - \left(\frac{P_2}{P_1}\right)^{1.758}\right]} \quad \text{(Eq. W–11)}
\]

Where:

\( FR \) = Average flow rate in cubic feet per hour, under subsonic flow conditions.
\( A \) = Cross sectional area of orifice (m²).
\( P_1 \) = Upstream pressure (psia).
\( T_u \) = Upstream temperature (degrees Kelvin).
\( P_2 \) = Downstream pressure (psia).
\( 3430 \) = Constant with units of m²/(sec² * K).
\( 1.27 \times 10^5 \) = Conversion from m³/second to ft³/hour.

\[
FR = 1.27 \times 10^5 \cdot A \cdot \sqrt{187.08 \cdot T_u} \quad \text{(Eq. W–12)}
\]

Where:

\( FR \) = Average flow rate in cubic feet per hour, under sonic flow conditions.
\( A \) = Cross sectional area of orifice (m²).
\( T_u \) = Upstream temperature (degrees Kelvin).
\( P_1 \) = Downstream pressure (psia).
\( 187.08 \) = Constant with units of m²/(sec² * K).
\( 1.27 \times 10^5 \) = Conversion from m³/second to ft³/hour.

(A) The average flow rate in cubic feet per hour of venting across the choke is calculated for one well completion in each gas producing field and for one well workover in each gas producing field by averaging the gas flow rates during venting to the atmosphere or routing to a flare.

(B) The respective flow rates are applied to all well completions in the gas producing field and to all well workovers in the gas producing field for the total number of hours of venting of each of these wells.

(C) Flow rates for completions and workovers in each field shall be calculated once every two years for each reporting gas producing field and geo-logic horizon in each gas producing field starting in the first calendar year of data collection.

(D) Calculate total volumetric flow rate at standard conditions using calculations in paragraph (t) of this section.

(2) The volume of CO₂ or N₂ injected into the well reservoir during energized hydraulic fractures will be measured using an appropriate meter as described in 98.234(b) or using receipts of gas purchases that are used for the energized fracture job.

(i) Calculate gas volume at standard conditions using calculations in paragraph (t) of this section.

(ii) [Reserved]

(3) The volume of recovered completion gas sent to a sales line will be measured using existing company records. If data does not exist on sales gas, then an appropriate meter as described in 98.234(b) may be used.

(i) Calculate gas volume at standard conditions using calculations in paragraph (t) of this section.

(ii) [Reserved]

(4) Both CH₄ and CO₂ volumetric and mass emissions shall be calculated from volumetric total emissions using calculations in paragraphs (u) and (v) of this section.

(5) Determine if the well completion or workover from hydraulic fracturing recovered gas with purpose designed equipment that separates saleable gas from the backflow, and sent this gas to a sales line (e.g. reduced emissions completion).

(i) Use the factor SG in Equation W–10 of this section, to adjust the emissions estimated in paragraphs (g)(1) through (g)(4) of this section by the magnitude of emissions captured using reduced emission completions as determined by engineering estimate based on best available data.

(ii) [Reserved]
(6) Calculate annual emissions from gas well venting during well completions and workovers from hydraulic fracturing to flares as follows:

(i) Use the total gas well venting volume during well completions and workovers as determined in paragraph (g) of this section.

(ii) Use the calculation methodology of flare stacks in paragraph (n) of this section to determine gas well venting during well completions and workovers using hydraulic fracturing emissions from the flare. This adjustment to emissions from completions using flaring versus completions without flaring accounts for the conversion of CH$_4$ to CO$_2$ in the flare.

(h) Gas well venting during completions and workovers without hydraulic fracturing. Calculate CH$_4$, CO$_2$ and N$_2$O (when flared) emissions from each gas well venting during well completions and workovers not involving hydraulic fracturing and well workovers not involving hydraulic fracturing using Equation W–13 of this section:

\[
E_{a,n} = N_{wo} \times EF_{wo} + \sum_{f} V_f \times T_f \quad \text{Eq. W-13}
\]

Where:

- $E_{a,n}$ = Annual natural gas emissions in cubic feet at actual conditions from gas well venting during well completions and workovers without hydraulic fracturing.
- $N_{wo}$ = Number of workovers per field not involving hydraulic fracturing in the reporting year.
- $EF_{wo}$ = Emission Factor for non-hydraulic fracturing well workover venting in actual cubic feet per workover. $EF_{wo} = 2,454$ standard cubic feet per well workover without hydraulic fracturing.
- $f$ = Total number of well completions without hydraulic fracturing in a field.
- $V_f$ = Average daily gas production rate in cubic feet per hour of each well completion without hydraulic fracturing. This is the total annual gas production volume divided by total number of hours the wells produced to the sales line. For completed wells that have not established a production rate, you may use the average flow rate from the first 30 days of production. If the well is completed less than 30 days from the end of the calendar year, the first 30 days of the production straddling the current and following calendar years shall be used.
- $T_f$ = Time each well completion without hydraulic fracturing was venting in hours during the year.

(1) Calculate natural gas volumetric emissions at standard conditions using calculations in paragraph (t) of this section.

(2) Both CH$_4$ and CO$_2$ volumetric and mass emissions shall be calculated from volumetric natural gas emissions using calculations in paragraphs (u) and (v) of this section.

(3) Calculate annual emissions from gas well venting during well completions and workovers not involving hydraulic fracturing to flares as follows:

(i) Use the gas well venting volume during well completions and workovers not involving hydraulic fracturing from the flare.

(ii) Use the calculation methodology of flare stacks in paragraph (n) of this section to determine gas well venting during well completions and workovers without hydraulic fracturing from the flare.

(i) Blowdown vent stacks. Calculate CO$_2$ and CH$_4$ blowdown vent stack emissions from depressurizing equipment to the atmosphere (excluding depressurizing to a flare, over-pressure relief, operating pressure control venting and blowdown of non-GHG gases; desiccant dehydrator blowdown venting before reloading is covered in paragraph (e)(5) of this section) as follows:

(1) Calculate the total volume (including pipelines, compressor case or cylinders, manifolds, suction bottles, discharge bottles, and vessels) between isolation valves determined by engineering estimate based on best available data.

(2) If the total volume between isolation valves is greater than or equal to 50 standard cubic feet, retain logs of the number of blowdowns for each...
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equipment type (including but not limited to compressors, vessels, pipelines, headers, fractionators, and tanks). Blowdown volumes smaller than 50 standard cubic feet are exempt from reporting under paragraph (i) of this section.

(3) Calculate the total annual venting emissions for each equipment type using Equation W–14 of this section:

\[
E_{s,n} = N \left[ V \left( \frac{459.67 + T_a}{459.67 + T_s} \frac{P_s}{P_a} \right) - V \right] C \\
\text{(Eq. W–14)}
\]

Where:
- \( E_{s,n} \) = Annual natural gas venting emissions at standard conditions from blowdowns in cubic feet.
- \( N \) = Number of repetitive blowdowns for each equipment type of a unique volume in calendar year.
- \( V \) = Total volume of blowdown equipment chambers (including pipelines, compressors and vessels) between isolation valves in cubic feet.
- \( C \) = Purge factor that is 1 if the equipment is not purged or zero if the equipment is purged using non-GHG gases.
- \( T_s \) = Temperature at standard conditions (°F).
- \( T_a \) = Temperature at actual conditions in the blowdown equipment chamber (°F).
- \( P_s \) = Absolute pressure at standard conditions (psia).
- \( P_a \) = Absolute pressure at actual conditions in the blowdown equipment chamber (psia).

(4) Calculate both CH\(_4\) and CO\(_2\) mass emissions from volumetric natural gas emissions using calculations in paragraph (v) of this section.

(5) Calculate total annual venting emissions for all blowdown vent stacks by adding all standard volumetric and mass emissions determined in Equation W–14 and paragraph (i)(4) of this section.

(j) Onshore production storage tanks. Calculate CH\(_4\) and CO\(_2\) emissions from onshore production storage tanks using operating conditions in the last wellhead gas-liquid separator before liquid transfer to storage tanks. Calculate flashing emissions with a software program, such as AspenTech HYSYS\textsuperscript{®} or API 4697 E&P Tank, that uses the Peng-Robinson equation of state, models flashing emissions, and speciates CH\(_4\) and CO\(_2\) emissions that will result when the oil from the separator enters an atmospheric pressure storage tank. A minimum of the following parameters determined for typical operating conditions over the year by engineering estimate and process knowledge based on best available data must be used to characterize emissions from liquid transferred to tanks.

(i) Separator temperature.
(ii) Separator pressure.
(iii) Sales oil or stabilized oil API gravity.
(iv) Sales oil or stabilized oil production rate.
(v) Ambient air temperature.
(vi) Ambient air pressure.
(vii) Separator oil composition and Reid vapor pressure. If this data is not available, determine these parameters by selecting one of the methods described under paragraph (j)(1)(viii) of this section.

(A) If separator oil composition and Reid vapor pressure default data are provided with the software program, select the default values that most closely match your separator pressure first, and API gravity secondarily.

(B) If separator oil composition and Reid vapor pressure data are available through your previous analysis, select the latest available analysis that is representative of produced crude oil or condensate from the field.
(C) Analyze a representative sample of separator oil in each field for oil composition and Reid vapor pressure using an appropriate standard method published by a consensus-based standards organization.

(2) Calculation Methodology 2. Calculate annual CH₄ and CO₂ emissions from onshore production storage tanks for wellhead gas-liquid separators with oil throughput greater than or equal to 10 barrels per day by assuming that all of the CH₄ and CO₂ in solution at separator temperature and pressure is emitted from oil sent to storage tanks. You may use an appropriate standard method published by a consensus-based standards organization if such a method exists or you may use an industry standard practice as described in §98.234(b)(1) to sample and analyze separator oil composition at separator pressure and temperature.

(3) Calculation Methodology 3. For wells with oil production greater than or equal to 10 barrels per day that flow directly to atmospheric storage tanks without passing through a wellhead separator, calculate CH₄ and CO₂ emissions by either of the methods in paragraph (j)(3) of this section:

(i) If well production oil and gas compositions are available through your previous analysis, select the latest available analysis that is representative of produced oil and gas from the field and assume all of the CH₄ and CO₂ in both oil and gas are emitted from the tank.

(ii) If well production oil and gas compositions are not available, use default oil and gas compositions in software programs, such as API 4697 E&P Tank, that most closely match your well production gas/oil ratio and API gravity and assume all of the CH₄ and CO₂ in both oil and gas are emitted from the tank.

(4) Calculation Methodology 4. For wells with oil production greater than or equal to 10 barrels per day that flow to a separator not at the well pad, calculate CH₄ and CO₂ emissions by either of the methods in paragraph (j)(4) of this section:

(i) If well production oil and gas compositions are available through your previous analysis, select the latest available analysis that is representative of oil at separator pressure determined by best available data and assume all of the CH₄ and CO₂ in the oil is emitted from the tank.

(ii) If well production oil composition is not available, use default oil composition in software programs, such as API 4697 E&P Tank, that most closely match your well production API gravity and pressure in the off-well pad separator determined by best available data. Assume all of the CH₄ and CO₂ in the oil phase is emitted from the tank.

(5) Calculation Methodology 5. For well pad gas-liquid separators and for wells flowing off a well pad without passing through a gas-liquid separator with throughput less than 10 barrels per day use Equation W–15 of this section:

\[ E_{s,i} = EF_i \times \text{Count} \] (Eq. W–15)

Where:

- \( E_{s,i} \) = Annual total volumetric GHG emissions (either CO₂ or CH₄) at standard conditions in cubic feet.
- \( EF_i \) = Populations emission factor for separators and wells in thousand standard cubic feet per separator or well per year, for crude oil use 4.3 for CH₄ and 2.9 for CO₂ at 68 °F and 14.7 psia, and for gas condensate use 17.5 for CH₄ and 2.9 for CO₂ at 68 °F and 14.7 psia.
- \( \text{Count} \) = Total number of separators and wells with throughput less than 10 barrels per day.

(6) Determine if the storage tank receiving your separator oil has a vapor recovery system.

(i) Adjust the emissions estimated in paragraphs (j)(1) through (j)(5) of this section downward by the magnitude of emissions recovered using a vapor recovery system as determined by engineering estimate based on best available data.

(ii) [Reserved]

(7) Determine if the storage tank receiving your separator oil is sent to flare(s).
(i) Use your separator flash gas volume and gas composition as determined in this section.

(ii) Use the calculation methodology of flare stacks in paragraph (n) of this section to determine your contribution to storage tank emissions from the flare.

(8) Calculate emissions from occurrences of well pad gas-liquid separator liquid dump valves not closing during the calendar year by using Equation W–16 of this section.

\[ E_{s,j} = (C F_n \times E_n \times T_n) + (E_f \times (8760 - T_n)) \]  

(Eq. W–16)

Where:

- \( E_{s,i} \) = Annual total volumetric GHG emissions at standard conditions from each storage tank in cubic feet.
- \( E_n \) = Storage tank emissions as determined in Calculation Methodologies 1, 2, or 5 in paragraphs (j)(1) through (j)(5) of this section (with wellhead separators) during time \( T_n \) in cubic feet per hour.
- \( T_n \) = Total time the dump valve is not closing properly in the calendar year in hours. \( T_n \) is estimated by maintenance or operations records (records) such that when a record shows the valve to be open improperly, it is assumed the valve was open for the entire time period preceding the record starting at either the beginning of the calendar year or the previous record showing it closed properly within the calendar year. If a subsequent record shows it is closing properly, then assume from that time forward the valve closed properly until either the next record of it not closing properly or, if there is no subsequent record, the end of the calendar year.
- \( C F_n \) = Correction factor for tank emissions for time period \( T_n \) is 3.87 for crude oil production. Correction factor for tank emissions for time period \( T_n \) is 5.37 for gas condensate production. Correction factor for tank emissions for time period \( T_n \) is 1.0 for periods when the dump valve is closed.
- \( E_t \) = Storage tank emissions as determined in Calculation Methodologies 1, 2, or 3 in paragraphs (j)(1) through (j)(5) of this section at maintenance or operations during the time the dump valve is closing properly (ie. 8760–\( T_n \)) in cubic feet per hour.

(9) Calculate both \( \text{CH}_4 \) and \( \text{CO}_2 \) mass emissions from volumetric natural gas emissions using calculations in paragraph (v) of this section.

(k) Transmission storage tanks. For condensate storage tanks, either water or hydrocarbon, without vapor recovery or thermal control devices in onshore natural gas transmission compression facilities calculate \( \text{CH}_4 \), \( \text{CO}_2 \), and \( \text{N}_2 \)O (when flared) annual emissions from compressor scrubber dump valve leakage as follows:

(1) Monitor the tank vapor vent stack annually for emissions using an optical gas imaging instrument according to methods set forth in §98.234(a)(1) for a duration of 5 minutes. Or you may annually monitor leakage through compressor scrubber dump valve(s) into the tank using an acoustic leak detection device according to methods set forth in §98.234(a)(5).

(2) If the tank vapors are continuous for 5 minutes, or the acoustic leak detection device detects a leak, then use one of the following two methods in paragraph (k)(2) of this section to quantify emissions:

(i) Use a meter, such as a turbine meter, to estimate tank vapor volumes according to methods set forth in §98.234(b). If you do not have a continuous flow measurement device, you may install a flow measuring device on the tank vapor vent stack.

(ii) Use an acoustic leak detection device on each scrubber dump valve connected to the tank according to the method set forth in §98.234(a)(5).

(iii) Use the appropriate gas composition in paragraph (u)(2)(iii) of this section.

(3) If the leaking dump valve(s) is fixed following leak detection, the annual emissions shall be calculated from the beginning of the calendar year to the time the valve(s) is repaired.

(4) Calculate emissions from storage tanks to flares as follows:

(i) Use the storage tank emissions volume and gas composition as determined in either paragraph (j)(1) of this...
section or with an acoustic leak detection device in paragraphs (k)(1) through (k)(3) of this section.

(ii) Use the calculation methodology of flare stacks in paragraph (n) of this section to determine storage tank emissions from the flare.

(i) Well testing venting and flaring. Calculate CH₄, CO₂, and N₂O (when flared) well testing venting and flaring emissions as follows:

(1) Determine the gas to oil ratio (GOR) of the hydrocarbon production from each well tested.

(2) If GOR cannot be determined from your available data, then you must measure quantities reported in this section according to one of the two procedures in paragraph (l)(2) of this section to determine GOR:

(i) You may use an appropriate standard method published by a consensus-based standards organization if such a method exists.

(ii) Or you may use an industry standard practice as described in §98.234(b).

(3) Estimate venting emissions using Equation W–17 of this section.

\[ E_{a,n} = GOR \times FR \times D \quad (Eq. \ W-17) \]

Where:

\[ E_{a,n} = \text{Annual volumetric natural gas emissions from well testing in cubic feet under actual conditions.} \]

\[ GOR = \text{Gas to oil ratio in cubic feet of gas per barrel of oil; oil here refers to hydrocarbon liquids produced of all API gravities.} \]

\[ FR = \text{Flow rate in barrels of oil per day for the well being tested.} \]

\[ D = \text{Number of days during the year, the well is tested.} \]

(4) Calculate natural gas volumetric emissions at standard conditions using calculations in paragraph (t) of this section.

(5) Calculate both CH₄ and CO₂ volumetric and mass emissions from volumetric natural gas emissions using calculations in paragraphs (u) and (v) of this section.

(6) Calculate emissions from well testing to flares as follows:

(i) Use the well testing emissions volume and gas composition as determined in paragraphs (l)(1) through (3) of this section.

(ii) Use the calculation methodology of flare stacks in paragraph (n) of this section to determine well testing emissions from the flare.

(m) Associated gas venting and flaring. Calculate CH₄, CO₂, and N₂O (when flared) associated gas venting and flaring emissions not in conjunction with well testing (refer to paragraph (l): Well testing venting and flaring of this section) as follows:

(1) Determine the GOR of the hydrocarbon production from each well whose associated natural gas is vented or flared. If GOR from each well is not available, the GOR from a cluster of wells in the same field shall be used.

(2) If GOR cannot be determined from your available data, then use one of the two procedures in paragraph (m)(2) of this section to determine GOR:

(i) You may use an appropriate standard method published by a consensus-based standards organization if such a method exists.

(ii) Or you may use an industry standard practice as described in §98.234(b).

(3) Estimate venting emissions using Equation W–18 of this section.

\[ E_{u,n} = GOR \times V \quad (Eq. \ W-18) \]

Where:

\[ E_{u,n} = \text{Annual volumetric natural gas emissions from associated gas venting under actual conditions, in cubic feet.} \]

\[ GOR = \text{Gas to oil ratio in cubic feet of gas per barrel of oil; oil here refers to hydrocarbon liquids produced of all API gravities.} \]
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V = Volume of oil produced in barrels in the calendar year during which associated gas was vented or flared.

(4) Calculate natural gas volumetric emissions at standard conditions using calculations in paragraph (t) of this section.

(5) Calculate both CH\textsubscript{4} and CO\textsubscript{2} volumetric and mass emissions from volumetric natural gas emissions using calculations in paragraphs (u) and (v) of this section.

(6) Calculate emissions from associated natural gas to flares as follows:

(i) Use the associated natural gas volume and gas composition as determined in paragraph (m)(1) through (4) of this section.

(ii) Use the calculation methodology of flare stacks in paragraph (n) of this section to determine associated gas emissions from the flare.

(n) Flare stack emissions. Calculate CO\textsubscript{2}, CH\textsubscript{4}, and N\textsubscript{2}O emissions from a flare stack as follows:

(1) If you have a continuous flow measurement device on the flare, you must use the measured flow volumes to calculate the flare gas emissions. If all of the flare gas is not measured by the existing flow measurement device, then the flow not measured can be estimated using engineering calculations based on best available data or company records. If you do not have a continuous flow measurement device on the flare, you can install a flow measuring device on the flare or use engineering calculations based on process knowledge, company records, and best available data.

(2) If you have a continuous gas composition analyzer on gas to the flare, you must use these compositions in calculating emissions. If you do not have a continuous gas composition analyzer on gas to the flare, you must use the appropriate gas compositions for each stream of hydrocarbons going to the flare as follows:

(i) For onshore natural gas production, determine natural gas composition using (u)(2)(i) of this section.

(ii) For onshore natural gas processing, when the stream going to flare is natural gas, use the GHG mole percent in feed natural gas for all streams upstream of the de-methanizer or dew point control, and GHG mole percent in facility specific residue gas to transmission pipeline systems for all emissions sources downstream of the de-methanizer overhead or dew point control for onshore natural gas processing facilities.

(iii) When the stream going to the flare is a hydrocarbon product stream, such as ethane, propane, butane, pentane-plus and mixed light hydrocarbons, then use a representative composition from the source for the stream determined by engineering calculation based on process knowledge and best available data.

(3) Determine flare combustion efficiency from manufacturer. If not available, assume that flare combustion efficiency is 98 percent.

(4) Calculate GHG volumetric emissions at actual conditions using Equations W–19, W–20, and W–21 of this section.

\[
E_{a,CH_4}(\text{un-combusted}) = V_a \times (1 - \eta) \times X_{CH_4} \quad (\text{Eq. W–19})
\]

\[
E_{a,CO_2}(\text{un-combusted}) = V_a \times X_{CO_2} \quad (\text{Eq. W–20})
\]

\[
E_{a,CO_2}(\text{combusted}) = \sum_j \eta_j \times V_a \times Y_j \times R_j \quad (\text{Eq. W–21})
\]

Where:

- \(E_{a,CH_4}(\text{un-combusted})\) = Contribution of annual un-combusted CH\textsubscript{4} emissions from flare stack in cubic feet, under actual conditions.

- \(E_{a,CO_2}(\text{un-combusted})\) = Contribution of annual un-combusted CO\textsubscript{2} emissions from

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- flare stack in cubic feet, under actual conditions.
  \[ E_a,\text{CO}_2(\text{combusted}) = \text{Contribution of annual combusted CO}_2 \text{ emissions from flare stack in cubic feet, under actual conditions.} \]
- Volume of gas sent to flare in cubic feet, during the year.
  \[ V_a = \text{Volume of gas sent to flare in cubic feet, during the year.} \]
- \( \eta = \text{Fraction of gas combusted by a burning flare (default is 0.98). For gas sent to an unlit flare, } \eta \text{ is zero.} \]
- \( X_{\text{CH}_4} = \text{Mole fraction of CH}_4 \text{ in gas to the flare.} \)
- \( X_{\text{CO}_2} = \text{Mole fraction of CO}_2 \text{ in gas to the flare.} \)
- \( Y_i = \text{Mole fraction of gas hydrocarbon constituents } j \text{ (such as methane, ethane, propane, butane, and pentanes-plus).} \)
- \( R_i = \text{Number of carbon atoms in the gas hydrocarbon constituent } j \text{: 1 for methane, 2 for ethane, 3 for propane, 4 for butane, and 5 for pentanes-plus).} \)

5) Calculate GHG volumetric emissions at standard conditions using calculations in paragraph (t) of this section.

6) Calculate both CH\(_4\) and CO\(_2\) mass emissions from volumetric CH\(_4\) and CO\(_2\) emissions using calculation in paragraph (v) of this section.

7) Calculate total annual emission from flare stacks by summing Equation W–40, Equation W–19, Equation W–20 and Equation W–21 of this section.

8) Calculate \( N_2O \) emissions from flare stacks using Equation W–40 in paragraph (2) of this section.

The flare emissions determined under paragraph (n) of this section must be corrected for flare emissions calculated and reported under other paragraphs of this section to avoid double counting of these emissions.

(o) Centrifugal compressor venting. Calculate CH\(_4\), CO\(_2\) and \( N_2O \) (when flared) emissions from both wet seal and dry seal centrifugal compressor vents as follows:

1) For each centrifugal compressor covered by §98.232 (d)(2), (e)(2), (f)(2), (g)(2), and (h)(2) you must conduct an annual measurement in the operating mode in which it is found. Measure emissions from all vents (including emissions manifolded to common vents) including wet seal oil degassing vents, unit isolation valve vents, and blowdown valve vents. Record emissions from the following vent types in the specified compressor modes during the annual measurement.

(i) Operating mode, blowdown valve leakage through the blowdown vent, wet seal and dry seal compressors.

(ii) Operating mode, wet seal oil degassing vents.

(iii) Not operating, depressurized mode, unit isolation valve leakage through open blowdown vent, without blind flanges, wet seal and dry seal compressors.

(A) For the not operating, depressurized mode, each compressor must be measured at least once in any three consecutive calendar years. If a compressor is not operated and has blind flanges in place throughout the 3 year period, measurement is not required in this mode. If the compressor is in standby depressurized mode without blind flanges in place and is not operated throughout the 3 year period, it must be measured in the standby depressurized mode.

2) For wet seal oil degassing vents, determine vapor volumes sent to an atmospheric vent or flare, using a temporary meter such as a vane anemometer or permanent flow meter according to §98.234(b) of this section. If you do not have a permanent flow meter, you may install a permanent flow meter on the wet seal oil degassing tank vent.

3) For blowdown valve leakage and unit isolation valve leakage to open ended vents, you can use one of the following methods: Calibrated bagging or high volume sampler according to methods set forth in §98.234(c) and §98.234(d), respectively. For through valve leakage, such as isolation valves, you may use an acoustic leak detection device according to methods set forth in §98.234(a). If you do not have a flow meter, you may install a port for insertion of a temporary meter, or a permanent flow meter, on the vents.

4) Estimate annual emissions using the flow measurement and Equation W–22 of this section.
Where:

- $E_{s,i,m} =$ Annual GHG (either CH\(_4\) or CO\(_2\)) volumetric emissions at standard conditions, in cubic feet.
- $MT_m =$ Measured gas emissions in standard cubic feet per hour.
- $T_m =$ Total time the compressor is in the mode for which $E_{s,i,m}$ is being calculated, in the calendar year in hours.
- $M_{i,m} =$ Mole fraction of GHG \(i\) in the vent gas; use the appropriate gas compositions in paragraph (u)(2) of this section.
- $B_m =$ Fraction of operating time that the vent gas is sent to vapor recovery or fuel gas as determined by keeping logs of the number of operating hours for the vapor recovery system and the time that vent gas is directed to the fuel gas system or sales.

(5) Calculate annual emissions from each centrifugal compressor using Equation W–23 of this section.

$$E_{s,i} = \sum_m EF_m * T_m * M_{i,m} * (1 - B_m) \quad \text{(Eq. W–22)}$$

Where:

- $E_{s,i} =$ Annual total volumetric GHG emissions at standard conditions from each centrifugal compressor in cubic feet.
- $EF_m =$ Reporter emission factor for each mode \(m\), in cubic feet per hour, from Equation W–24 of this section as calculated in paragraph 6.
- $T_m =$ Total time in hours per year the compressor was in each mode, as listed in paragraph (o)(1)(i) through (o)(1)(iii).
- $GHG_i =$ For onshore natural gas processing facilities, concentration of GHG \(i\), CH\(_4\) or CO\(_2\), in produced natural gas or feed natural gas; for other facilities listed in §98.230(a)(4) through (a)(8), GHG equals 1.

(6) You shall use the flow measurements of operating mode wet seal oil degassing vent, operating mode blowdown valve vent and not operating depressurized mode isolation valve vent for all the reporter’s compressor modes not measured in the calendar year to develop the following emission factors using Equation W–24 of this section for each emission source and mode as listed in paragraph (o)(1)(i) through (o)(1)(iii).

$$EF_m = \frac{MT_m}{Count_m} \quad \text{(Eq. W–24)}$$

Where:

- $EF_m =$ Reporter emission factors for compressor in the three modes \(m\) (as listed in paragraph (o)(1)(i) through (o)(1)(iii)) in cubic feet per hour.
- $MT_m =$ Flow Measurements from all centrifugal compressor vents in each mode in (o)(1)(i) through (o)(1)(iii) of this section in cubic feet per hour.
- $Count_m =$ Total number of compressors measured.
- \(m\) = Compressor mode as listed in paragraph (o)(1)(i) through (o)(1)(iii).

(i) The emission factors must be calculated annually. You must use all measurements from the current calendar year and the preceding two calendar years, totaling three consecutive calendar years of measurements in paragraph (o)(6) of this section.

(ii) [Reserved]

(7) Onshore petroleum and natural gas production shall calculate emissions from centrifugal compressor wet seal oil degassing vents as follows:
Where:

\[ E_{s,i} = \text{Annual total volumetric GHG emissions at standard conditions from centrifugal compressor wet seals in cubic feet.} \]

\[ \text{Count} = \text{Total number of centrifugal compressors for the reporter.} \]

\[ EF_i = \text{Emission factor for GHG}_i. \text{ Use 12.2 million standard cubic feet per year per compressor for CH}_4 \text{ and 538 thousand standard cubic feet per year per compressor for CO}_2 \text{ at 68°F and 14.7 psia or 12 million standard cubic feet per year per compressor for CH}_4 \text{ and 530 thousand standard cubic feet per year per compressor for CO}_2 \text{ at 60°F and 14.7 psia.} \]

(8) Calculate both CH\(_4\) and CO\(_2\) mass emissions from volumetric emissions using calculations in paragraph (v) of this section.

(9) Calculate emissions from seal oil degassing vent vapors to flares as follows:

(i) Use the seal oil degassing vent vapor volume and gas composition as determined in paragraphs (o)(5) of this section.

(ii) Use the calculation methodology of flare stacks in paragraph (n) of this section to determine degassing vent vapor emissions from the flare.

(p) Reciprocating compressor venting.

Calculate CH\(_4\) and CO\(_2\) emissions from all reciprocating compressor vents as follows. For each reciprocating compressor covered in §98.232(d)(1), (e)(1), (f)(1), (g)(1), and (h)(1) you must conduct an annual measurement for each compressor in the mode in which it is found during the annual measurement, except as specified in paragraph (p)(9) of this section. Measure emissions from (including emissions manifolded to common vents) reciprocating rod packing vents, unit isolation valve vents, and blowdown valve vents. Record emissions from the following vent types in the specified compressor modes during the annual measurement as follows:

(1) Operating or standby pressurized mode, blowdown vent leakage through the blowdown vent stack.

(2) Operating mode, reciprocating rod packing emissions.

(3) Not operating, depressurized mode, unit isolation valve leakage through the blowdown vent stack, without blind flanges.

(i) For the not operating, depressurized mode, each compressor must be measured at least once in any three consecutive calendar years if this mode is not found in the annual measurement. If a compressor is not operated and has blind flanges in place throughout the 3 year period, measurement is not required in this mode. If the compressor is in standby depressurized mode without blind flanges in place and is not operated throughout the 3 year period, it must be measured in the standby depressurized mode.

(ii) [Reserved]

(4) If reciprocating rod packing and blowdown vent are connected to an open-ended vent line use one of the following two methods to calculate emissions:

(i) Measure emissions from all vents (including emissions manifolded to common vents) including rod packing, unit isolation valves, and blowdown vents using either calibrated bagging or high volume sampler according to methods set forth in §98.234(c) and §98.234(d), respectively.

(ii) Use a temporary meter such as a vane anemometer or a permanent meter such as an orifice meter to measure or high volume sampler according to methods set forth in §98.234(b). If you do not have a permanent flow meter, you may install a port for insertion of a temporary or a permanent flow meter on the vents. For through-valve leakage to open ended vents, such as unit isolation valves on not operating, depressurized compressors and blowdown valves on pressurized compressors, you may use an acoustic detection device according to methods set forth in §98.234(a).

(5) If reciprocating rod packing is not equipped with a vent line use the following method to calculate emissions:
(i) You must use the methods described in §98.234(a) to conduct annual leak detection of equipment leaks from the packing case into an open distance piece, or from the compressor crank case breather cap or other vent with a closed distance piece.

(ii) Measure emissions found in paragraph (p)(5)(i) of this section using an appropriate meter, or calibrated bag, or high volume sampler according to methods set forth in §98.234(b), (c), and (d), respectively.

(6) Estimate annual emissions using the flow measurement and Equation W–26 of this section.

\[ E_{s,i,m} = M_{T_m} \cdot T \cdot M_{i,m} \quad \text{(Eq. W–26)} \]

Where:
- \( E_{s,i,m} \) = Annual GHG \( i \) (either CH\(_4\) or CO\(_2\)) volumetric emissions at standard conditions, in cubic feet.
- \( M_{T_m} \) = Measured gas emissions in standard cubic feet per hour.
- \( T \) = Total time the compressor is in the mode for which \( E_{s,i,m} \) is being calculated, in the calendar year in hours.
- \( M_{i,m} \) = Mole fraction of GHG \( i \) in gas; use the appropriate gas compositions in paragraph (u)(2) of this section.

(7) Calculate annual emissions from each reciprocating compressor using Equation W–27 of this section.

\[ E_{s,j} = \sum_mE_{F_m} \cdot T \cdot GHG_i \quad \text{(Eq. W–27)} \]

Where:
- \( E_{s,j} \) = Annual total volumetric GHG emissions at standard conditions from each reciprocating compressor in cubic feet.
- \( E_{F_m} \) = Reporter emission factor for each mode, \( m \), in cubic feet per hour, from Equation W–28 of this section as calculated in paragraph (p)(7)(i) of this section.
- \( T \) = Total time in hours per year the compressor was in each mode, \( m \), as listed in paragraph (p)(1) through (p)(3).
- \( GHG_i \) = For onshore natural gas processing facilities, concentration of GHG \( i \), CH\(_4\) or CO\(_2\), in produced natural gas or feed natural gas; for other facilities listed in §98.230(a)(4) through (a)(8), GHG, equals 1.

\[ E_{F_m} = \sum\frac{M_{T_m}}{C_{ount_m}} \quad \text{(Eq. W–28)} \]

Where:
- \( E_{F_m} \) = Reporter emission factors for compressor in the three modes, \( m \), in cubic feet per hour.
- \( M_{T_m} \) = Meter readings from all reciprocating compressor vents in each and mode, \( m \), in cubic feet per hour.
- \( C_{ount_m} \) = Total number of compressors measured in each mode, \( m \).

\( m \) = Compressor mode as listed in paragraph (p)(1) through (p)(3).
(A) You must combine emissions for blowdown vents, measured in the operating and standby pressurized modes.

(B) The emission factors must be calculated annually. You must use all measurements from the current calendar year and the preceding two calendar years, totaling three consecutive calendar years of measurements.

(ii) [Reserved]

(8) Determine if the reciprocating compressor vent vapors are sent to a vapor recovery system.

(i) Adjust the emissions estimated in paragraphs (p)(7) of this section downward by the magnitude of emissions recovered using a vapor recovery system as determined by engineering estimate based on best available data.

(ii) [Reserved]

(9) Onshore petroleum and natural gas production shall calculate emissions from reciprocating compressors as follows:

\[
E_{s,i} = \text{Count} \times EF_i
\]

(Eq. W-29)

Where:

\( E_{s,i} \) = Annual total volumetric GHG emissions at standard conditions from reciprocating compressors for the reporter.

\( \text{Count} \) = Total number of reciprocating compressors for the reporter.

\( EF_i \) = Emission factor for GHG \( i \). Use 9.63 thousand standard cubic feet per year per compressor for \( \text{CH}_4 \) and 0.535 thousand standard cubic feet per year per compressor for \( \text{CO}_2 \) at 68 °F and 14.7 psia or 9.48 thousand standard cubic feet per year per compressor for \( \text{CH}_4 \) and 0.527 thousand standard cubic feet per year per compressor for \( \text{CO}_2 \) at 60 °F and 14.7 psia.

(10) Estimate \( \text{CH}_4 \) and \( \text{CO}_2 \) volumetric and mass emissions from volumetric natural gas emissions using the calculations in paragraphs (u) and (v) of this section.

(q) Leak detection and leaker emission factors. You must use the methods described in §98.234(a) to conduct leak detection(s) of equipment leaks from all sources listed in §98.232(d)(7), (e)(7), (f)(5), (g)(3), (h)(4), and (i)(1). This paragraph (q) applies to emissions sources in streams with gas content greater than 10 percent \( \text{CH}_4 \) plus \( \text{CO}_2 \) by weight. Emissions sources in streams with gas content less than 10 percent \( \text{CH}_4 \) plus \( \text{CO}_2 \) by weight do not need to be reported. Tubing systems equal to or less than one half inch diameter are exempt from the requirements of this paragraph (q) and do not need to be reported. If equipment leaks are detected for sources listed in this paragraph (q), calculate emissions using Equation W-30 of this subpart for each source with equipment leaks.

\[
E_{s,i} = GHG_i \times \sum_x EF_s \times T_x
\]

(Eq. W-30)

Where:

\( E_{s,i} \) = Annual total volumetric GHG emissions at standard conditions from each equipment leak source in cubic feet.

\( x \) = Total number of this type of emissions source found to be leaking during \( T_x \).

\( EF_s \) = Leaker emission factor for specific sources listed in Table W-2 through Table W-7 of this subpart.

\( GHG_i \) = For onshore natural gas processing facilities, concentration of \( GHG_i \), \( \text{CH}_4 \), or \( \text{CO}_2 \), in the total hydrocarbon of the feed natural gas; for other facilities listed in §98.239(a)(4) through (a)(8), \( GHG_i \) equals 1 for \( \text{CH}_4 \) and \( 1.1 \times 10^{-2} \) for \( \text{CO}_2 \).

\( T_x \) = The total time the component was found leaking and operational, in hours.

If one leak detection survey is conducted, assume the component was leaking for the entire calendar year. If multiple leak detection surveys are conducted, assume that the component found to be leaking has been leaking since the previous survey or the beginning of the calendar year. For the last leak detection survey in the calendar year.
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(1) You must select to conduct either one leak detection survey in a calendar year or multiple complete leak detection surveys in a calendar year. The number of leak detection surveys selected must be conducted during the calendar year.

(2) Calculate GHG mass emissions in carbon dioxide equivalent at standard conditions using calculations in paragraph (v) of this section.

(3) Onshore natural gas processing facilities shall use the appropriate default leaker emission factors listed in Table W–2 of this subpart for equipment leaks detected from valves, connectors, open ended lines, pressure relief valves, and meters.

(4) Onshore natural gas transmission compression facilities shall use the appropriate default leaker emission factors listed in Table W–3 of this subpart for equipment leaks detected from valves, connectors, open ended lines, pressure relief valves, and meters.

(5) Underground natural gas storage facilities for storage stations shall use the appropriate default leaker emission factors listed in Table W–4 of this subpart for equipment leaks detected from valves, connectors, open ended lines, pressure relief valves, and meters.

(6) LNG storage facilities shall use the appropriate default leaker emission factors listed in Table W–5 of this subpart for equipment leaks detected from valves, pump seals, connectors, and other.

(7) LNG import and export facilities shall use the appropriate default leaker emission factors listed in Table W–6 of this subpart for equipment leaks detected from valves, pump seals, connectors, and other.

(8) Natural gas distribution facilities for above ground meters and regulators at city gate stations at custody transfer, shall use the appropriate default leaker emission factors listed in Table W–7 of this subpart for equipment leak detected from connectors, block valves, control valves, pressure relief valves, orifice meters, regulators, and open ended lines.

(r) Population count and emission factors. This paragraph applies to emission sources listed in §98.232 (c)(21), (f)(5), (g)(3), (h)(4), (i)(2), (i)(3), (i)(4) and (i)(5), on streams with gas content greater than 10 percent CH₄ plus CO₂ by weight. Emissions sources in streams with gas content less than 10 percent CH₄ plus CO₂ by weight do not need to be reported. Tubing systems equal or less than one half inch diameter are exempt from the requirements of paragraph (r) of this section and do not need to be reported. Calculate emissions from all sources listed in this paragraph using Equation W–31 of this section.

\[
E_{s,i} = \text{Count}_s \times \text{EF}_i \times \text{GHG}_i \times T_s \quad \text{(Eq. W–31)}
\]

Where:

- \( E_{s,i} \) = Annual volumetric GHG emissions at standard conditions from each equipment leak source in cubic feet.
- \( \text{Count}_s \) = Total number of this type of emission source at the facility. Average component counts are provided by major equipment piece in Tables W–1B and Table W–1C of this subpart. Use average component counts as appropriate for operations in Eastern and Western U.S., according to Table W–1D of this subpart.
- \( \text{EF}_i \) = Population emission factor for the specific source, \( i \), listed in Table W–1A and Tables W–3 through W–7 of this subpart. Use appropriate population emission factor for operations in Eastern and Western U.S., according to Table W–1D of this subpart. EF for non-custody transfer city gate stations is determined in Equation W–32.
- \( \text{GHG}_i \) = For onshore petroleum and natural gas production facilities and onshore natural gas processing facilities, concentration of GHG \( i \), CH₄ or CO₂, in produced natural gas or feed natural gas; for other facilities listed in §98.230(a)(4) through (a)(8), GHG, equals 1 for CH₄, and \( 1.1 \times 10^{-2} \) for CO₂.
- \( T_s \) = Total time the specific source \( s \) associated with the equipment leak emission was operational in the calendar year, in hours.
(1) Calculate both CH$_4$ and CO$_2$ mass emissions from volumetric emissions using calculations in paragraph (v) of this section.

(2) Onshore petroleum and natural gas production facilities shall use the appropriate default population emission factors listed in Table W–1A of this subpart for equipment leaks from valves, connectors, open ended lines, pressure relief valves, pump, flanges, and other. Major equipment and components associated with gas wells are considered gas service components in reference to Table 1–A of this subpart and major natural gas equipment in reference to Table W–1B of this subpart. Major equipment and components associated with crude oil wells are considered crude service components in reference to Table 1–A of this subpart and major crude oil equipment in reference to Table W–1C of this subpart. Where facilities conduct EOR operations the emissions factor listed in Table W–1A of this subpart shall be used to estimate all streams of gases, including recycle CO$_2$ stream. The component count can be determined using either of the methodologies described in this paragraph (r)(2). The same methodology must be used for the entire calendar year.

(i) Component Count Methodology 1. For all onshore petroleum and natural gas production operations in the facility perform the following activities:

(A) Count all major equipment listed in Table W–1B and Table W–1C of this subpart.

(B) Multiply major equipment counts by the average component counts listed in Table W–1B and W–1C of this subpart for onshore natural gas production and onshore oil production, respectively. Use the appropriate factor in Table W–1A of this subpart for operations in Eastern and Western U.S. according to the mapping in Table W–1D of this subpart.

(ii) Component Count Methodology 2. Count each component individually for the facility. Use the appropriate factor in Table W–1A of this subpart for operations in Eastern and Western U.S. according to the mapping in Table W–1D of this subpart.

(3) Underground natural gas storage facilities for storage wellheads shall use the appropriate default population emission factors listed in Table W–4 of this subpart for equipment leak from connectors, valves, pressure relief valves, and open ended lines.

(4) LNG storage facilities shall use the appropriate default population emission factors listed in Table W–5 of this subpart for equipment leak from vapor recovery compressors.

(5) LNG import and export facilities shall use the appropriate default population emission factors listed in Table W–6 of this subpart for equipment leak from vapor recovery compressors.

(6) Natural gas distribution facilities shall use the appropriate emission factors as described in paragraph (r)(6) of this section.

(i) Below grade meters and regulators; mains; and services, shall use the appropriate default population emission factors listed in Table W–7 of this subpart.

(ii) Above grade meters and regulators at city gate stations not at custody transfer as listed in §98.232(i)(2), shall use the total volumetric GHG emissions at standard conditions for all equipment leak sources calculated in paragraph (q)(8) of this section to develop facility emission factors using Equation W–32 of this section. The calculated facility emission factor from Equation W–32 of this section shall be used in Equation W–31 of this section.

$$EF = \sum \frac{E_{s,i}}{\text{Count}} \quad \text{(Eq. W–32)}$$

Where:

EF = Facility emission factor for a meter at above grade M&R at city gate stations not at custody transfer in cubic feet per meter per year.

$E_{s,i}$ = Annual volumetric GHG emissions at standard condition from all equipment
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leak sources at all above grade M&R city gate stations at custody transfer, from paragraph (q) of this section.

Count = Total number of meter runs at all above grade M&R city gate stations at custody transfer.

(s) **Offshore petroleum and natural gas production facilities.** Report CO₂, CH₄, and N₂O emissions for offshore petroleum and natural gas production from all equipment leaks, vented emission, and flare emission source types as identified in the data collection and emissions estimation study conducted by BOEMRE in compliance with 30 CFR 250.302 through 304.

(1) Offshore production facilities under BOEMRE jurisdiction shall report the same annual emissions as calculated and reported by BOEMRE in data collection and emissions estimation study published by BOEMRE referenced in 30 CFR 250.302 through 304 (GOADS).

(i) For any calendar year that does not overlap with the most recent BOEMRE emissions study publication year, report the most recent BOEMRE reported emissions data published by BOEMRE referenced in 30 CFR 250.302 through 304 (GOADS). Adjust emissions based on the operating time for the facility relative to the operating time in the most recent BOEMRE published study.

(ii) [Reserved]

(2) Offshore production facilities that are not under BOEMRE jurisdiction shall use monitoring methods and calculation methodologies published by BOEMRE referenced in 30 CFR 250.302 through 304 to calculate and report emissions (GOADS).

(t) **Volumetric emissions.** Calculate volumetric emissions at standard conditions as specified in paragraphs (t)(1) or (2) of this section determined by engineering estimate based on best available data unless otherwise specified.

(1) Calculate natural gas volumetric emissions at standard conditions by converting actual temperature and pressure of natural gas emissions to standard temperature and pressure of natural gas using Equation W–33 of this section.

\[
E_{v,n} = \frac{E_{a,n} \times (459.67 + T_a) \times P_s}{(459.67 + T_s) \times P_s} \quad (\text{Eq. } W-33)
\]

Where:

- \( E_{v,n} \) = Natural gas volumetric emissions at standard temperature and pressure (STP) conditions in cubic feet.
- \( E_{a,n} \) = Natural gas volumetric emissions at actual conditions in cubic feet.
- \( T_s \) = Temperature at standard conditions (°F).
- \( T_a \) = Temperature at actual emission conditions (°F).
- \( P_s \) = Absolute pressure at standard conditions (psia).
- \( P_a \) = Absolute pressure at actual conditions (psia).
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(2) Calculate GHG volumetric emissions at standard conditions by converting actual temperature and pressure of GHG emissions to standard temperature and pressure using Equation W–34 of this section.

\[
E_{s,i} = \frac{E_{a,i} \cdot (459 \cdot 67 + T_s) \cdot P_s}{(459 \cdot 67 + T_a) \cdot P_a} \quad \text{(Eq. W–34)}
\]

Where:
- \( E_{s,i} \) = GHG i volumetric emissions at standard temperature and pressure (STP) conditions in cubic feet.
- \( E_{a,i} \) = GHG i volumetric emissions at actual conditions in cubic feet.
- \( T_s \) = Temperature at standard conditions (°F).
- \( T_a \) = Temperature at actual emission conditions (°F).
- \( P_s \) = Absolute pressure at standard conditions (psia).
- \( P_a \) = Absolute pressure at actual conditions (psia).

(u) GHG volumetric emissions. Calculate GHG volumetric emissions at standard conditions as specified in paragraphs (u)(1) and (2) of this section determined by engineering estimate based on best available data unless otherwise specified.

(1) Estimate CH\(_4\) and CO\(_2\) emissions from natural gas emissions using Equation W–35 of this section.

\[
E_{s,i} = E_{s,n} \cdot M_i \quad \text{(Eq. W–35)}
\]

Where:
- \( E_{s,i} \) = GHG i (either CH\(_4\) or CO\(_2\)) volumetric emissions at standard conditions in cubic feet.
- \( E_{s,n} \) = Natural gas volumetric emissions at standard conditions in cubic feet.
- \( M_i \) = Mole fraction of GHG i in the natural gas.

(2) For Equation W–35 of this section, the mole fraction, \( M_i \), shall be the annual average mole fraction for each facility, as specified in paragraphs (u)(2)(i) through (vii) of this section.

(i) GHG mole fraction in produced natural gas for onshore petroleum and natural gas production facilities. If you have a continuous gas composition analyzer for produced natural gas, you must use these values for determining the mole fraction. If you do not have a continuous gas composition analyzer, then annual samples must be taken according to methods set forth in § 98.234(b).

(ii) GHG mole fraction in transmission pipeline natural gas that passes through the facility for onshore natural gas transmission compression facilities.

(iii) GHG mole fraction in transmission pipeline natural gas that passes through the facility for onshore natural gas transmission compression facilities.

(iv) GHG mole fraction in natural gas stored in underground natural gas storage facilities.

(v) GHG mole fraction in natural gas stored in LNG storage facilities.

(vi) GHG mole fraction in local distribution pipeline natural gas that passes through the facility for natural gas distribution facilities.

(v) GHG mass emissions. Calculate GHG mass emissions in carbon dioxide equivalent at standard conditions by
converting the GHG volumetric emissions into mass emissions using Equation W–36 of this section.

\[ \text{Mass}_{s,i} = E_{s,i} \times \rho_i \times GWP \times 10^{-3} \]  

(Eq. W–36)

Where:
- \( \text{Mass}_{s,i} \) = GHG \( i \) (either CH\(_4\) or CO\(_2\)) mass emissions at standard conditions in metric tons CO\(_2\)e.
- \( E_{s,i} \) = GHG \( i \) (either CH\(_4\) or CO\(_2\)) volumetric emissions at standard conditions, in cubic feet.
- \( \rho_i \) = Density of GHG \( i \). Use 0.0538 kg/ft\(^3\) for CO\(_2\) and N\(_2\)O, and 0.0196 kg/ft\(^3\) for CH\(_4\) at 68 °F and 14.7 psia or 0.0530 kg/ft\(^3\) for CO\(_2\) and N\(_2\)O, and 0.0193 kg/ft\(^3\) for CH\(_4\) at 60 °F and 14.7 psia.
- GWP = Global warming potential, 1 for CO\(_2\), 21 for CH\(_4\), and 310 for N\(_2\)O.

(w) EOR injection pump blowdown. Calculate CO\(_2\) pump blowdown emissions as follows:

1. Calculate the total volume in cubic feet (including pipelines, manifolds and vessels) between isolation valves.
2. Retain logs of the number of blowdowns per calendar year.
3. Calculate the total annual venting emissions using Equation W–37 of this section:

\[ \text{Mass}_{c,i} = N \times V_v \times R_c \times \text{GHG}_i \times 10^{-3} \]  

(Eq. W–37)

Where:
- \( \text{Mass}_{c,i} \) = Annual EOR injection gas venting emissions in metric tons at critical conditions “c” from blowdowns.
- \( N \) = Number of blowdowns for the equipment in the calendar year.
- \( V_v \) = Total volume in cubic feet of blowdown equipment chambers (including pipelines, manifolds and vessels) between isolation valves.
- \( R_c \) = Density of critical phase EOR injection gas in kg/ft\(^3\). You may use an appropriate standard method published by a consensus-based standards organization if such a method exists or you may use an industry standard practice to determine density of super critical EOR injection gas.
- \( \text{GHG}_i \) = Mass fraction of GHG \( i \) in critical phase injection gas.

1 \times 10^{-3} = Conversion factor from kilograms to metric tons.

(x) EOR hydrocarbon liquids dissolved CO\(_2\). Calculate dissolved CO\(_2\) in hydrocarbon liquids produced through EOR operations as follows:

1. Determine the amount of CO\(_2\) retained in hydrocarbon liquids after flashing in tankage at STP conditions. Annual samples must be taken according to methods set forth in §98.234(b) to determine retention of CO\(_2\) in hydrocarbon liquids immediately downstream of the storage tank. Use the annual analysis for the calendar year.
2. Estimate emissions using Equation W–38 of this section.

\[ \text{Mass}_{s,\text{CO}_2} = S_{hl} \times V_{hl} \]  

(Eq. W–38)

Where:
- \( \text{Mass}_{s,\text{CO}_2} \) = Annual CO\(_2\) emissions from CO\(_2\) retained in hydrocarbon liquids produced through EOR operations beyond tankage, in metric tons.
- \( S_{hl} \) = Amount of CO\(_2\) retained in hydrocarbon liquids in metric tons per barrel, under standard conditions.
- \( V_{hl} \) = Total volume of hydrocarbon liquids produced at the EOR operations in barrels in the calendar year.

(y) [Reserved]

(2) Onshore petroleum and natural gas production and natural gas distribution combustion emissions. Calculate CO\(_2\)
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CH₄ and N₂O combustion-related emissions from stationary or portable equipment as follows:

(1) If the fuel combusted in the stationary or portable equipment is listed in Table C–1 of subpart C of this part, or is a blend of fuels listed in Table C–1, use the Tier 1 methodology described in subpart C of this part (General Stationary Fuel Combustion Sources). If the fuel combusted is natural gas and is pipeline quality and has a minimum high heat value of 950 Btu per standard cubic foot, then the natural gas emission factor and high heat values listed in Tables C–1 and C–2 of this part may be used.

(2) For fuel combustion units that combust field gas or process vent gas, or any blend of field gas or process vent gas and fuels listed in Table C–1 of subpart C of this part, calculate combustion emissions as follows:

(i) If you have a continuous flow meter on the combustion unit, you must use the measured flow volumes to calculate the total flow of gas to the unit. If you do not have a permanent flow meter on the combustion unit, you may install a permanent flow meter on the combustion unit, or use company records or engineering calculations based on best available data on heat duty or horsepower to estimate volumetric unit gas flow.

(ii) If you have a continuous gas composition analyzer on fuel to the combustion unit, you must use these compositions for determining the concentration of gas hydrocarbon constituent in the flow of gas to the unit. If you do not have a continuous gas composition analyzer on gas to the combustion unit, you must use the appropriate gas compositions for each stream of hydrocarbons going to the combustion unit as specified in paragraph (u)(2)(i) of this section.

(iii) Calculate GHG volumetric emissions at actual conditions using Equations W–39 of this section.

\[ E_{a,CO_2} = \sum_j V_a Y_j R_j \quad (Eq. \ W-39) \]

Where:

- \( E_{a,CO_2} \) = Contribution of annual emissions from portable or stationary fuel combustion sources in cubic feet, under actual conditions.
- \( V_a \) = Volume of gas sent to combustion unit in cubic feet, during the year.
- \( Y_j \) = Concentration of gas hydrocarbon constituents \( j \) (such as methane, ethane, propane, butane, and pentanes plus).
- \( R_j \) = Number of carbon atoms in the gas hydrocarbon constituent \( j \); 1 for methane, 2 for ethane, 3 for propane, 4 for butane, and 5 for pentanes plus.

(3) External fuel combustion sources with a rated heat capacity equal to or less than 5 mmBtu/hr do not need to report combustion emissions. You must report the type and number of each external fuel combustion unit.

(4) Calculate GHG volumetric emissions at standard conditions using calculations in paragraph (t) of this section.

(5) Calculate both combustion-related CH₄ and CO₂ mass emissions from volumetric CH₄ and CO₂ emissions using calculation in paragraph (v) of this section.

(6) Calculate N₂O mass emissions using Equation W–40 of this section.

\[ N_2O = (1\times10^3) \times Fuel \times HHV \times EF \quad (Eq. \ W-40) \]

Where:

- \( N_2O \) = Annual N₂O emissions from the combustion of a particular type of fuel (metric tons).
- \( Fuel \) = Mass or volume of the fuel combusted (mass or volume per year, choose appropriately to be consistent with the units of HHV).
HHV = High heat value of the fuel from paragraphs (z)(8)(i), (z)(8)(ii) or (z)(8)(iii) of this section (units must be consistent with Fuel).

EF = Use $1.0 \times 10^{-4}$ kg N$_2$O/mmBtu.

$1 \times 10^{-3} = \text{Conversion factor from kilograms to metric tons.}$

(i) For fuels listed in Table C–1 of subpart C of this part, use the provided default HHV in the table.

(ii) For field gas or process vent gas, use $1.235 \times 10^{-3}$ mmBtu/scf for HHV.

(iii) For fuels not listed in Table C–1 of subpart C of this part and not field gas or process vent gas, you must use the methodology set forth in the Tier 2 methodology described in subpart C of this part to determine HHV.

§ 98.234 Monitoring and QA/QC requirements.

The GHG emissions data for petroleum and natural gas emissions sources must be quality assured as applicable as specified in this section. Offshore petroleum and natural gas production facilities shall adhere to the monitoring and QA/QC requirements as set forth in 30 CFR 250.

(a) You must use any of the methods described as follows in this paragraph to conduct leak detection(s) of equipment leaks and through-valve leakage from all source types listed in §98.233(k), (o), (p) and (q) that occur during a calendar year, except as provided in paragraph (a)(4) of this section.

(1) Optical gas imaging instrument. Use an optical gas imaging instrument for equipment leak detection in accordance with 40 CFR part 60, subpart A, §60.18(i)(1) and (2) of the Alternative work practice for monitoring equipment leaks. Any emissions detected by the optical gas imaging instrument is a leak unless screened with Method 21 (40 CFR part 60, appendix A–7) monitoring, in which case 10,000 ppm or greater is designated a leak. In addition, you must operate the optical gas imaging instrument to image the source types required by this subpart in accordance with the instrument manufacturer’s operating parameters.

(2) Method 21. Use the equipment leak detection methods in 40 CFR part 60, appendix A–7, Method 21. If using Method 21 monitoring, if an instrument reading of 10,000 ppm or greater is measured, a leak is detected. Inaccessible emissions sources, as defined in 40 CFR part 60, are not exempt from this subpart. Owners or operators must use alternative leak detection devices as described in paragraph(a)(1) of this section to monitor inaccessible equipment leaks or vented emissions.

(3) Infrared laser beam illuminated instrument. Use an infrared laser beam illuminated instrument for equipment leak detection. Any emissions detected by the infrared laser beam illuminated instrument is a leak unless screened with Method 21 monitoring, in which case 10,000 ppm or greater is designated a leak. In addition, you must operate the infrared laser beam illuminated instrument to detect the source types required by this subpart in accordance with the instrument manufacturer’s operating parameters.

(4) Optical gas imaging instrument. An optical gas imaging instrument must be used for all source types that are inaccessible and cannot be monitored without elevating the monitoring personnel more than 2 meters above a support surface.

(5) Acoustic leak detection device. Use the acoustic leak detection device to detect through-valve leakage. When using the acoustic leak detection device to quantify the through-valve leakage, you must use the instrument manufacturer’s calculation methods to quantify the through-valve leak. When using the acoustic leak detection device, if a leak of 3.1 scf per hour or greater is calculated, a leak is detected. In addition, you must operate the acoustic leak detection device to monitor the source valves required by this subpart in accordance with the instrument manufacturer’s operating parameters.

(b) You must operate and calibrate all flow meters, composition analyzers and pressure gauges used to measure quantities reported in §98.233 according to the procedures in §98.234 and the procedures in paragraph (b) of this section. You may use an appropriate standard method published by a consensus-based standards organization if such a method exists or you may use an industry standard practice. Consensus-based standards organizations
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include, but are not limited to, the following: ASTM International, the American National Standards Institute (ANSI), the American Gas Association (AGA), the American Society of Mechanical Engineers (ASME), the American Petroleum Institute (API), and the North American Energy Standards Board (NAESB).

(c) Use calibrated bags (also known as vent bags) only where the emissions are at near-atmospheric pressures such that it is safe to handle and can capture all the emissions, below the maximum temperature specified by the vent bag manufacturer, and the entire emissions volume can be encompassed for measurement.

(1) Hold the bag in place enclosing the emissions source to capture the entire emissions and record the time required for completely filling the bag. If the bag inflates in less than one second, assume one second inflation time.

(2) Perform three measurements of the time required to fill the bag, report the emissions as the average of the three readings.

(3) Estimate natural gas volumetric emissions at standard conditions using calculations in §98.233(t).

(4) Estimate CH₄ and CO₂ volumetric and mass emissions from volumetric natural gas emissions using the calculations in §98.233(u) and (v).

(d) Use a high volume sampler to measure emissions within the capacity of the instrument.

(1) A technician following manufacturer instructions shall conduct measurements, including equipment manufacturer operating procedures and measurement methodologies relevant to using a high volume sampler, including positioning the instrument for complete capture of the equipment leak without creating backpressure on the source.

(2) If the high volume sampler, along with all attachments available from the manufacturer, is not able to capture all the emissions from the source then use anti-static wraps or other aids to capture all emissions without violating operating requirements as provided in the instrument manufacturer’s manual.

(3) Estimate CH₄ and CO₂ volumetric and mass emissions from volumetric natural gas emissions using the calculations in §98.233(u) and (v).

(4) Calibrate the instrument at 2.5 percent methane with 97.5 percent air and 100 percent CH₄ by using calibrated gas samples and by following manufacturer’s instructions for calibration.

(e) Peng Robinson Equation of State means the equation of state defined by Equation W–41 of this section:

\[
p = \frac{RT}{V_m - b} - \frac{aan}{V_m^2 + 2bV_m - b^2}
\]

Where:
\( R \) = Universal gas constant.
\( T \) = Absolute temperature.
\( V_m \) = Molar volume.
\( p \) = Absolute pressure.
Where:

\( w \) = Acentric factor of the species.

\( T_c \) = Critical temperature.

\( P_c \) = Critical pressure.

\( f \) = Special reporting provisions

(1) **Best available monitoring methods.**

EPA will allow owners or operators to use best available monitoring methods for parameters in §98.233 Calculating GHG Emissions as specified in paragraphs (f)(2), (f)(3), and (f)(4) of this section. If the reporter anticipates the potential need for best available monitoring for sources for which they need to petition EPA and the situation is unresolved at the time of the deadline, reporters should submit written notice of this potential situation to EPA by the specified deadline for requests to be considered. EPA reserves the right to review petitions after the deadline but will only consider and approve late petitions which demonstrate extreme or unusual circumstances. The Administrator reserves to right to request further information in regard to all petition requests. The owner or operator must use the calculation methodologies and equations in §98.233 Calculating GHG Emissions. Best available monitoring methods means any of the following methods specified in paragraph (f)(1) of this section:

(i) Monitoring methods currently used by the facility that do not meet the specifications of this subpart.

(ii) Supplier data.

(iii) Engineering calculations.

(iv) Other company records.

(2) **Best available monitoring methods for well-related emissions.**

During January 1, 2011 through September 30, 2011, owners and operators may use best available monitoring methods for any well-related data that cannot reasonably be measured according to the monitoring and QA/QC requirements of this subpart, and only where required measurements cannot be duplicated due to technical limitations after September 30, 2011. These well-related sources are:

(i) Gas well venting during well completions and workovers with hydraulic fracturing as specified in §98.233(g).

(ii) Well testing venting and flaring as specified in §98.233(l).

(3) **Best available monitoring methods for specified activity data.**

During January 1, 2011 through September 30, 2011, owners or operators may use best available monitoring methods for activity data as listed below that cannot reasonably be obtained according to the monitoring and QA/QC requirements of this subpart, specifically for events that generate data that can be collected only between January 1, 2011 and September 30, 2011 and cannot be duplicated after September 30, 2011. These sources are:

(i) Cumulative hours of venting, days, or times of operation in §98.233(e), (f), (g), (h), (l), (o), (p), (q), (r), and (t).

(ii) Number of blowdowns, completions, workovers, or other events in §98.233(f), (g), (h), (l), (i), and (w).

(iii) Cumulative volume produced, volume input or output, or volume of fuel used in paragraphs §98.233(d), (e), (j), (k), (l), (m), (n), (x), (y), and (z).

(4) **Best available monitoring methods for leak detection and measurement.**

\[
\frac{0.45724R^2T_c^2}{p_c} \quad \frac{0.7780RT_c}{p_c} \quad \alpha = 1 + \left(0.37464 + 1.54226w - 0.26992w^2 \right) \left(1 - \frac{T}{T_c}\right)^2
\]
owner or operator may request use of best available monitoring methods between January 1, 2011 and December 31, 2011 for sources requiring leak detection and/or measurement. These sources include:

(i) Reciprocating compressor rod packing venting in onshore natural gas processing, onshore natural gas transmission compression, underground natural gas storage, LNG storage, and LNG import and export equipment as specified in §98.232(d)(1), (e)(1), (f)(1), (g)(1), and (h)(1).

(ii) Centrifugal compressor wet seal oil degassing venting in onshore natural gas processing, onshore natural gas transmission compression, underground natural gas storage, LNG storage, and LNG import and export equipment as specified in §98.232(d)(2), (e)(2), (f)(2), (g)(2), and (h)(2).

(iii) Acid gas removal vent stacks in onshore petroleum and natural gas production and onshore natural gas processing as specified in §98.232(c)(17) and (d)(6).

(iv) Equipment leak emissions from valves, connectors, open ended lines, pressure relief valves, block valves, control valves, compressor blowdown valves, orifice meters, other meters, regulators, vapor recovery compressors, centrifugal compressor dry seals, and/or other equipment leaks in onshore natural gas processing, onshore natural gas transmission compression, underground natural gas storage, LNG storage, LNG import and export equipment, and natural gas distribution as specified in §98.232(d)(7), (e)(7), (f)(5), (g)(3), (h)(4), and (i)(1).

(v) Condensate (oil and/or water) storage tanks in onshore natural gas transmission compression as specified in §98.232(e)(3).

(5) Requests for the use of best available monitoring methods. The owner or operator may submit a request to the Administrator to use one or more best available monitoring methods.

(i) No request or approval by the Administrator is necessary to use best available monitoring methods between January 1, 2011 and September 30, 2011 for sources specified in paragraph (f)(3) of this section.

(ii) Owners or operators must submit a request and receive approval by the Administrator to use best available monitoring methods between January 1, 2011 and December 31, 2011 for sources specified in paragraph (f)(4) of this section.

(A) Timing of Request. The request to use best available monitoring methods for paragraph (f)(4) of this section must be submitted to EPA no later than July 31, 2011.

(B) Content of request. Requests must contain the following information for sources listed in paragraph (f)(4) of this section:

(1) A list of specific source types and specific equipment, monitoring instrumentation, and/or services for which the request is being made and the locations where each piece of monitoring instrumentation will be installed or monitoring service will be supplied.

(2) Identification of the specific rule requirements (by subpart, section, and paragraph number) for which the instrumentation or monitoring service is needed.

(3) Documentation which demonstrates that the owner or operator made all reasonable efforts to obtain the information, services or equipment necessary to comply with subpart W reporting requirements, including evidence of specific service or equipment providers contacted and why services or information could not be obtained during 2011.

(4) A description of the specific actions the facility will take to obtain and/or install the equipment or obtain the monitoring service as soon as reasonably feasible and the expected date by which the equipment will be obtained and operating or service will be provided.

(C) Approval criteria. To obtain approval, the owner or operator must demonstrate to the Administrator’s satisfaction that it does not own the required monitoring equipment, and it is not reasonably feasible to acquire, install, and operate a required piece of monitoring equipment or to obtain
leak detection or measurement services in order to meet the requirements of this subpart for 2011.

(iv) EPA does not anticipate a need to approve the use of best available monitoring methods for sources not listed in paragraphs (f)(2), (f)(3), and (f)(4) of this section; however, EPA will review such requests if submitted in accordance with paragraph (f)(5)(iv)(A)–(C) of this section.

(A) Timing of Request. The request to use best available monitoring methods for sources not listed in paragraph (f)(2), (f)(3), and (f)(4) of this section must be submitted to EPA no later than July 31, 2011.

(B) Content of request. Requests must contain the following information:

(1) A list of specific source categories and parameters for which the owner or operator is seeking use of best available monitoring methods.

(2) A description of the data collection methodologies that do not meet safety regulations, technical infeasibility, or specific laws or regulations that conflict with each specific source for which an owner or operator is requesting use of best available monitoring methodologies.

(3) A detailed explanation and supporting documentation of how and when the owner or operator will receive the services or equipment to comply with all subpart W reporting requirements.

(C) Approval criteria. To obtain approval, the owner or operator must demonstrate to the Administrator’s satisfaction that the owner or operator faces unique safety, technical or legal issues rendering them unable to meet the requirements of this subpart for 2011.

(6) Requests for extension of the use of best available monitoring methods through December 31, 2011 for sources in paragraph (f)(2) of this section. The owner or operator may submit a request to the Administrator to use one or more best available monitoring methods described in paragraph (f)(2) of this section beyond September 30, 2011.

(i) Timing of Request. The extension request must be submitted to EPA no later than July 31, 2011.

(ii) Content of request. Requests must contain the following information:

(A) A list of specific source types and specific equipment, monitoring instrumentation, contract modifications, and/or services for which the request is being made and the locations where each piece of monitoring instrumentation will be installed, monitoring service will be supplied, or contracts will be modified.

(B) Identification of the specific rule requirements (by subpart, section, and paragraph number) for which the instrumentation, contract modification, or monitoring service is needed.

(C) A description and applicable correspondence outlining the diligent efforts of the owner or operator in obtaining the needed equipment or service and why they could not be obtained and installed in a period of time enabling completion of applicable requirements of this subpart within the 2011 calendar year.

(D) If the reason for the extension is that the owner or operator cannot collect data from a service provider or relevant organization in order for the owner or operator to meet requirements of this subpart for the 2011 calendar year, the owner or operator must demonstrate a good faith effort that it is not possible to obtain the necessary information, service or hardware which may include providing correspondence from specific service providers or other relevant entities to the owner or operator, whereby the service provider states that it is unable to provide the necessary data or services requested by the owner or operator that would enable the owner or operator to comply with subpart W reporting requirements by September 30, 2011.

(E) A description of the specific actions the owner or operator will take to comply with monitoring requirements in 2012 and beyond.

(iii) Approval criteria. To obtain approval, the owner or operator must demonstrate to the Administrator’s satisfaction that it is not reasonably feasible to obtain the data necessary to meet the requirements of this subpart for the sources specified in paragraph (f)(2) of this section by September 30, 2011.

(7) Requests for extension of the use of best available monitoring methods through December 31, 2011 for sources in
paragraph (f)(3) of this section. The owner or operator may submit a request to the Administrator to use one or more best available monitoring methods described in paragraph (f)(3) of this section beyond September 30, 2011.

(i) Timing of request. The extension request must be submitted to EPA no later than July 31, 2011.

(ii) Content of request. Requests must contain the following information:

(A) A list of specific source types for which data collection could not be implemented.

(B) Identification of the specific rule requirements (by subpart, section, and paragraph number) for which the data collection could not be implemented.

(C) A description of the data collection methodologies that do not meet safety regulations, technical infeasibility, or specific laws or regulations that conflict with each specific source for which an owner or operator is requesting use of best available monitoring methodologies for which data collection could not be implemented in the 2011 calendar year.

(iii) Approval criteria. To obtain approval, the owner or operator must demonstrate to the Administrator’s satisfaction that is not reasonably feasible to implement the data collection for the sources described in paragraph (f)(3) of this section for the methods required in this subpart by September 30, 2011.

(8) Requests for extension of the use of best available monitoring methods beyond 2011 for sources listed in paragraphs (f)(2), (f)(3), (f)(4), (f)(5)(iv) of this section and other sources in this subpart. EPA does not anticipate a need for approving the use of best available methods beyond December 31, 2011, except in extreme circumstances, which include safety, a requirement being technically infeasible or counter to other local, State, or Federal regulations.


(ii) Content of request. Requests must contain the following information:

(iii) A list of specific source categories and parameters for which the owner or operator is seeking use of best available monitoring methods.

(iv) A description of the data collection methodologies that do not meet safety regulations, technical infeasibility, or specific laws or regulations that conflict with each specific source for which an owner or operator is requesting use of best available monitoring methodologies.

(v) A detailed explanation and supporting documentation of how and when the owner or operator will receive the services or equipment to comply with all of this subpart W reporting requirements.

(C) Approval criteria. To obtain approval, the owner or operator must demonstrate to the Administrator’s satisfaction that the owner or operator faces unique safety, technical or legal issues rendering them unable to meet the requirements of this subpart.

[75 FR 74488, Nov. 30, 2010, as amended at 76 FR 22827, Apr. 25, 2011]

§ 98.235 Procedures for estimating missing data.

A complete record of all estimated and/or measured parameters used in the GHG emissions calculations is required. If data are lost or an error occurs during annual emissions estimation or measurements, you must repeat the estimation or measurement activity for those sources as soon as possible, including in the subsequent calendar year if missing data are not discovered until after December 31 of the year in which data are collected, until valid data for reporting is obtained. Data developed and/or collected in a subsequent calendar year to substitute for missing data cannot be used for that subsequent year’s emissions estimation. Where missing data procedures are used for the previous year, at least 30 days must separate emissions estimation or measurements for the previous year and emissions estimation or measurements for the current year of data collection. For missing data which are continuously monitored or measured, (for example flow meters), or for missing temperature or pressure data that are required under §98.236, the reporter may use best available
§ 98.236 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain reported emissions and related information as specified in this section.

(a) Report annual emissions separately for each of the industry segments listed in paragraphs (a)(1) through (8) of this section in metric tons CO$_2$e per year at standard conditions. For each segment, report emissions from each source type §98.232(a) in the aggregate, unless specified otherwise. For example, an onshore natural gas production operation with multiple reciprocating compressors must report emissions from all reciprocating compressors as an aggregate number.

(1) Onshore petroleum and natural gas production.

(2) Offshore petroleum and natural gas production.

(3) Onshore natural gas processing.

(4) Onshore natural gas transmission compression.

(5) Underground natural gas storage.

(6) LNG storage.

(7) LNG import and export.

(8) Natural gas distribution. Report each source in the aggregate for pipelines and for Metering and Regulating (M&R) stations.

(b) Offshore petroleum and natural gas production is not required to report activity data and emissions for each aggregated source under §98.236(c). Reporting requirements for offshore petroleum and natural gas production is set forth by BOEMRE in compliance with 30 CFR 250.302 through 304.

(c) For each aggregated source, unless otherwise specified, report activity data and emissions (in metric tons CO$_2$e per year at standard conditions) for each aggregated source type as follows:

(1) For natural gas pneumatic devices (refer to Equation W–1 of §98.233), report the following:

(i) Actual count and estimated count separately of natural gas pneumatic high bleed devices as applicable.

(ii) Actual count and estimated count separately of natural gas pneumatic low bleed devices as applicable.

(iii) Actual count and estimated count separately of natural gas pneumatic intermittent bleed devices as applicable.

(iv) Report emissions collectively.

(2) For natural gas driven pneumatic pumps (refer to Equation W–2 of §98.233), report the following:

(i) Count of natural gas driven pneumatic pumps.

(ii) Report emissions collectively.

(3) For each acid gas removal unit (refer to Equation W–3 and Equation W–4 of §98.233), report the following:

(i) Total throughput off the acid gas removal unit using a meter or engineering estimate based on process knowledge or best available data in million cubic feet per year.

(ii) For Calculation Methodology 1 and Calculation Methodology 2 of §98.233(d), fraction of CO$_2$ content in the vent from the acid gas removal unit (refer to §98.233(d)(6)).

(iii) For Calculation Methodology 3 of §98.233(d), volume fraction of CO$_2$ content of natural gas into and out of the acid gas removal unit (refer to §98.233(d)(7) and (d)(8)).

(iv) Report emissions from the AGR unit recovered and transferred outside the facility.

(v) Report emissions individually.

(4) For dehydrators, report the following:

(i) For each Glycol dehydrator with a throughput greater than or equal to 0.4 MMscfd (refer to §98.233(e)(1)), report the following:

(A) Glycol dehydrator feed natural gas flow rate in MMscfd, determined by engineering estimate based on best available data.

(B) Glycol dehydrator absorbent circulation pump type.

(C) Whether stripper gas is used in glycol dehydrator.

(D) Whether a flash tank separator is used in glycol dehydrator.

(E) Type of absorbent.

(F) Total time the glycol dehydrator is operating in hours.

(G) Temperature, in degrees Fahrenheit and pressure, in psig, of the wet natural gas.
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(H) Concentration of CH₄ and CO₂ in natural gas.
(I) What vent gas controls are used (refer to §98.233(e)(3) and (e)(4)).
(J) Report vent and flared emissions individually.
(ii) For all glycol dehydrators with a throughput less than 0.4 MMscfd (refer to § 98.233, Equation W–5 of §98.233), report the following:
(A) Count of glycol dehydrators.
(B) Whether any vent gas controls are used (refer to §98.233(e)(3) and (e)(4)).
(C) Report vent emissions collectively.
(iii) For absorbent desiccant dehydrators (refer to Equation W–6 of §98.233), report the following:
(A) Count of desiccant dehydrators.
(B) Report emissions collectively.
(5) For well venting for liquids unloading (refer to Equations W–7, W–8 and W–9 of §98.233), report the following:
(i) Count of wells vented to the atmosphere for liquids unloading.
(ii) Count of plunger lifts.
(iii) Cumulative number of unloadings vented to the atmosphere.
(iv) Average flow rate of the measured well venting in cubic feet per hour (refer to §98.233(i)(1)(i)(A)).
(v) Average casing diameter in inches.
(vi) Report emissions collectively.
(6) For well completions and workovers, report the following for each field:
(i) For gas well completions and workovers with hydraulic fracturing (refer to Equation W–10 of §98.233):
(A) Total count of completions in calendar year.
(B) Average flow rate of the measured well completion venting in cubic feet per hour (refer to §98.233(g)(1)(i) or (g)(1)(ii)).
(C) Total count of workovers in calendar year.
(D) Average flow rate of the measured well workover venting in cubic feet per hour (refer to §98.233(g)(1)(i) or (g)(1)(ii)).
(E) Total number of days of gas venting to the atmosphere during backflow for completion.
(F) Total number of days of gas venting to the atmosphere during backflow for workovers.
(G) Report number of completions and workovers employing reduced emissions completions and engineering estimate based on best available data of the amount of gas recovered to sales.
(ii) For gas well completions and workovers without hydraulic fracturing (refer to Equation W–13 of §98.233):
(A) Total count of completions in calendar year.
(B) Total count of workovers in calendar year.
(C) Total number of days of gas venting to the atmosphere during backflow for completion.
(7) For each blowdown vent stack (refer to Equation W–14 of §98.233), report the following:
(i) Total number of blowdowns per equipment type in calendar year.
(ii) Report emissions collectively per equipment type.
(8) For gas emitted from produced oil sent to atmospheric tanks:
(i) For wellhead gas-liquid separator with oil throughput greater than or equal to 10 barrels per day, using Calculation Methodology 1 and 2 of §98.233(j), report the following by field:
(A) Number of wellhead separators sending oil to atmospheric tanks.
(B) Estimated average separator temperature, in degrees Fahrenheit, and estimated average pressure, in psig.
(C) Estimated average sales oil stabilized API gravity, in degrees.
(D) Count of hydrocarbon tanks at well pads.
(E) Best estimate of count of stock tanks not at well pads receiving your oil.
(F) Total volume of oil from all wellhead separators sent to tank(s) in barrels per year.
(G) Count of tanks with emissions control measures, either vapor recovery system or flaring, for tanks at well pads.
(H) Best estimate of count of stock tanks assumed to have emissions control measures not at well pads, receiving your oil.

(I) Range of concentrations of flash gas, CH₄ and CO₂.

(J) Report emissions individually for Calculation Methodology 1 and 2 of §98.233(j).

(ii) For wells with oil production greater than or equal to 10 barrels per day, using Calculation Methodology 3 and 4 of §98.233(j), report the following by field:

(A) Total volume of sales oil from all wells in barrels per year.

(B) Total number of wells sending oil directly to tanks.

(C) Total number of wells sending oil to separators off the well pads.

(D) Sales oil API gravity range for (B) and (C) of this section, in degrees.

(E) Count of hydrocarbon tanks on wellpads.

(F) Count of hydrocarbon tanks, both on and off well pads assumed to have emissions control measures: either vapor recovery system or flaring of tank vapors.

(G) Report emissions collectively for Calculation Methodology 3 and 4 of §98.233(j).

(iii) For wellhead gas-liquid separators and wells with throughput less than 10 barrels per day, using Calculation Methodology 5 of §98.233(j) Equation W–15 of §98.233), report the following:

(A) Number of wellhead separators.

(B) Number of wells without wellhead separators.

(C) Total volume of oil production in barrels per year.

(D) Best estimate of fraction of production sent to tanks with assumed control measures: either vapor recovery system or flaring of tank vapors.

(E) Count of hydrocarbon tanks on wellpads.

(F) Report CO₂ and CH₄ emissions collectively.

(iv) If wellhead separator dump valve is functioning improperly during the calendar year (refer to Equation W–16 of §98.233), report the following:

(A) Count of wellhead separators that dump valve factor is applied.

(v) Whether flare has a continuous flow monitor.

(vi) Volume of gas sent to flare in cubic feet per year.

(vii) Percent of gas sent to un-lit flare determined by engineering estimate and process knowledge based on best available data and operating records.

(viii) Whether flare has a continuous gas analyzer.

(ix) Flare combustion efficiency.

(x) Report uncombusted and combusted CO₂ and CH₄ emissions separately.

(11) For associated natural gas venting (refer to Equation W–18 of §98.233), report the following for each basin:

(i) Number of wells venting or flaring associated natural gas in a calendar year.

(ii) Average gas to oil ratio for each basin.

(iii) Average number of days the well is tested in a basin.

(iv) Report emissions of the venting gas collectively.

(12) For flare stacks (refer to Equations W–20, W–21, and W–22 of §98.233), report the following for each basin:

(i) Whether flare has a continuous gas analyzer.

(ii) Flare combustion efficiency.

(iii) Report uncombusted and combusted CO₂ and CH₄ emissions separately.

(13) For each centrifugal compressor:

(A) Number of wet seals connected to the degassing vent.

(B) Fraction of vent gas recovered for fuel or sales or flared.

(C) Annual throughput in million scf, use an engineering calculation based on best available data.

(D) Type of meters used for making measurements.
(E) Reporter emission factor for wet seal oil degassing vents in cubic feet per hour (refer to Equation W–24 of §98.233).

(F) Total time the compressor is operating in hours.

(G) Report seal oil degassing vent emissions for compressors measured (refer to Equation W–22 of §98.233) and for compressors not measured (refer to Equation W–23 and Equation W–24 of §98.233).

(ii) For wet and dry seal centrifugal compressors in operating mode, (refer to Equations W–22 through W–24 of §98.233), report the following:

(A) Total time in hours the compressor is in operating mode.

(B) Reporter emission factor for blowdown vents in cubic feet per hour (refer to Equation W–24 of §98.233).

(C) Report blowdown vent emissions when in operating mode (refer to Equation W–23 and Equation W–24 of §98.233).

(iii) For wet and dry seal centrifugal compressors in not operating, depressurized mode (refer to Equations W–22 through W–24 of §98.233), report the following:

(A) Total time in hours the compressor is in depressurized mode.

(B) Reporter emission factor for isolation valve emissions in shutdown, depressurized mode in cubic feet per hour (refer to Equation W–24 of §98.233).

(C) Report the isolation valve leakage emissions in not operating, depressurized mode in cubic feet per hour (refer to Equation W–23 and Equation W–24 of §98.233).

(iv) Report total annual compressor emissions from all modes of operation (refer to Equation W–24 of §98.233).

(v) For centrifugal compressors in onshore petroleum and natural gas production (refer to Equation W–25 of §98.233), report the following:

(A) Count of compressors.

(B) Report emissions (refer to Equation W–25 of §98.233) collectively.

(14) For reciprocating compressors:

(i) For reciprocating compressors rod packing emissions with or without a vent in operating mode, report the following:

(A) Annual throughput in million scf, use an engineering calculation based on best available data.

(B) Total time in hours the reciprocating compressor is in operating mode.

(C) Report rod packing emissions for compressors measured (refer to Equation W–26 of §98.233) and for compressors not measured (refer to Equation W–27 and Equation W–28 of §98.233).

(ii) For reciprocating compressors blowdown vents not manifold to rod packing vents, in operating and standby pressurized mode (refer to Equations W–26 through W–28 of §98.233), report the following:

(A) Total time in hours the compressor is in standby, pressurized mode.

(B) Reporter emission factor for blowdown vents in cubic feet per hour (refer to §98.233, Equation W–28).

(C) Report blowdown vent emissions when in operating and standby pressurized modes (refer to Equation W–27 and Equation W–28 of §98.233).

(iii) For reciprocating compressors in not operating, depressurized mode (refer to Equations W–26 through W–28 of §98.233), report the following:

(A) Total time the compressor is in not operating, depressurized mode.

(B) Reporter emission factor for isolation valve emissions in not operating, depressurized mode in cubic feet per hour (refer to Equation W–28 of §98.233).

(C) Report the isolation valve leakage emissions in not operating, depressurized mode.

(iv) Report total annual compressor emissions from all modes of operation (refer to Equation W–27 and Equation W–28 of §98.233).

(v) For reciprocating compressors in onshore petroleum and natural gas production (refer to Equation W–29 of §98.233), report the following:

(A) Count of compressors.

(B) Report emissions collectively.

(15) For each equipment leak sources that uses emission factors for estimating emissions (refer to §98.233(q) and (r).

(i) For equipment leaks found in each leak survey (refer to §98.233(q)), report the following:

(A) Total count of leaks found in each complete survey listed by date of
survey and each type of leak source for which there is a leaker emission factor in Tables W–2, W–3, W–4, W–5, W–6, and W–7 of this subpart.

(B) Concentration of CH₄ and CO₂ as described in Equation W–30 of §98.233.

(C) Report CH₄ and CO₂ emissions (refer to Equation W–30 of §98.233) collectively by equipment type.

(ii) For equipment leaks calculated using population counts and factors (refer to §98.233(r)), report the following:

(A) For source categories §98.230(a)(3), (a)(4), (a)(5), (a)(6), and (a)(7), total count for each type of leak source in Tables W–2, W–3, W–4, W–5, and W–6 of this subpart for which there is a population emission factor, listed by major heading and component type.

(B) For onshore production (refer to §98.230 paragraph (a)(2)), total count for each type of major equipment in Table W–1B and Table W–1C of this subpart, by field.

(C) Report CH₄ and CO₂ emissions (refer to Equation W–31 of §98.233) collectively by equipment type.

(16) For local distribution companies, report the following:

(i) Number of custody transfer gate stations.

(ii) Number of non-custody transfer gate stations.

(iii) Custody transfer gate station meter run leak factor (refer to Equation W–32 of §98.233).

(iv) Number of below grade M&R stations with inlet pressure greater than 300 psig.

(v) Number of below grade M&R stations with inlet pressure between 100 and 300 psig.

(vi) Number of below grate M&R stations with inlet pressure less than 100 psig.

(vii) Number of miles of unprotected steel distribution mains.

(viii) Number of miles of protected steel distribution mains.

(ix) Number of miles of plastic distribution mains.

(x) Number of miles of cast iron distribution mains.

(xi) Number of unprotected steel distribution services.

(xii) Number of protected steel distribution services.

(xiii) Number of plastic distribution services.

(xiv) Number of copper distribution services.

(xv) Total emissions from each natural gas distribution facility.

(17) For each EOR injection pump blowdown (refer to Equation W–37 of §98.233), report the following:

(i) Pump capacity, in barrels per day.

(ii) Volume of critical phase gas between isolation valves.

(iii) Number of blowdowns per year.

(iv) Critical phase EOR injection gas density.

(v) Report emissions collectively.

(18) For EOR hydrocarbon liquids dissolved CO₂ for each field (refer to Equation W–38 of §98.233), report the following:

(i) Volume of crude oil produced in barrels per year.

(ii) Amount of CO₂ retained in hydrocarbon liquids in metric tons per barrel, under standard conditions.

(iii) Report emissions individually.

(19) For onshore petroleum and natural gas production and natural gas distribution combustion emissions, report the following:

(i) Cumulative number of external fuel combustion units with a rated heat capacity equal to or less than 5 mmBtu/hr, by type of unit.

(ii) Cumulative number of external fuel combustion units with a rated heat capacity larger than 5 mmBtu/hr, by type of unit.

(iii) Cumulative emissions from external fuel combustion units with a rated heat capacity larger than 5 mmBtu/hr, by type of unit.

(iv) Cumulative volume of fuel combusted in external fuel combustion units with a rated heat capacity larger than 5 mmBtu/hr, by fuel type.

(v) Cumulative number of all internal combustion units, by type of unit.

(vi) Cumulative emissions from internal combustion units, by type of unit.

(vii) Cumulative volume of fuel combusted in internal combustion units, by fuel type.

(d) Report annual throughput as determined by engineering estimate based on best available data for each industry segment listed in paragraphs (a)(1) through (a)(8) of this section.
§98.237 Records that must be retained.

Monitoring Plans, as described in §98.3(g)(5), must be completed by April 1, 2011. In addition to the information required by §98.3(g), you must retain the following records:

(a) Dates on which measurements were conducted.
(b) Results of all emissions detected and measurements.
(c) Calibration reports for detection and measurement instruments used.
(d) Inputs and outputs of calculations or emissions computer model runs used for engineering estimation of emissions.

§98.238 Definitions.

Except as provided in this section, all terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Acid gas means hydrogen sulfide (H_2S) and/or carbon dioxide (CO_2) contaminants that are separated from sour natural gas by an acid gas removal unit.

Acid gas removal unit (AGR) means a process unit that separates hydrogen sulfide and/or carbon dioxide from sour natural gas using liquid or solid absorbents or membrane separators.

Acid gas removal vent emissions mean the acid gas separated from the acid gas absorbing medium (e.g., an amine solution) and released with methane and other light hydrocarbons to the atmosphere or a flare.


Component means each metal to metal joint or seal of non-welded connection separated by a compression gasket, screwed thread (with or without thread sealing compound), metal to metal compression, or fluid barrier through which natural gas or liquid can escape to the atmosphere.

Compressor means any machine for raising the pressure of a natural gas or CO_2 by drawing in low pressure natural gas or CO_2 and discharging significantly higher pressure natural gas or CO_2.

Condensate means hydrocarbon and other liquid, including both water and hydrocarbon liquids, separated from natural gas that condenses due to changes in the temperature, pressure, or both, and remains liquid at storage conditions.

Engineering estimation, for purposes of subpart W, means an estimate of emissions based on engineering principles applied to measured and/or approximated physical parameters such as dimensions of containment, actual pressures, actual temperatures, and compositions.

Enhanced oil recovery (EOR) means the use of certain methods such as water flooding or gas injection into existing wells to increase the recovery of crude oil from a reservoir. In the context of this subpart, EOR applies to injection of critical phase or immiscible carbon dioxide into a crude oil reservoir to enhance the recovery of oil.

Equipment leak means those emissions which could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening.

Equipment leak detection means the process of identifying emissions from equipment, components, and other point sources.

External combustion means fired combustion in which the flame and products of combustion are separated from contact with the process fluid to which the energy is delivered. Process fluids may be air, hot water, or hydrocarbons. External combustion equipment may include fired heaters, industrial boilers, and commercial and domestic combustion units.

Facility with respect to natural gas distribution for purposes of this subpart and for subpart A means the collection of all distribution pipelines, metering stations, and regulating stations that are operated by a Local Distribution Company (LDC) that is regulated as a separate operating company.
by a public utility commission or that are operated as an independent municipally-owned distribution system.

Facility with respect to onshore petroleum and natural gas production for purposes of this subpart and for subpart A means all petroleum or natural gas equipment on a well pad or associated with a well pad and CO₂ EOR operations that are under common ownership or common control including leased, rented, or contracted activities by an onshore petroleum and natural gas production owner or operator and that are located in a single hydrocarbon basin as defined in §98.238. Where a person or entity owns or operates more than one well in a basin, then all onshore petroleum and natural gas production equipment associated with all wells that the person or entity owns or operates in the basin would be considered one facility.

Farm Taps are pressure regulation stations that deliver gas directly from transmission pipelines to generally rural customers. The gas may or may not be metered, but always does not pass through a city gate station. In some cases a nearby LDC may handle the billing of the gas to the customer(s).

Field means oil and gas fields identified in the United States as defined by the Energy Information Administration Oil and Gas Field Code Master List 2008, DOE/EIA 0370(08) (incorporated by reference, see §98.7).

Flare stack emissions means CO₂ and N₂O from partial combustion of hydrocarbon gas sent to a flare plus CH₄ emissions resulting from the incomplete combustion of hydrocarbon gas in flares.

Flare combustion efficiency means the fraction of hydrocarbon gas, on a volume or mole basis, that is combusted at the flare burner tip.

Gas well means a well completed for production of natural gas from one or more gas zones or reservoirs. Such wells contain no completions for the production of crude oil.

Internal combustion means the combustion of a fuel that occurs with an oxidizer (usually air) in a combustion chamber. In an internal combustion engine the expansion of the high-temperature and –pressure gases produced by combustion applies direct force to a component of the engine, such as pistons, turbine blades, or a nozzle. This force moves the component over a distance, generating useful mechanical energy. Internal combustion equipment may include gasoline and diesel industrial engines, natural gas-fired reciprocating engines, and gas turbines.

Liquefied natural gas (LNG) means natural gas (primarily methane) that has been liquefied by reducing its temperature to -260 degrees Fahrenheit at atmospheric pressure.

LNG boil-off gas means natural gas in the gaseous phase that vents from LNG storage tanks due to ambient heat leakage through the tank insulation and heat energy dissipated in the LNG by internal pumps.

Offshore means seaward of the terrestrial borders of the United States, including waters subject to the ebb and flow of the tide, as well as adjacent bays, lakes or other normally standing waters, and extending to the outer boundaries of the jurisdiction and control of the United States under the Outer Continental Shelf Lands Act.

Oil well means a well completed for the production of crude oil from at least one oil zone or reservoir.

Onshore petroleum and natural gas production owner or operator means the person or entity who holds the permit to operate petroleum and natural gas wells on the drilling permit or an operating permit where no drilling permit is issued, which operates an onshore petroleum and/or natural gas production facility (as described in §98.230(a)(2)). Where petroleum and natural gas wells operate without a drilling or operating permit, the person or entity that pays the State or Federal business income taxes is considered the owner or operator.

Operating pressure means the containment pressure that characterizes the normal state of gas or liquid inside a particular process, pipeline, vessel or tank.

Pump means a device used to raise pressure, drive, or increase flow of liquid streams in closed or open conduits.

Pump seal means any seal on a pump drive shaft used to keep methane and/
or carbon dioxide containing light liquids from escaping the inside of a pump case to the atmosphere.

_Pump seal emissions_ means hydrocarbon gas released from the seal face between the pump internal chamber and the atmosphere.

_Reservoir_ means a porous and permeable underground natural formation containing significant quantities of hydrocarbon liquids and/or gases.

_Residue Gas and Residue Gas Compression_ mean, respectively, production lease natural gas from which gas liquid products and, in some cases, non-hydrocarbon components have been extracted such that it meets the specifications set by a pipeline transmission company, and/or a distribution company; and the compressors operated by the processing facility, whether inside the processing facility boundary fence or outside the fence-line, that deliver the residue gas from the processing facility to a transmission pipeline.

_Separator_ means a vessel in which streams of multiple phases are gravity separated into individual streams of single phase.

_Transmission pipeline_ means high pressure cross country pipeline transporting saleable quality natural gas from production or natural gas processing to natural gas distribution pressure let-down, metering, regulating stations where the natural gas is typically odorized before delivery to customers.

_Turbine meter_ means a flow meter in which a gas or liquid flow rate through the calibrated tube spins a turbine from which the spin rate is detected and calibrated to measure the fluid flow rate.

_Vented emissions_ means intentional or designed releases of CH₄ or CO₂ containing natural gas or hydrocarbon gas (not including stationary combustion flue gas), including process designed flow to the atmosphere through seals or vent pipes, equipment blowdown for maintenance, and direct venting of gas used to power equipment (such as pneumatic devices).

### TABLE W–1A TO SUBPART W OF PART 98—DEFAULT WHOLE GAS EMISSION FACTORS FOR ONSHORE PETROLEUM AND NATURAL GAS PRODUCTION

<table>
<thead>
<tr>
<th>Onshore oil and natural gas production</th>
<th>Emission factor (scf/hour/component)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eastern U.S.</strong></td>
<td></td>
</tr>
<tr>
<td>Population Emission Factors—All Components, Gas Service:</td>
<td></td>
</tr>
<tr>
<td>Valve</td>
<td>0.027</td>
</tr>
<tr>
<td>Connector</td>
<td>0.004</td>
</tr>
<tr>
<td>Open-ended Line</td>
<td>0.002</td>
</tr>
<tr>
<td>Pressure Relief Valve</td>
<td>0.041</td>
</tr>
<tr>
<td>Low Continuous Bleed Pneumatic Device Vents</td>
<td>1.80</td>
</tr>
<tr>
<td>High Continuous Bleed Pneumatic Device Vents</td>
<td>48.1</td>
</tr>
<tr>
<td>Intermittent Bleed Pneumatic Device Vents</td>
<td>17.4</td>
</tr>
<tr>
<td>Pneumatic Pumps</td>
<td>13.3</td>
</tr>
<tr>
<td>Population Emission Factors—All Components, Light Crude Service:</td>
<td></td>
</tr>
<tr>
<td>Valve</td>
<td>0.04</td>
</tr>
<tr>
<td>Flange</td>
<td>0.002</td>
</tr>
<tr>
<td>Connector</td>
<td>0.005</td>
</tr>
<tr>
<td>Open-ended Line</td>
<td>0.04</td>
</tr>
<tr>
<td>Pump</td>
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</tr>
<tr>
<td>Other</td>
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</tr>
<tr>
<td>Population Emission Factors—All Components, Heavy Crude Service:</td>
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<tr>
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</tr>
<tr>
<td>Flange</td>
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<tr>
<td>Connector (other)</td>
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<tr>
<td>Open-ended Line</td>
<td>0.004</td>
</tr>
<tr>
<td>Other</td>
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<tr>
<td><strong>Western U.S.</strong></td>
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<tr>
<td>Population Emission Factors—All Components, Gas Service:</td>
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<tr>
<td>Valve</td>
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<td>Connector</td>
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<td>Pressure Relief Valve</td>
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<tr>
<td>Low Continuous Bleed Pneumatic Device Vents</td>
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<tr>
<td>High Continuous Bleed Pneumatic Device Vents</td>
<td>48.1</td>
</tr>
<tr>
<td>Intermittent Bleed Pneumatic Device Vents</td>
<td>17.4</td>
</tr>
<tr>
<td>Pneumatic Pumps</td>
<td>13.3</td>
</tr>
<tr>
<td>Population Emission Factors—All Components, Light Crude Service:</td>
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<td>Valve</td>
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<td>Flange</td>
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<tr>
<td>Connector (other)</td>
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<tr>
<td>Open-ended Line</td>
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<tr>
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<td>Other</td>
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<tr>
<td>Population Emission Factors—All Components, Heavy Crude Service:</td>
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<tr>
<td>Valve</td>
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<tr>
<td>Flange</td>
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<tr>
<td>Connector (other)</td>
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<tr>
<td>Open-ended Line</td>
<td>0.004</td>
</tr>
<tr>
<td>Other</td>
<td>0.002</td>
</tr>
</tbody>
</table>

1 For multi-phase flow that includes gas, use the gas service emission factors.
2 Emission Factor is in units of "scf/hour/pump."
3 Emission Factor is in units of "scf/hour/device."
4 Hydrocarbon liquids greater than or equal to 20°API are considered "light crude."
5 "Others" category includes instruments, loading arms, pressure relief valves, stuffing boxes, compressor seals, dump lever arms, and vents.

Hydrocarbon liquids less than 20°API are considered "heavy crude."

### TABLE W–1B TO SUBPART W OF PART 98—DEFAULT AVERAGE COMPONENT COUNTS FOR MAJOR ONSHORE NATURAL GAS PRODUCTION EQUIPMENT

<table>
<thead>
<tr>
<th>Major equipment</th>
<th>Valves</th>
<th>Connectors</th>
<th>Open-ended lines</th>
<th>Pressure relief valves</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eastern U.S.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wellheads</td>
<td>8</td>
<td>38</td>
<td>0.5</td>
<td>0</td>
</tr>
<tr>
<td>Separators</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Meters/piping</td>
<td>12</td>
<td>45</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Compressors</td>
<td>12</td>
<td>57</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>In-line heaters</td>
<td>14</td>
<td>65</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Dehydrators</td>
<td>24</td>
<td>90</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Western U.S.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wellheads</td>
<td>11</td>
<td>36</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Separators</td>
<td>34</td>
<td>106</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Meters/piping</td>
<td>14</td>
<td>51</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Compressors</td>
<td>73</td>
<td>179</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>In-line heaters</td>
<td>14</td>
<td>65</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Dehydrators</td>
<td>24</td>
<td>90</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

### TABLE W–1C TO SUBPART W OF PART 98—DEFAULT AVERAGE COMPONENT COUNTS FOR MAJOR CRUDE OIL PRODUCTION EQUIPMENT

<table>
<thead>
<tr>
<th>Major equipment</th>
<th>Valves</th>
<th>Flanges</th>
<th>Connectors</th>
<th>Open-ended lines</th>
<th>Other components</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eastern U.S.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wellhead</td>
<td>5</td>
<td>10</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Separator</td>
<td>6</td>
<td>12</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Heater-treater</td>
<td>8</td>
<td>12</td>
<td>20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Header</td>
<td>5</td>
<td>10</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Western U.S.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wellhead</td>
<td>5</td>
<td>10</td>
<td>4</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Separator</td>
<td>6</td>
<td>12</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Heater-treater</td>
<td>8</td>
<td>12</td>
<td>20</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Header</td>
<td>5</td>
<td>10</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

### TABLE W–1D OF SUBPART W OF PART 98—DESIGNATION OF EASTERN AND WESTERN U.S.

<table>
<thead>
<tr>
<th>Eastern U.S.</th>
<th>Western U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connecticut</td>
<td>Alabama</td>
</tr>
<tr>
<td>Delaware</td>
<td>Alaska</td>
</tr>
<tr>
<td>Florida</td>
<td>Arizona</td>
</tr>
<tr>
<td>Georgia</td>
<td>Arkansas</td>
</tr>
<tr>
<td>Illinois</td>
<td>California</td>
</tr>
<tr>
<td>Indiana</td>
<td>Colorado</td>
</tr>
<tr>
<td>Kentucky</td>
<td>Hawaii</td>
</tr>
<tr>
<td>Maine</td>
<td>Idaho</td>
</tr>
<tr>
<td>Maryland</td>
<td>Iowa</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>Kansas</td>
</tr>
<tr>
<td>Michigan</td>
<td>Louisiana</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>Minnesota</td>
</tr>
<tr>
<td>New Jersey</td>
<td>Mississippi</td>
</tr>
<tr>
<td>New York</td>
<td>Missouri</td>
</tr>
<tr>
<td>North Carolina</td>
<td>Montana</td>
</tr>
<tr>
<td>Ohio</td>
<td>Nebraska</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>Nevada</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>New Mexico</td>
</tr>
<tr>
<td>South Carolina</td>
<td>North Dakota</td>
</tr>
<tr>
<td>Tennessee</td>
<td>Oklahoma</td>
</tr>
<tr>
<td>Vermont</td>
<td>Oregon</td>
</tr>
<tr>
<td>Virginia</td>
<td>South Dakota</td>
</tr>
</tbody>
</table>

### TABLE W–1D OF SUBPART W OF PART 98—DESIGNATION OF EASTERN AND WESTERN U.S.—Continued

<table>
<thead>
<tr>
<th>Eastern U.S.</th>
<th>Western U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Virginia</td>
<td>Texas</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>Utah</td>
</tr>
<tr>
<td></td>
<td>Washington</td>
</tr>
<tr>
<td></td>
<td>Wyoming</td>
</tr>
</tbody>
</table>

### TABLE W–2 TO SUBPART W OF PART 98—DEFAULT TOTAL HYDROCARBON EMISSION FACTORS FOR ONSHORE NATURAL GAS PROCESSING

<table>
<thead>
<tr>
<th>Leaker Emission Factors—Compressor Components, Gas Service</th>
<th>Emission Factor (scf/hour/ component)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve</td>
<td>15.07</td>
</tr>
<tr>
<td>Connector</td>
<td>5.68</td>
</tr>
</tbody>
</table>
### Environmental Protection Agency

#### § 98.238

**Table W–2 to Subpart W of Part 98—Default Total Hydrocarbon Emission Factors for Onshore Natural Gas Processing—Continued**

<table>
<thead>
<tr>
<th>Onshore natural gas processing</th>
<th>Emission Factor (scf/hour/ component)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open-Ended Line</td>
<td>17.54</td>
</tr>
<tr>
<td>Pressure Relief Valve</td>
<td>40.27</td>
</tr>
<tr>
<td>Meter</td>
<td>19.63</td>
</tr>
</tbody>
</table>

**Leaker Emission Factors—Non-Compressor Components, Gas Service**

| Valve                        | 6.52           |
| Connector                   | 5.80           |
| Open-Ended Line             | 17.54          |
| Pressure Relief Valve       | 2.04           |
| Meter                       | 2.98           |

1 Valves include control valves, block valves and regulator valves.

**Table W–3 to Subpart W of Part 98—Default Total Hydrocarbon Emission Factors for Onshore Natural Gas Transmission Compression**

<table>
<thead>
<tr>
<th>Onshore natural gas transmission compression</th>
<th>Emission Factor (scf/hour/ component)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve1</td>
<td>15.07</td>
</tr>
<tr>
<td>Connector</td>
<td>5.68</td>
</tr>
<tr>
<td>Open-Ended Line</td>
<td>17.54</td>
</tr>
<tr>
<td>Pressure Relief Valve</td>
<td>2.04</td>
</tr>
<tr>
<td>Meter</td>
<td>19.63</td>
</tr>
</tbody>
</table>

**Leaker Emission Factors—Compressor Components, Gas Service**

| Valve1                                      | 6.52           |
| Connector                                   | 5.80           |
| Open-Ended Line                            | 17.54          |
| Pressure Relief Valve                       | 2.04           |
| Meter                                       | 2.98           |

**Table W–4 to Subpart W of Part 98—Default Total Hydrocarbon Emission Factors for Underground Natural Gas Storage—Continued**

<table>
<thead>
<tr>
<th>Underground natural gas storage</th>
<th>Emission Factor (scf/hour/ component)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve</td>
<td>15.07</td>
</tr>
<tr>
<td>Connector</td>
<td>5.68</td>
</tr>
<tr>
<td>Open-Ended Line</td>
<td>17.54</td>
</tr>
<tr>
<td>Pressure Relief Valve</td>
<td>40.27</td>
</tr>
<tr>
<td>Meter</td>
<td>19.63</td>
</tr>
</tbody>
</table>

**Population Emission Factors—Storage Wellheads, Gas Service**

| Connector                      | 0.01 |
| Valve                          | 0.10 |
| Pressure Relief Valve          | 0.17 |

**Leaker Emission Factors—Storage Station, Gas Service**

| Open-Ended Line                | 0.03 |

**Population Emission Factors—Other Components, Gas Service**

| Low Continuous Bleed Pneumatic Device Vents | 1.41 |
| High Continuous Bleed Pneumatic Device Vents | 18.8 |
| Intermittent Bleed Pneumatic Device Vents   | 18.8 |

1 Valves include control valves, block valves and regulator valves.

**Table W–5 to Subpart W of Part 98—Default Methane Emission Factors for Liquefied Natural Gas (LNG) Storage**

<table>
<thead>
<tr>
<th>LNG Storage</th>
<th>Emission Factor (scf/hour/ component)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve</td>
<td>1.21</td>
</tr>
<tr>
<td>Pump Seal</td>
<td>4.06</td>
</tr>
<tr>
<td>Connector</td>
<td>0.35</td>
</tr>
<tr>
<td>Other1</td>
<td>1.80</td>
</tr>
</tbody>
</table>

**Population Emission Factors—LNG Storage Compressor, Gas Service**

| Vapor Recovery Compressor | 4.23 |

1 "Other" equipment type should be applied for any equipment type other than connectors, pumps, or valves.

**Table W–6 to Subpart W of Part 98—Default Methane Emission Factors for LNG Import and Export Equipment**

<table>
<thead>
<tr>
<th>LNG import and export equipment</th>
<th>Emission Factor (scf/hour/ component)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve</td>
<td>1.21</td>
</tr>
</tbody>
</table>

**Leaker Emission Factors—LNG Terminals Components, LNG Service**

<table>
<thead>
<tr>
<th>LNG Storage</th>
<th>Emission Factor (scf/hour/ component)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve</td>
<td>1.21</td>
</tr>
<tr>
<td>Pump Seal</td>
<td>4.06</td>
</tr>
<tr>
<td>Connector</td>
<td>0.35</td>
</tr>
<tr>
<td>Other1</td>
<td>1.80</td>
</tr>
</tbody>
</table>

1 Valves include control valves, block valves and regulator valves.
§ 98.240  Definition of the source category.

(a) The petrochemical production source category consists of all processes that produce acrylonitrile, carbon black, ethylene, ethylene dichloride, ethylene oxide, or methanol, except as specified in paragraphs (b) through (g) of this section. The source category includes processes that produce the petrochemical as an intermediate in the on-site production of other chemicals as well as processes that produce the petrochemical as an end product for sale or shipment off site.

(b) A process that produces a petrochemical as a byproduct is not part of the petrochemical production source category.

(c) A facility that makes methanol, hydrogen, and/or ammonia from synthesis gas is part of the petrochemical source category if the annual mass of methanol produced exceeds the individual annual mass production levels of both hydrogen recovered as product and ammonia. The facility is part of subpart P of this part (Hydrogen Production) if the annual mass of hydrogen recovered as product exceeds the individual annual mass production levels of both methanol and ammonia. The facility is part of subpart G of this part (Ammonia Manufacturing) if the annual mass of hydrogen, and/or ammonia from synthesis gas is part of the petrochemical source category if the annual mass production levels of both methanol and ammonia exceed the individual annual mass production levels of both methanol and ammonia.

(d) A direct chlorination process that is operated independently of an oxychlorination process to produce ethylene dichloride is not part of the petrochemical production source category.

(e) A process that produces bone black is not part of the petrochemical source category.

(f) A process that produces a petrochemical from bio-based feedstock is not part of the petrochemical production source category.

(g) A process that solely distills or recycles waste solvent that contains a

---

**TABLE W–6 TO SUBPART W OF PART 98—DEFAULT METHANE EMISSION FACTORS FOR LNG IMPORT AND EXPORT EQUIPMENT—Continued**

<table>
<thead>
<tr>
<th>LNG import and export equipment</th>
<th>Emission Factor (scf/hour/ component)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve</td>
<td>1.21</td>
</tr>
<tr>
<td>Pump Seal</td>
<td>4.06</td>
</tr>
<tr>
<td>Connector</td>
<td>0.35</td>
</tr>
<tr>
<td>Other *</td>
<td>1.80</td>
</tr>
</tbody>
</table>

**Population Emission Factors—LNG Terminals Compressor, Gas Service**

- Vapor Recovery Compressor²: 4.23

¹“Other“ equipment type should be applied for any equipment type other than connectors, pumps, or valves.

²Emission Factor is in units of "scf/hour/compressor."

---

**TABLE W–7 TO SUBPART W OF PART 98—DEFAULT METHANE EMISSION FACTORS FOR NATURAL GAS DISTRIBUTION**

<table>
<thead>
<tr>
<th>Natural gas distribution</th>
<th>Emission Factor (scf/hour/ component)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connector</td>
<td>1.72</td>
</tr>
<tr>
<td>Block Valve</td>
<td>0.566</td>
</tr>
<tr>
<td>Control Valve</td>
<td>9.48</td>
</tr>
<tr>
<td>Pressure Relief Valve</td>
<td>2.274</td>
</tr>
<tr>
<td>Orifice Meter</td>
<td>0.215</td>
</tr>
<tr>
<td>Regulator</td>
<td>0.784</td>
</tr>
<tr>
<td>Open-ended Line</td>
<td>26.633</td>
</tr>
</tbody>
</table>

**Population Emission Factors—Below Grade M&R**

<table>
<thead>
<tr>
<th>Below Grade M&amp;R Station, Inlet Pressure</th>
<th>Emission Factor (scf/hour/ component)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 300 psig</td>
<td>1.32</td>
</tr>
<tr>
<td>100 to 300 psig</td>
<td>0.20</td>
</tr>
<tr>
<td>&lt; 100 psig</td>
<td>0.10</td>
</tr>
</tbody>
</table>

**Population Emission Factors—Distribution Mains, Gas Service**

<table>
<thead>
<tr>
<th>Material</th>
<th>Emission Factor (scf/hour/ component)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unprotected Steel</td>
<td>12.77</td>
</tr>
<tr>
<td>Protected Steel</td>
<td>0.36</td>
</tr>
<tr>
<td>Plastic</td>
<td>1.15</td>
</tr>
<tr>
<td>Cast Iron</td>
<td>27.67</td>
</tr>
</tbody>
</table>

**Population Emission Factors—Distribution Services, Gas Service**

<table>
<thead>
<tr>
<th>Material</th>
<th>Emission Factor (scf/hour/ component)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unprotected Steel</td>
<td>0.19</td>
</tr>
<tr>
<td>Protected Steel</td>
<td>0.02</td>
</tr>
<tr>
<td>Plastic</td>
<td>0.001</td>
</tr>
<tr>
<td>Copper</td>
<td>0.03</td>
</tr>
</tbody>
</table>

¹City gate stations at custody transfer and excluding customer meters.
²Excluding customer meters.
³Emission Factor is in units of "scf/hour/number of services.
⁴Emission Factor is in units of "scf/hour/station."
⁵Emission Factor is in units of "scf/hour/number of services."

§ 98.241 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a petrochemical process as specified in §98.240, and the facility meets the requirements of either §98.2(a)(1) or (2).

§ 98.242 GHGs to report.

You must report the information in paragraphs (a) through (c) of this section:

(a) CO$_2$, CH$_4$, and N$_2$O process emissions from each petrochemical process unit. Process emissions include CO$_2$ generated by reaction in the process and by combustion of process off-gas in stationary combustion units and flares.

(1) If you comply with §98.243(b) or (d), report under this subpart the calculated CO$_2$, CH$_4$, and N$_2$O emissions from each stationary combustion source and flare that burns any amount of petrochemical process off-gas. If you comply with §98.243(b), also report under this subpart the measured CO$_2$ emissions from process vents routed to stacks that are not associated with stationary combustion units.

(2) If you comply with §98.243(c), report CO$_2$ emissions for each petrochemical process unit.

(b) CO$_2$, CH$_4$, and N$_2$O combustion emissions from stationary combustion units.

(1) If you comply with §98.243(b) or (d), report these emissions from stationary combustion units that are associated with petrochemical process units and burn only supplemental fuel under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.

(2) If you comply with §98.243(c), report CO$_2$, CH$_4$, and N$_2$O combustion emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C only for the combustion of supplemental fuel. Determine the applicable Tier in subpart C of this part (General Stationary Fuel Combustion Sources) based on the maximum heat input capacity of the stationary combustion source.

(c) CO$_2$ captured. You must report the mass of CO$_2$ captured under, subpart PP of this part (Suppliers of Carbon Dioxide (CO$_2$)) by following the requirements of subpart PP.

§ 98.243 Calculating GHG emissions.

(a) If you route all process vent emissions and emissions from combustion of process off-gas to one or more stacks and use CEMS on each stack to measure CO$_2$ emissions (except flare stacks), then you must determine process-based GHG emissions in accordance with paragraph (b) of this section. Otherwise, determine process-based GHG emissions in accordance with the procedures specified in paragraph (c) or (d) of this section.

(b) Continuous emission monitoring system (CEMS). Route all process vent emissions and emissions from combustion of process off-gas to one or more stacks and determine CO$_2$ emissions from each stack (except flare stacks) according to the Tier 4 Calculation Methodology requirements in subpart C of this part. For each stack (except flare stacks) that includes emissions from combustion of petrochemical process off-gas, calculate CH$_4$ and N$_2$O emissions in accordance with subpart C of this part (use the Tier 3 methodology, emission factors for "Petroleum" in Table C–2 of subpart C of this part, and either the default high heat value for fuel gas in Table C–1 of subpart C of this part or a calculated HHV, as allowed in Equation C–8 of subpart C of this part). For each flare, calculate CO$_2$, CH$_4$, and N$_2$O emissions using the methodology specified in §98.253(b)(1) through (b)(3).

(c) Mass balance for each petrochemical process unit. Calculate the emissions of CO$_2$ from each process unit, for each calendar month as described in paragraphs (c)(1) through (c)(5) of this section.

(1) For each gaseous and liquid feedstock and product, measure the volume or mass used or produced each calendar month with a flow meter by following the procedures specified in §98.244(b)(2).
Alternatively, for liquids, you may calculate the volume used or collected in each month based on measurements of the liquid level in a storage tank at least once per month (and just prior to each change in direction of the level of the liquid) following the procedures specified in §98.244(b)(3). Fuels used for combustion purposes are not considered to be feedstocks.

(2) For each solid feedstock and product, measure the mass used or produced each calendar month by following the procedures specified in §98.244(b)(1).

(3) Collect a sample of each feedstock and product at least once per month and determine the carbon content of each sample according to the procedures of §98.244(b)(4). If multiple valid carbon content measurements are made during the monthly measurement period, average them arithmetically. However, if a particular liquid or solid feedstock is delivered in lots, and if multiple deliveries of the same feedstock are received from the same supply source in a given calendar month, only one representative sample is required. Alternatively, you may use the results of analyses conducted by a fuel or feedstock supplier, provided the sampling and analysis is conducted at least once per month using any of the procedures specified in §98.244(b)(4).

(4) If you determine that the monthly average concentration of a specific compound in a feedstock or product is greater than 99.5 percent by volume (or mass for liquids and solids), then as an alternative to the sampling and analysis specified in paragraph (c)(3) of this section, you may calculate the carbon content assuming 100 percent of that feedstock or product is the specific compound during periods of normal operation. You must maintain records of any determination made in accordance with this paragraph (c)(4) along with all supporting data, calculations, and other information. This alternative may not be used for products during periods of operation when off-specification product is produced. You must re-evaluate determinations made under this paragraph (c)(4) after any process change that affects the feedstock or product composition. You must keep records of the process change and the corresponding composition determinations. If the feedstock or product composition changes so that the average monthly concentration falls below 99.5 percent, you are no longer permitted to use this alternative method.

(5) Calculate the CO$_2$ mass emissions for each petrochemical process unit using Equations X-1 through X-4 of this section.

(1) **Gaseous feedstocks and products.**

Use Equation X-1 of this section to calculate the net annual carbon input or output from gaseous feedstocks and products. Note that the result will be a negative value if there are no gaseous feedstocks in the process but there are gaseous products.

\[
C_g = \sum_{i=1}^{12} \left[ \sum_{n=1}^{12} \left( F_{gf,i}^n \cdot CC_{gf,i}^n \cdot \frac{MW_f}{MVC} \right) - \left( P_{gp,i}^n \cdot CC_{gp,i}^n \cdot \frac{MW_p}{MVC} \right) \right] \quad (\text{Eq. X-1})
\]

Where:

- $C_g$ = Annual net contribution to calculated emissions from carbon (C) in gaseous materials (kilograms/year, kg/yr).
- $(F_{gf,i}^n)$ = Volume of gaseous feedstock $i$ introduced in month “n” (standard cubic feet, scf).
- $(CC_{gf,i}^n)$ = Average carbon content of the gaseous feedstock $i$ for month “n” (kg C per kg of feedstock).
- $(MW_f)$ = Molecular weight of gaseous feedstock $i$ (kg/kg-mole).
- $(P_{gp,i}^n)$ = Volume of gaseous product $i$ produced in month “n” (scf).
- $(CC_{gp,i}^n)$ = Average carbon content of gaseous product $i$, including streams containing CO$_2$ recovered for sale or use in another process, for month “n” (kg C per kg of product).
- $(MW_p)$ = Molecular weight of gaseous product $i$ (kg/kg-mole).

MVC = Molar volume conversion factor (849.5 scf per kg-mole at 68 °F and 14.7 pounds per square inch absolute or 836.6 scf/kg-mole at 60 °F and 14.7 pounds per square inch absolute).

$(F_{pv,i}^n)$ = Volume of gaseous product $i$ produced in month “n” (scf).

$(CC_{pv,i}^n)$ = Average carbon content of gaseous product $i$, including streams containing CO$_2$ recovered for sale or use in another process, for month “n” (kg C per kg of product).
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(MW$_{p,i}$ = Molecular weight of gaseous product $i$ (kg/kg-mole).  
$j$ = Number of feedstocks.  
k = Number of products.

(ii) Liquid feedstocks and products. Use Equation X-2 of this section to calculate the net carbon input or output from liquid feedstocks and products. Note that the result will be a negative value if there are no liquid feedstocks in the process but there are liquid products.

$$C_l = \sum_{n=1}^{12} \left[ \sum_{i=1}^{j or k} \left( F_{Lf, i,n} \cdot (CC_{Lf})_{i,n} - P_{Lp, i,n} \cdot (CC_{Lp})_{i,n} \right) \right]$$  (Eq. X-2)

Where:
- $C_l$ = Annual net contribution to calculated emissions from carbon in liquid materials, including liquid organic wastes (kg/yr).
- $(F_{Lf, i,n})$ = Volume or mass of liquid feedstock $i$ introduced in month “$n$” (gallons or kg).
- $(CC_{Lf, i,n})$ = Average carbon content of liquid feedstock $i$ for month “$n$” (kg C per gallon or kg of feedstock).
- $(P_{Lp, i,n})$ = Volume or mass of liquid product $i$ produced in month “$n$” (gallons or kg).
- $(CC_{Lp, i,n})$ = Average carbon content of liquid product $i$, including organic liquid wastes, for month “$n$” (kg C per gallon or kg of product).
- $j$ = Number of feedstocks.
- $k$ = Number of products.

(iii) Solid feedstocks and products. Use Equation X-3 of this section to calculate the net annual carbon input or output from solid feedstocks and products. Note that the result will be a negative value if there are no solid feedstocks in the process but there are solid products.

$$C_s = \sum_{n=1}^{12} \left[ \sum_{i=1}^{j or k} \left( F_{Sf, i,n} \cdot (CC_{Sf})_{i,n} - P_{Sp, i,n} \cdot (CC_{Sp})_{i,n} \right) \right]$$  (Eq. X-3)

Where:
- $C_s$ = Annual net contribution to calculated emissions from carbon in solid materials (kg/yr).
- $(F_{Sf, i,n})$ = Mass of solid feedstock $i$ introduced in month “$n$” (kg).
- $(CC_{Sf, i,n})$ = Average carbon content of solid feedstock $i$ for month “$n$” (kg C per kg of feedstock).
- $(P_{Sp, i,n})$ = Mass of solid product $i$ produced in month “$n$” (kg).
- $(CC_{Sp, i,n})$ = Average carbon content of solid product $i$ in month “$n$” (kg C per kg of product).
- $j$ = Number of feedstocks.
- $k$ = Number of products.

(iv) Annual emissions. Use the results from Equations X-1 through X-3 of this section, as applicable, in Equation X-4 of this section to calculate annual CO$_2$ emissions.

$$CO_2 = 0.001 \times \frac{44}{12} \times \left( C_g + C_j + C_s \right)$$  (Eq. X-4)

Where:
- $CO_2$ = Annual CO$_2$ mass emissions from process operations and process off-gas combustion (metric tons/year).
- 0.001 = Conversion factor from kg to metric tons.
- 44 = Molecular weight of CO$_2$ (kg/kg-mole).
- 12 = Atomic weight of carbon (C) (kg/kg-mole).

(d) Optional combustion methodology for ethylene production processes. For each ethylene production process, calculate GHG emissions from combustion
units that burn fuel that contains any off-gas from the ethylene process as specified in paragraphs (d)(1) through (d)(5) of this section.

(1) Except as specified in paragraphs (d)(2) and (d)(5) of this section, calculate CO$_2$ emissions using the Tier 3 or Tier 4 methodology in subpart C of this part.

(2) You may use either Equation C–1 or Equation C–2a in subpart C of this part to calculate CO$_2$ emissions from combustion of any ethylene process off-gas streams that meet either of the conditions in paragraphs (d)(2)(i) or (d)(2)(ii) of this section (for any default values in the calculation, use the defaults for fuel gas in Table C–1 of subpart C of this part). Follow the otherwise applicable procedures in subpart C to calculate emissions from combustion of all other fuels in the combustion unit.

(i) The annual average flow rate of fuel gas (that contains ethylene process off-gas) in the fuel gas line to the combustion unit, prior to any split to individual burners or ports, does not exceed 345 standard cubic feet per minute at 60 °F and 14.7 pounds per square inch absolute, and a flow meter is not installed at any point in the line supplying fuel gas or an upstream common pipe. Calculate the annual average flow rate using company records assuming total flow is evenly distributed over 525,600 minutes per year.

(ii) The combustion unit has a maximum rated heat input capacity of less than 30 mmBtu/hr, and a flow meter is not installed at any point in the line supplying fuel gas or an upstream common pipe.

(3) Except as specified in paragraph (d)(5) of this section, calculate CH$_4$ and N$_2$O emissions using the applicable procedures in §98.33(c) for the same tier methodology that you used for calculating CO$_2$ emissions.

(i) For all gaseous fuels that contain ethylene process off-gas, use the emission factors for “Petroleum” in Table C–2 of subpart C of this part (General Stationary Fuel Combustion Sources).

(ii) For Tier 3, use either the default high heat value for fuel gas in Table C–1 of subpart C of this part or a calculated HHV, as allowed in Equation C–8 of subpart C of this part.

(4) You are not required to use the same Tier for each stationary combustion unit that burns ethylene process off-gas.

(5) For each flare, calculate CO$_2$, CH$_4$, and N$_2$O emissions using the methodology specified in §§98.253(b)(1) through (b)(3).

§98.244 Monitoring and QA/QC requirements.

(a) If you use CEMS to determine emissions from process vents, you must comply with the procedures specified in §98.34(c).

(b) If you use the mass balance methodology in §98.243(c), use the procedures specified in paragraphs (b)(1) through (b)(4) of this section to determine feedstock and product flows and carbon contents.

(1) Operate, maintain, and calibrate belt scales or other weighing devices as described in Specifications, Tolerances, and Other Technical Requirements for Weighing and Measuring Devices NIST Handbook 44 (2009) (incorporated by reference, see §98.7), or follow procedures specified by the measurement device manufacturer. You must recalibrate each weighing device according to one of the following frequencies. You may recalibrate either at the minimum frequency specified by the manufacturer or biennially (i.e., once every two years).

(2) Operate and maintain all flow meters used for gas and liquid feedstocks and products according to the manufacturer’s recommended procedures. You must calibrate each of these flow meters as specified in paragraphs (b)(2)(i) and (b)(2)(ii) of this section:

(i) You may use either the calibration methods specified by the flow meter manufacturer or an industry consensus standard method. Each flow meter must meet the applicable accuracy specification in §98.3(i), except as otherwise specified in §§98.3(i)(4) through (i)(6).

(ii) You must recalibrate each flow meter according to one of the following frequencies. You may recalibrate at the minimum frequency specified by
the manufacturer, biennially (every two years), or at the interval specified by the industry consensus standard practice used.


(4) Beginning January 1, 2010, use any applicable methods specified in paragraphs (b)(4)(i) through (b)(4)(xlv) of this section to determine the carbon content or composition of feedstocks and products and the average molecular weight of gaseous feedstocks and products. Calibrate instruments in accordance with paragraphs (b)(4)(i) through (b)(4)(xvi), as applicable. For coal used as a feedstock, the samples for carbon content determinations shall be taken at a location that is representative of the coal feedstock used during the corresponding monthly period. For carbon black products, samples shall be taken of each grade or type of product produced during the monthly period. Samples of coal feedstock or carbon black product for carbon content determinations may be either grab samples collected and analyzed monthly or a composite of samples collected more frequently and analyzed monthly. Analyses conducted in accordance with methods specified in paragraphs (b)(4)(i) through (b)(4)(xv) of this section may be performed by the owner or operator, by an independent laboratory, or by the supplier of a feedstock.

(i) ASTM D1945–03, Standard Test Method for Analysis of Natural Gas by Gas Chromatography (incorporated by reference, see §98.7).


(iii) ASTM D2505–88(Reapproved 2004)e1 Standard Test Method for Ethylene, Other Hydrocarbons, and Carbon Dioxide in High-Purity Ethylene by Gas Chromatography (incorporated by reference, see §98.7).

(iv) ASTM UOP539–97 Refinery Gas Analysis by Gas Chromatography (incorporated by reference, see §98.7).


(vii) ASTM D5373–08 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, see §98.7).

(viii) Method 8015C, Method 8021B, Method 8031, or Method 9060A (all incorporated by reference, see §98.7). (x) Performance Specification 9 in 40 CFR part 60, appendix B for continuous online gas analyzers. The 7-day calibration error test period must be completed prior to the effective date of the rule.

§ 98.245  Procedures for estimating missing data.

For missing feedstock flow rates, product flow rates, and carbon contents, use the same procedures as for missing flow rates and carbon contents for fuels as specified in §98.35.

§ 98.246  Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a), (b), or (c) of this section, as appropriate for each process unit.

(a) If you use the mass balance methodology in §98.243(c), you must report the information specified in paragraphs (a)(1) through (a)(11) of this section for each type of petrochemical produced, reported by process unit.

(1) The petrochemical process unit ID number or other appropriate descriptor.

(2) The type of petrochemical produced, names of other products, and names of carbon-containing feedstocks.

(3) Annual CO₂ emissions calculated using Equation X–4 of this subpart.

(4) Each of the monthly volume, mass, and carbon content values used in Equations X–1 through X–3 of this subpart (i.e., the directly measured values, substitute values, or the calculated values based on other measured data such as tank levels or gas composition) and the molecular weights for gaseous feedstocks and products used in Equation X–1 of this subpart were determined. Indicate whether you used the alternative to sampling and analysis specified in §98.243(c)(4).

(5) Annual quantity of each type of petrochemical produced from each process unit (metric tons).

(6) Name of each method listed in §98.244 used to determine a measured parameter (or description of manufacturer’s recommended method).

(7) [Reserved]

(8) Identification of each combustion unit that burned both process off-gas and supplemental fuel.

(9) If you comply with the alternative to sampling and analysis specified in §98.243(c)(4), the amount of time during which off-specification product was produced, the volume or mass of off-specification product produced, and if applicable, the date of any process change that reduced the composition to less than 99.5 percent.

(10) You may elect to report the flow and carbon content of wastewater, and you may elect to report the annual mass of carbon released in fugitive emissions and in process vents that are not controlled with a combustion device. These values may be estimated based on engineering analyses. These values are not to be used in the mass balance calculation.

(11) If you determine carbon content or composition of a feedstock or product using a method under §98.244(b)(4)(xiv)(B), report the information listed in paragraphs (a)(11)(i) through (a)(11)(iv) of this section.
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through (a)(11)(iv) of this section. Include the information in paragraph (a)(11)(i) of this section in each annual report. Include the information in paragraphs (a)(11)(ii) and (a)(11)(iii) of this section only in the first applicable annual report, and provide any changes to this information in subsequent annual reports.

(i) Name or title of the analytical method.

(ii) A copy of the method. If the method is a modification of a method listed in §§ 98.244(b)(4)(i) through (xiv), you may provide a copy of only the sections that differ from the listed method.

(iii) An explanation of why an alternative to the methods listed in §§ 98.244(b)(4)(i) through (xii) is needed.

(b) If you measure emissions in accordance with § 98.243(b), then you must report the information listed in paragraphs (b)(1) through (b)(8) of this section.

(1) The petrochemical process unit ID or other appropriate descriptor, and the type of petrochemical produced.

(2) For CEMS used on stacks for stationary combustion units, report the relevant information required under § 98.36 for the Tier 4 calculation methodology. Section 98.36(b)(9)(iii) does not apply for the purposes of this subpart.

(3) For CEMS used on stacks that are not used for stationary combustion units, report the information required under § 98.36(e)(2)(vi).

(4) The CO₂ emissions from each stack and the combined CO₂ emissions from all stacks (except flare stacks) that handle process vent emissions and emissions from stationary combustion units that burn process off-gas for the petrochemical process unit. For each stationary combustion unit (or group of combustion units monitored with a single CO₂ CEMS) that burns petrochemical process off-gas, provide an estimate based on engineering judgment of the fraction of the total emissions that is attributable to combustion of off-gas from the petrochemical process unit.

(5) For stationary combustion units that burn process off-gas from the petrochemical process unit, report the information related to CH₄ and N₂O emissions as specified in paragraphs (b)(5)(i) through (b)(5)(iv) of this section.

(i) The CH₄ and N₂O emissions from each stack that is monitored with a CO₂ CEMS, expressed in metric tons of each gas and in metric tons of CO₂e. For each stack provide an estimate based on engineering judgment of the fraction of the total emissions that is attributable to combustion of off-gas from the petrochemical process unit.

(ii) The combined CH₄ and N₂O emissions from all stationary combustion units, expressed in metric tons of each gas and in metric tons of CO₂e.

(iii) The quantity of each type of fuel used in Equation C–8 in §98.33(c) for each stationary combustion unit or group of units (as applicable) during the reporting year, expressed in short tons for solid fuels, gallons for liquid fuels, and scf for gaseous fuels.

(iv) The HHV (either default or annual average from measured data) used in Equation C–8 in §98.33(c) for each stationary combustion unit or group of combustion units (as applicable).

(6) ID or other appropriate descriptor of each stationary combustion unit that burns process off-gas.

(7) Information listed in §98.256(e) of subpart Y of this part for each flare that burns process off-gas.

(8) Annual quantity of each type of petrochemical produced from each process unit (metric tons).

(c) If you comply with the combustion methodology specified in §98.243(d), you must report under this subpart the information listed in paragraphs (c)(1) through (c)(5) of this section.

(1) The ethylene process unit ID or other appropriate descriptor.

(2) For each stationary combustion unit that burns ethylene process off-gas (or group of stationary sources with a common pipe), except flares, the relevant information listed in §98.36 for the applicable Tier methodology. For each stationary combustion unit or group of units (as applicable) that burns ethylene process off-gas, provide an estimate based on engineering judgment of the fraction of the total emissions that is attributable to combustion of off-gas from the ethylene process unit.
§ 98.247 Records that must be retained.

In addition to the recordkeeping requirements in §98.3(g), you must retain the records specified in paragraphs (a) through (c) of this section, as applicable.

(a) If you comply with the CEMS measurement methodology in §98.243(b), then you must retain under this subpart the records required for the Tier 4 Calculation Methodology in §98.37, records of the procedures used to develop estimates of the fraction of total emissions attributable to combustion of petrochemical process off-gas as required in §98.246(b), and records of any annual average HHV calculations.

(b) If you comply with the mass balance methodology in §98.243(c), then you must retain records of the information listed in paragraphs (b)(1) through (b)(3) of this section.

(1) Results of feedstock or product composition determinations conducted in accordance with §98.243(c)(4).

(2) Start and end times and calculated carbon contents for time periods when off-specification product is produced, if you comply with the alternative methodology in §98.243(c)(4) for determining carbon content of feedstock or product.

(3) A part of the monitoring plan required under §98.3(g)(5), record the estimated accuracy of measurement devices and the technical basis for these estimates.

(4) The dates and results (e.g., percent calibration error) of the calibrations of each measurement device.

(c) If you comply with the combustion methodology in §98.243(d), then you must retain under this subpart the records required for the applicable Tier Calculation Methodologies in §98.37. If you comply with §98.243(d)(2), you must also keep records of the annual average flow calculations.


§ 98.248 Definitions.

Except as specified in this section, all terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Product, as used in §98.243, means each of the following carbon-containing outputs from a process: the petrochemical, recovered byproducts, and liquid organic wastes that are not incinerated onsite. Product does not include process vent emissions, fugitive emissions, or wastewater.

Subpart Y—Petroleum Refineries

§ 98.250 Definition of source category.

(a) A petroleum refinery is any facility engaged in producing gasoline, gasoline blending stocks, naphtha, kerosene, distillate fuel oils, residual fuel oils, lubricants, or asphalt (bitumen) through distillation of petroleum or through redistillation, cracking, or reforming of unfinished petroleum derivatives, except as provided in paragraph (b) of this section.

(b) For the purposes of this subpart, facilities that distill only pipeline transmix (off-spec material created when different specification products mix during pipeline transportation) are not petroleum refineries, regardless of the products produced.

(c) This source category consists of the following sources at petroleum refineries: Catalytic cracking units; fluid coking units; delayed coking units; catalytic reforming units; coke calcining units; asphalt blowing operations; blowdown systems; storage tanks; process equipment components (compressors, pumps, valves, pressure relief devices, flanges, and connectors) in gas service; marine vessel, barge, tanker truck, and similar loading operations; flares; sulfur recovery plants; and non-merchant hydrogen plants (i.e., hydrogen plants that are owned or under the direct control of the refinery owner and operator).
§ 98.251 Reporting threshold.
You must report GHG emissions under this subpart if your facility contains a petroleum refineries process and the facility meets the requirements of either § 98.2(a)(1) or (a)(2).

§ 98.252 GHGs to report.
You must report:

(a) CO₂, CH₄, and N₂O combustion emissions from stationary combustion units and from each flare. Calculate and report the emissions from stationary combustion units under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C, except for emissions from combustion of fuel gas. For CO₂ emissions from combustion of fuel gas, use either Equation C–5 in subpart C of this part or the Tier 4 methodology in subpart C of this part, unless either of the conditions in paragraphs (a)(1) or (2) of this section are met, in which case use either Equations C–1 or C–2a in subpart C of this part. For CH₄ and N₂O emissions from combustion of fuel gas, use the applicable procedures in § 98.33(c) for the same tier methodology that was used for calculating CO₂ emissions. (Use the default CH₄ and N₂O emission factors for “Petroleum (All fuel types in Table C–1)” in Table C–2 of this part. For Tier 3, use either the default high heat value for fuel gas in Table C–1 of subpart C of this part or a calculated HHV, as allowed in Equation C–8 of subpart C of this part.) You may aggregate units, monitor common stacks, or monitor common (fuel) pipes as provided in § 98.36(c) when calculating and reporting emissions from stationary combustion units. Calculate and report the emissions from flares under this subpart.

(i) A flow meter is not installed at any point in the line supplying fuel gas or an upstream common pipe.

(ii) The fuel gas line contains only vapors from loading or unloading, waste or wastewater handling, and remediation activities that are combusted in a thermal oxidizer or thermal incinerator.

(b) CO₂, CH₄, and N₂O coke burn-off emissions from each catalytic cracking unit, fluid coking unit, and catalytic reforming unit under this subpart.

(c) CO₂ emissions from sour gas sent off site for sulfur recovery operations under this subpart. You must follow the calculation methodologies from § 98.253(f) and the monitoring and QA/QC methods, missing data procedures, reporting requirements, and recordkeeping requirements of this subpart.

(d) CO₂ process emissions from each on-site sulfur recovery plant under this subpart.

(e) CO₂, CH₄, and N₂O emissions from each coke calcining unit under this subpart.

(f) CO₂ and CH₄ emissions from asphalt blowing operations under this subpart.

(g) CH₄ emissions from equipment leaks, storage tanks, loading operations, delayed coking units, and uncontrolled blowdown systems under this subpart.

(h) CO₂, CH₄, and N₂O emissions from each process vent not specifically included in paragraphs (a) through (g) of this section under this subpart.

(i) CO₂ emissions from non-merchant hydrogen production process units (not including hydrogen produced from catalytic reforming units) under this subpart. You must follow the calculation methodologies, monitoring and
§ 98.253 Calculating GHG emissions.

(a) Calculate GHG emissions required to be reported in §98.252(b) through (l) using the applicable methods in paragraphs (b) through (n) of this section.

(b) For flares, calculate GHG emissions according to the requirements in paragraphs (b)(1) through (b)(3) of this section.

(1) Flow measurement. If you have a continuous flow monitor on the flare, you must use the measured flow rates when the monitor is operational and the flow rate is within the calibrated range of the measurement device to calculate the flare gas flow. If you do not have a continuous flow monitor on the flare and for periods when the monitor is not operational or the flow rate is outside the calibrated range of the measurement device, you must use engineering calculations, company records, or similar estimates of volumetric flare gas flow.

(i) Heat value or carbon content measurement. If you have a continuous higher heating value monitor or gas composition monitor on the flare or if you monitor these parameters at least weekly, you must use the measured heat value or carbon content value in calculating the CO₂ emissions from the flare using the applicable methods in paragraphs (b)(1)(ii)(A) and (b)(1)(ii)(B).

(A) If you monitor gas composition, calculate the CO₂ emissions from the flare using either Equation Y–1a or Equation Y–1b of this section. If daily or more frequent measurement data are available, you must use daily values when using Equation Y–1a or Equation Y–1b of this section; otherwise, use weekly values.

\[
CO_2 = 0.98 \times 0.001 \times \left( \sum_{p=1}^{n} \frac{44}{12} \times (Flare)_p \times \frac{(MW)_p}{MVC} \times (CC)_p \right)
\]  

(Eq. Y–1a)

Where:

- \(CO_2\) = Annual CO₂ emissions for a specific fuel type (metric tons/year).
- 0.98 = Assumed combustion efficiency of a flare.
- 0.001 = Unit conversion factor (metric tons per kilogram, mt/kg).
- \(n\) = Number of measurement periods. The minimum value for \(n\) is 52 (for weekly measurements); the maximum value for \(n\) is 366 (for daily measurements during a leap year).
- \(p\) = Measurement period index.
- 44 = Molecular weight of CO₂ (kg/kg-mole).
- 12 = Atomic weight of C (kg/kg-mole).
- \((Flare)_p\) = Volume of flare gas combusted during measurement period (standard cubic feet per period, scf/period).
- \((MW)_p\) = Average molecular weight of the flare gas combusted during measurement period (kg/kg-mole). If measurements are taken more frequently than daily, use the arithmetic average of measurement values within the day to calculate a daily average.
- \(MVC\) = Molar volume conversion factor (849.5 scf/kg-mole at 68 °F and 14.7 pounds per square inch absolute (psia) or 836.6 scf/kg-mole at 60 °F and 14.7 psia).
- \((CC)_p\) = Average carbon content of the flare gas combusted during measurement period (kg C per kg flare gas). If measurements are taken more frequently than daily, use the arithmetic average of measurement values within the day to calculate a daily average.

Gas flow rate in kg/period and replace the term “\((MW)_p/MVC\)” with “1”.

\((MW)_p\) = Average molecular weight of the flare gas combusted during measurement period (kg/kg-mole). If measurements are taken more frequently than daily, use the arithmetic average of measurement values within the day to calculate a daily average.
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\[ CO_2 = \sum_{p=1}^{n} \left[ (\text{Flare})_p \times \frac{44}{MVC} \times 0.001 \times \left( \frac{\%CO_2}{100\%} + \sum_{x=1}^{y} \left( \frac{\%C_x}{100\%} \times CMN_x \right) \right) \right] \]  

(Eq. Y-1b)

Where:

- \( CO_2 \) = Annual \( CO_2 \) emissions for a specific fuel type (metric tons/year).
- \( n \) = Number of measurement periods. The minimum value for \( n \) is 52 (for weekly measurements); the maximum value for \( n \) is 366 (for daily measurements during a leap year).
- \( p \) = Measurement period index.
- \( (\text{Flare})_p \) = Volume of flare gas combusted during measurement period (standard cubic feet per period, scf/period). If a mass flow meter is used, you must determine the average molecular weight of the flare gas during the measurement period and convert the mass flow to a volumetric flow.
- \( 44 \) = Molecular weight of \( CO_2 \) (kg/kg-mole).
- \( MVC \) = Molar volume conversion factor [849.5 scf/kg-mole at 68 °F and 14.7 psia or 836.6 scf/kg-mole at 60 °F and 14.7 psia].
- \( 0.001 \) = Unit conversion factor (metric tons per kilogram, mt/kg).
- \( \%CO_2 \) = Mole percent \( CO_2 \) concentration in the flare gas stream during the measurement period (mole percent = percent by volume).
- \( y \) = Number of carbon-containing compounds other than \( CO_2 \) in the flare gas stream.
- \( x \) = Index for carbon-containing compounds other than \( CO_2 \).
- \( 0.98 \) = Assumed combustion efficiency of a flare (mole \( CO_2 \) per mole carbon).
- \( \%C_x \) = Mole percent concentration of compound “\( x \)” in the flare gas stream during the measurement period (mole percent = percent by volume).
- \( CMN_x \) = Carbon mole number of compound “\( x \)” in the flare gas stream (mole carbon atoms per mole compound).

\[ CO_2 = 0.98 \times 0.001 \times \sum_{p=1}^{n} \left[ (\text{Flare})_p \times (HHV)_p \times EmF \right] \]  

(Eq. Y-2)

Where:

- \( CO_2 \) = Annual \( CO_2 \) emissions for a specific fuel type (metric tons/year).
- \( 0.98 \) = Assumed combustion efficiency of a flare.
- \( 0.001 \) = Unit conversion factor (metric tons per kilogram, mt/kg).
- \( n \) = Number of measurement periods. The minimum value for \( n \) is 52 (for weekly measurements); the maximum value for \( n \) is 366 (for daily measurements during a leap year).
- \( (\text{Flare})_p \) = Volume of flare gas combusted during measurement period (million (MM) scf/period). If a mass flow meter is used, you must also measure molecular weight and convert the mass flow to a volumetric flow as follows: \( \text{Flare}[\text{MMscf}] = 0.000001 \times \text{Flare}[\text{kg}] \times MVC/\text{MW}_p \), where \( MVC \) is the molar volume conversion factor [849.5 scf/kg-mole at 68 °F and 14.7 psia or 836.6 scf/kg-mole at 60 °F and 14.7 psia depending on the standard conditions used when determining \( (\text{HHV})_p \) and \( (\text{MW})_p \) is the average molecular weight of the flare gas combusted during measurement period (kg/kg-mole).
- \( (\text{HHV})_p \) = Higher heating value for the flare gas combusted during measurement period (British thermal units per scf, Btu/scf = MMBtu/MMscf). If measurements are taken more frequently than daily, use the arithmetic average of measurement values within the day to calculate a daily average.
- \( EmF \) = Default \( CO_2 \) emission factor of 60 kilograms \( CO_2 \)/MMBtu (HHV basis).

(iii) Alternative to heat value or carbon content measurements. If you do not measure the higher heating value or carbon content of the flare gas at least weekly, determine the quantity of gas...
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discharged to the flare separately for periods of routine flare operation and for periods of start-up, shutdown, or malfunction, and calculate the CO\(_2\) emissions as specified in paragraphs (b)(1)(iii)(A) through (b)(1)(iii)(C) of this section.

(A) For periods of start-up, shutdown, or malfunction, use engineering calculations and process knowledge to estimate the carbon content of the flared gas for each start-up, shutdown, or malfunction event exceeding 500,000 scf/day.

(B) For periods of normal operation, use the average heating value measured for the fuel gas for the heating value of the flare gas. If heating value is not measured, the heating value may be estimated from historic data or engineering calculations.

(C) Calculate the CO\(_2\) emissions using Equation Y–3 of this section.

\[
CO_2 = 0.98 \times 0.001 \times \left( Flare_{\text{norm}} \times HHV \times EmF + \sum_{p=1}^{44} \left( \frac{Flare_{\text{SSM}}}{MVC} \times \frac{MW}{12} \right) \times \frac{44}{12} \times EmF \right) \quad \text{(Eq. Y-3)}
\]

Where:
- \(CO_2\) = Annual CO\(_2\) emissions for a specific fuel type (metric tons/year).
- 0.98 = Assumed combustion efficiency of a flare.
- 0.001 = Unit conversion factor (metric tons per kilogram, mt/kg).
- \(Flare_{\text{norm}}\) = Annual volume of flare gas combusted during normal operations from company records, (million (MM) standard cubic feet per year, MMscf/year).
- HHV = Higher heating value for fuel gas or flare gas from company records (British thermal units per scf, Btu/scf = MMBtu/MMscf).
- EmF = Default CO\(_2\) emission factor for flare gas of 60 kilograms CO\(_2\)/MMBtu (HHV basis).
- \(n\) = Number of start-up, shutdown, and malfunction events during the reporting year exceeding 500,000 scf/day.
- \(p\) = Start-up, shutdown, and malfunction event index.
- 44 = Molecular weight of CO\(_2\) (kg/kg-mole).
- 12 = Atomic weight of C (kg/kg-mole).
- \(MW\) = Average molecular weight of the flare gas, from the analysis results or engineering calculations for the event (kg/kg-mole).
- MVC = Molar volume conversion factor (849.5 scf/kg-mole at 68 °F and 14.7 psia or 836.6 scf/kg-mole at 60 °F and 14.7 psia).
- \(CC\) = Average carbon content of the flare gas, from analysis results or engineering calculations for the event (kg C per kg flare gas).

(2) Calculate CH\(_4\) using Equation Y–4 of this section.

\[
CH_4 = \left( CO_2 \times \frac{EmF_{CH4}}{EmF} \right) + CO_2 \times \frac{0.02}{0.98} \times \frac{16}{44} \times f_{CH4} \quad \text{(Eq. Y-4)}
\]

Where:
- \(CH_4\) = Annual methane emissions from flared gas (metric tons CH\(_4\)/year).
- \(CO_2\) = Emission rate of CO\(_2\) from flared gas calculated in paragraph (b)(1) of this section (metric tons/year).
- EmF\(_{CH4}\) = Default CH\(_4\) emission factor for "PetroleumProducts" from Table C–2 of subpart C of this part. (General Stationary Fuel Combustion Sources) (kg CH\(_4\)/MMBtu).
- EmF = Default CO\(_2\) emission factor for flare gas of 60 kg CO\(_2\)/MMBtu (HHV basis).
- 0.02/0.98 = Correction factor for flare combustion efficiency.
- 16/44 = Correction factor ratio of the molecular weight of CH\(_4\) to CO\(_2\).
- \(f_{CH4}\) = Weight fraction of carbon in the flare gas prior to combustion that is contributed by methane from measurement values or engineering calculations (kg C in methane in flare gas/kg C in flare gas); default is 0.4.

(3) Calculate N\(_2\)O emissions using Equation Y–5 of this section.
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\[ N_{2}O = \left( \frac{CO_{2} \times \text{EmF}_{N2O}}{\text{EmF}} \right) \]  
(Eq. Y-5)

Where:

- \( N_{2}O \) = Annual nitrous oxide emissions from flared gas (metric tons \( N_{2}O \)/year).
- \( CO_{2} \) = Emission rate of \( CO_{2} \) from flared gas calculated in paragraph (b)(1) of this section (metric tons/year).
- \( \text{EmF}_{N2O} \) = Default \( N_{2}O \) emission factor for “PetroleumProducts” from Table C-2 of subpart C of this part (General Stationary Fuel Combustion Sources) (kg \( N_{2}O \)/MMBtu).
- \( \text{EmF} \) = Default \( CO_{2} \) emission factor for flare gas of 60 kg \( CO_{2} \)/MMBtu (HHV basis).

(c) For catalytic cracking units and traditional fluid coking units, calculate the GHG emissions using the applicable methods described in paragraphs (c)(1) through (c)(5) of this section.

(1) If you operate and maintain a CEMS that measures \( CO_{2} \) emissions according to subpart C of this part (General Stationary Fuel Combustion Sources), you must calculate and report \( CO_{2} \) emissions as provided in paragraphs (c)(1)(i) and (c)(1)(ii) of this section. Other catalytic cracking units and traditional fluid coking units must either install a CEMS that complies with the Tier 4 Calculation Methodology in subpart C of this part (General Stationary Combustion Sources), or follow the requirements of paragraphs (c)(2) or (3) of this section.

(i) Calculate \( CO_{2} \) emissions by following the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(ii) For catalytic cracking units whose process emissions are discharged through a combined stack with other \( CO_{2} \) emissions (e.g., co-mingled with emissions from a CO boiler) you must also calculate the other \( CO_{2} \) emissions using the applicable methods for the applicable subpart (e.g., subpart C of this part in the case of a CO boiler). Calculate the process emissions from the catalytic cracking unit or fluid coking unit as the difference in the \( CO_{2} \) CEMS emissions and the calculated emissions associated with the additional units discharging through the combined stack.

(2) For catalytic cracking units and fluid coking units with rated capacities greater than 10,000 barrels per stream day (bbls/sd) that do not use a continuous \( CO_{2} \) CEMS for the final exhaust stack, you must continuously or no less frequently than hourly monitor the \( O_{2}, CO_{2} \), and (if necessary) CO concentrations in the exhaust stack from the catalytic cracking unit regenerator or fluid coking unit burner prior to the combustion of other fossil fuels and calculate the \( CO_{2} \) emissions according to the requirements of paragraphs (c)(2)(i) through (c)(2)(iii) of this section:

(i) Calculate the \( CO_{2} \) emissions from each catalytic cracking unit and fluid coking unit using Equation Y-6 of this section.

\[ CO_{2} = \sum_{p=1}^{n} \left( Q_{r} \right)_{p} \times \left( \frac{\%CO_{2} + \%CO}{100} \times \frac{44}{MVC} \times 0.001 \right) \]  
(Eq. Y-6)

Where:

- \( CO_{2} \) = Annual \( CO_{2} \) mass emissions (metric tons/year).
- \( Q_{r} \) = Volumetric flow rate of exhaust gas from the fluid catalytic cracking unit regenerator or fluid coking unit burner prior to the combustion of other fossil fuels (dry standard cubic feet per hour, dscfh).
- \( \%CO_{2} \) = Hourly average percent \( CO_{2} \) concentration in the exhaust gas stream from the fluid catalytic cracking unit regenerator or fluid coking unit burner (percent by volume—dry basis).
- \( \%CO \) = Hourly average percent CO concentration in the exhaust gas stream from the fluid catalytic cracking unit regenerator or fluid coking unit burner (percent by volume—dry basis). When there is no post-combustion device, assume \( %CO \) to be zero.
- \( 44 \) = Molecular weight of \( CO_{2} \) (kg/kg-mole).
MVC = Molar volume conversion factor (849.5 scf/kg-mole at 68 °F and 14.7 psia or 836.6 scf/kg-mole at 60 °F and 14.7 psia).

0.001 = Conversion factor (metric ton/kg).

n = Number of hours in calendar year.

(ii) Either continuously monitor the volumetric flow rate of exhaust gas from the fluid catalytic cracking unit regenerator or fluid coking unit burner prior to the combustion of other fossil fuels or calculate the volumetric flow rate of this exhaust gas stream using either Equation Y–7a or Equation Y–7b of this section.

\[ Q_r = \frac{(79 * Q_o + (100 - %O_{oxy}) \cdot Q_{oxy})}{100 - %CO_2 - %CO - %O_2} \]  
(Eq. Y–7a)

Where:

\( Q_o \) = Volumetric flow rate of exhaust gas from the fluid catalytic cracking unit regenerator or fluid coking unit burner prior to the combustion of other fossil fuels (dscfh).

\( Q_a \) = Volumetric flow rate of air to the fluid catalytic cracking unit regenerator or fluid coking unit burner, as determined from control room instrumentation (dscfh).

\( Q_{oxy} \) = Volumetric flow rate of oxygen enriched air to the fluid catalytic cracking unit regenerator or fluid coking unit burner as determined from control room instrumentation (dscfh).

\( %O_2 \) = Hourly average percent oxygen concentration in exhaust gas stream from the fluid catalytic cracking unit regenerator or fluid coking unit burner (percent by volume—dry basis).

\( %CO_2 \) = Hourly average percent CO concentration in the exhaust gas stream from the fluid catalytic cracking unit regenerator or fluid coking unit burner (percent by volume—dry basis).

\( %CO \) = Hourly average percent CO concentration in the exhaust gas stream from the fluid catalytic cracking unit regenerator or fluid coking unit burner (percent by volume—dry basis). When no auxiliary fuel is burned and a continuous CO monitor is not required under 40 CFR part 63 subpart UUU, assume %CO to be zero.

\[ Q_r = \frac{(78.1 \cdot Q_o + (%N_{2,oxy} \cdot Q_{oxy})}{%N_{2,exhaust}} \]  
(Eq. Y–7b)

Where:

\( Q_o \) = Volumetric flow rate of exhaust gas from the fluid catalytic cracking unit regenerator or fluid coking unit burner prior to the combustion of other fossil fuels (dscfh).

\( Q_a \) = Volumetric flow rate of air to the fluid catalytic cracking unit regenerator or fluid coking unit burner, as determined from control room instrumentation (dscfh).

\( Q_{oxy} \) = Volumetric flow rate of oxygen enriched air to the fluid catalytic cracking unit regenerator or fluid coking unit burner as determined from control room instrumentation (dscfh).

\( %N_{2,oxy} \) = N\(_2\) concentration in oxygen enriched gas stream inlet to the fluid catalytic cracking unit regenerator or fluid coking unit burner based on oxygen purity specifications of the oxygen supply used for enrichment (percent by volume—dry basis).

\( %N_{2,exhaust} \) = Hourly average percent N\(_2\) concentration in the exhaust gas stream from the fluid catalytic cracking unit regenerator or fluid coking unit burner (percent by volume—dry basis).

(iii) If you have a CO boiler that uses auxiliary fuels or combusts materials other than catalytic cracking unit or fluid coking unit exhaust gas, you...
must determine the CO\textsubscript{2} emissions resulting from the combustion of these fuels or other materials following the requirements in subpart C and report those emissions by following the requirements of subpart C of this part.

(3) For catalytic cracking units and fluid coking units with rated capacities of 10,000 barrels per stream day (bbls/sd) or less that do not use a continuous CO\textsubscript{2} CEMS for the final exhaust stack, comply with the requirements in paragraph (c)(3)(i) of this section or paragraphs (c)(3)(ii) and (c)(3)(iii) of this section, as applicable.

(i) If you continuously or no less frequently than daily monitor the O\textsubscript{2}, CO\textsubscript{2}, and (if necessary) CO concentrations in the exhaust stack from the catalytic cracking unit regenerator or fluid coking unit burner prior to the combustion of other fossil fuels, you must calculate the CO\textsubscript{2} emissions according to the requirements of paragraphs (c)(2)(i) through (c)(2)(iii) of this section, except that daily averages are allowed and the summation can be performed on a daily basis.

(ii) If you do not monitor at least daily the O\textsubscript{2}, CO\textsubscript{2}, and (if necessary) CO concentrations in the exhaust stack from the catalytic cracking unit regenerator or fluid coking unit burner prior to the combustion of other fossil fuels, calculate the CO\textsubscript{2} emissions from each catalytic cracking unit and fluid coking unit using Equation Y–8 of this section.

\[
CO_2 = \frac{Q_{\text{unit}} \times (CBF \times 0.001) \times CC}{12} \quad \text{(Eq. Y-8)}
\]

Where:

- CO\textsubscript{2} = Annual CO\textsubscript{2} mass emissions (metric tons/year).
- Q\textsubscript{unit} = Annual throughput of unit from company records (barrels (bbl) per year, bbl/yr).
- CBF = Coke burn-off factor from engineering calculations (kg coke per barrel of feed); default for catalytic cracking units = 7.3; default for fluid coking units = 11.
- 0.001 = Conversion factor (metric ton/kg).
- CC = Carbon content of coke based on measurement or engineering estimate (kg C per kg coke); default = 0.94.
- 44/12 = Ratio of molecular weight of CO\textsubscript{2} to C (kg CO\textsubscript{2} per kg C).

(iii) If you have a CO boiler that uses auxiliary fuels or combusts materials other than catalytic cracking unit or fluid coking unit exhaust gas, you must determine the CO\textsubscript{2} emissions resulting from the combustion of these fuels or other materials following the requirements in subpart C of this part (General Stationary Fuel Combustion Sources) and report those emissions by following the requirements of subpart C of this part.

(4) Calculate CH\textsubscript{4} emissions using either unit specific measurement data, a unit-specific emission factor based on a source test of the unit, or Equation Y–9 of this section.

\[
CH_4 = \left(\frac{CO_2 \times \text{EmF}_2}{\text{EmF}_1}\right) \quad \text{(Eq. Y-9)}
\]

Where:

- CH\textsubscript{4} = Annual methane emissions from coke burn-off (metric tons CH\textsubscript{4}/year).
- CO\textsubscript{2} = Emission rate of CO\textsubscript{2} from coke burn-off calculated in paragraphs (c)(1), (c)(2), (e)(1), (e)(2), (g)(1), or (g)(2) of this section, as applicable (metric tons/year).
- EmF\textsubscript{1} = Default CO\textsubscript{2} emission factor for petroleum coke from Table C-1 of subpart C of this part (General Stationary Fuel Combustion Sources) (kg CO\textsubscript{2}/MMBtu).
- EmF\textsubscript{2} = Default CH\textsubscript{4} emission factor for "Petroleum Products" from Table C-2 of subpart C of this part (General Stationary Fuel Combustion Sources) (kg CH\textsubscript{4}/MMBtu).

(5) Calculate N\textsubscript{2}O emissions using either unit specific measurement data, a unit-specific emission factor based on a source test of the unit, or Equation Y–10 of this section.

\[
N_2O = \left(\frac{CO_2 \times \text{EmF}_3}{\text{EmF}_1}\right) \quad \text{(Eq. Y-10)}
\]

Where:

- N\textsubscript{2}O = Annual nitrous oxide emissions from coke burn-off (mt N\textsubscript{2}O/year).
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CO\textsubscript{2} = Emission rate of CO\textsubscript{2} from coke burn-off calculated in paragraphs (c)(1), (c)(2), (e)(1), (e)(2), (g)(1), or (g)(2) of this section, as applicable (metric tons/year).

Em\textsubscript{F1} = Default CO\textsubscript{2} emission factor for petroleum coke from Table C–1 of subpart C of this part (General Stationary Fuel Combustion Sources) (kg CO\textsubscript{2}/MMBtu).

Em\textsubscript{F3} = Default N\textsubscript{2}O emission factor for “PetroleumProducts” from Table C–2 of subpart C of this part (kg N\textsubscript{2}O/MMBtu).

(d) For fluid coking units that use the flexicoking design, the GHG emissions from the resulting use of the low value fuel gas must be accounted for only once. Typically, these emissions will be accounted for using the methods described in subpart C of this part (General Stationary Fuel Combustion Sources). Alternatively, you may use the methods in paragraph (c) of this section provided that you do not otherwise account for the subsequent combustion of this low value fuel gas.

(e) For catalytic reforming units, calculate the CO\textsubscript{2} emissions using the applicable methods described in paragraphs (e)(1) through (e)(3) of this section and calculate the CH\textsubscript{4} and N\textsubscript{2}O emissions using the methods described in paragraphs (c)(4) and (c)(5) of this section, respectively.

(1) If you operate and maintain a CEMS that measures CO\textsubscript{2} emissions according to subpart C of this part (General Stationary Fuel Combustion Sources), you must calculate CO\textsubscript{2} emissions as provided in paragraphs (c)(1)(i) and (c)(1)(ii) of this section. Other catalytic reforming units must either install a CEMS that complies with the Tier 4 Calculation Methodology in subpart C of this part, or follow the requirements of paragraph (e)(2) or (e)(3) of this section.

(2) If you continuously or no less frequently than daily monitor the O\textsubscript{2}, CO\textsubscript{2}, and (if necessary) CO concentrations in the exhaust stack from the catalytic reforming unit catalyst regenerator prior to the combustion of other fossil fuels, you must calculate the CO\textsubscript{2} emissions according to the requirements of paragraphs (c)(2)(i) through (c)(2)(iii) of this section.

(3) Calculate CO\textsubscript{2} emissions from the catalytic reforming unit catalyst regenerator using Equation Y–11 of this section.

\[
\sum_{n} \left[ \left( CB_{Q}\right)_{n} \times CC \times \frac{44}{12} \times 0.001 \right]
\]

(Eq. Y-11)

Where:

CO\textsubscript{2} = Annual CO\textsubscript{2} emissions (metric tons/year).

CB\textsubscript{Q} = Coke burn-off quantity per regeneration cycle or measurement period from engineering estimates (kg coke/cycle or kg coke/measurement period).

n = Number of regeneration cycles or measurement periods in the calendar year.

CC = Carbon content of coke based on measurement or engineering estimate (kg C per kg coke); default = 0.94.

44/12 = Ratio of molecular weight of CO\textsubscript{2} to C (kg CO\textsubscript{2} per kg C).

0.001 = Conversion factor (metric ton/kg).

(f) For on-site sulfur recovery plants and for sour gas sent off site for sulfur recovery, calculate and report CO\textsubscript{2} process emissions from sulfur recovery plants according to the requirements in paragraphs (f)(1) through (f)(5) of this section, or, for non-Claus sulfur recovery plants, according to the requirements in paragraph (j) of this section regardless of the concentration of CO\textsubscript{2} in the vented gas stream. Combustion emissions from the sulfur recovery plant (e.g., from fuel combustion in the Claus burner or the tail gas treatment incinerator) must be reported under subpart C of this part (General Stationary Fuel Combustion Sources). For the purposes of this subpart, the sour gas stream for which monitoring is required according to paragraphs (f)(2) through (f)(5) of this section is not considered a fuel.

(1) If you operate and maintain a CEMS that measures CO\textsubscript{2} emissions according to subpart C of this part, you must calculate CO\textsubscript{2} emissions under this subpart by following the Tier 4
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Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources). You must monitor fuel use in the Claus burner, tail gas incinerator, or other combustion sources that discharge via the final exhaust stack from the sulfur recovery plant and calculate the combustion emissions from the fuel use according to subpart C of this part. Calculate the process emissions from the sulfur recovery plant as the difference in the CO$_2$ CEMS emissions and the calculated combustion emissions associated with the sulfur recovery plant final exhaust stack. Other sulfur recovery plants must either install a CEMS that complies with the Tier 4 Calculation Methodology in subpart C, or follow the requirements of paragraphs (f)(2) through (f)(5) of this section, or (for non-Claus sulfur recovery plants only) follow the requirements in paragraph (j) of this section to determine CO$_2$ emissions for the sulfur recovery plant.

2) Flow measurement. If you have a continuous flow monitor on the sour gas feed to the sulfur recovery plant, you must use the measured flow rates when the monitor is operational to calculate the sour gas flow rate. If you do not have a continuous flow monitor on the sour gas feed to the sulfur recovery plant, you must use engineering calculations, company records, or similar estimates of volumetric sour gas flow.

3) Carbon content. If you have a continuous gas composition monitor capable of measuring carbon content on the sour gas feed to the sulfur recovery plant or if you monitor gas composition for carbon content on a routine basis, you must use the measured carbon content value. Alternatively, you may develop a site-specific carbon content factor using limited measurement data or engineering estimates or use the default factor of 0.20.

4) Calculate the CO$_2$ emissions from each sulfur recovery plant using Equation Y–12 of this section.

\[\text{CO}_2 = F_{SG} \times \frac{44}{MVC} \times M_{C} \times 0.001 \]  
(Eq. Y-12)

Where:
- $\text{CO}_2$ = Annual CO$_2$ emissions (metric tons/year).
- $F_{SG}$ = Volumetric flow rate of sour gas feed (including sour water stripper gas) to the sulfur recovery plant (scf/year).
- 44 = Molecular weight of CO$_2$ (kg/kg-mole).
- MVC = Molar volume conversion factor (849.5 scf/kg-mole at 68 °F and 14.7 psia or 836.6 scf/kg-mole at 60 °F and 14.7 psia).
- $M_{C}$ = Mole fraction of carbon in the sour gas to the sulfur recovery plant (kg-mole C/kg-mole gas); default = 0.20.
- 0.001 = Conversion factor, kg to metric tons.

5) If tail gas is recycled to the front of the sulfur recovery plant and the recycled flow rate and carbon content is included in the measured data under paragraphs (f)(2) and (f)(3) of this section, respectively, then the annual CO$_2$ emissions calculated in paragraph (f)(4) of this section must be corrected to avoid double counting these emissions. You may use engineering estimates to perform this correction or assume that the corrected CO$_2$ emissions are 95 percent of the uncorrected value calculated using Equation Y–12 of this section.

(g) For coke calcining units, calculate GHG emissions according to the applicable provisions in paragraphs (g)(1) through (g)(3) of this section.

1) If you operate and maintain a CEMS that measures CO$_2$ emissions according to subpart C of this part, you must calculate and report CO$_2$ emissions under this subpart by following the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources). You must monitor fuel use in the coke calcining unit that discharges via the final exhaust stack from the coke calcining unit and calculate the combustion emissions from the fuel use according to subpart C of this part. Calculate the process
emissions from the coke calcining unit as the difference in the CO₂ CEMS emissions and the calculated combustion emissions associated with the coke calcining unit final exhaust stack. Other coke calcining units must either install a CEMS that complies with the Tier 4 Calculation Methodology in subpart C of this part, or follow the requirements of paragraph (g)(2) of this section.

(2) Calculate the CO₂ emissions from the coke calcining unit using Equation Y–13 of this section.

\[
CO₂ = \frac{44}{12} \left( M_{\text{in}} \times CC_{\text{GC}} - (M_{\text{out}} + M_{\text{dust}}) \times CC_{\text{MPC}} \right) \quad \text{(Eq. Y-13)}
\]

Where:
- \( CO₂ \) = Annual CO₂ emissions (metric tons/year).
- \( M_{\text{in}} \) = Annual mass of green coke fed to the coke calcining unit from facility records (metric tons/year).
- \( CC_{\text{GC}} \) = Average mass fraction carbon content of green coke from facility measurement data (metric ton carbon/metric ton green coke).
- \( M_{\text{out}} \) = Annual mass of marketable petroleum coke produced by the coke calcining unit from facility records (metric tons petroleum coke/year).
- \( M_{\text{dust}} \) = Annual mass of petroleum coke dust removed from the process through the dust collection system of the coke calcining unit from facility records (metric tons petroleum coke dust/year).
- \( CC_{\text{MPC}} \) = Average mass fraction carbon content of marketable petroleum coke produced by the coke calcining unit from facility measurement data (metric ton carbon/metric ton petroleum coke).
- 44 = Molecular weight of CO₂ (kg/kg-mole).
- 12 = Atomic weight of C (kg/kg-mole).

(3) For all coke calcining units, use the CO₂ emissions from the coke calcining unit calculated in paragraphs (g)(1) or (g)(2), as applicable, and calculate CH₄ using the methods described in paragraph (c)(4) of this section and N₂O emissions using the methods described in paragraph (c)(5) of this section.

(h) For asphalt blowing operations, calculate CO₂ and CH₄ emissions according to the requirements in paragraph (j) of this section regardless of the CO₂ and CH₄ concentrations or according to the applicable provisions in paragraphs (h)(1) and (h)(2) of this section.

(1) For uncontrolled asphalt blowing operations or asphalt blowing operations controlled by vapor scrubbing, calculate CO₂ and CH₄ emissions using Equations Y–14 and Y–15 of this section, respectively.

\[
CO₂ = (Q_{\text{AB}} \times EF_{\text{AB,CO₂}}) \quad \text{(Eq. Y-14)}
\]

Where:
- \( CO₂ \) = Annual CO₂ emissions from uncontrolled asphalt blowing (metric tons CO₂/year).
- \( Q_{\text{AB}} \) = Quantity of asphalt blown (million barrels per year, MMbbl/year).
- \( EF_{\text{AB,CO₂}} \) = Emission factor for CO₂ from uncontrolled asphalt blowing from facility-specific test data (metric tons CO₂/MMbbl asphalt blown); default = 1,100.

\[
CH₄ = (Q_{\text{AB}} \times EF_{\text{AB,CH₄}}) \quad \text{(Eq. Y-15)}
\]

Where:
- \( CH₄ \) = Annual methane emissions from uncontrolled asphalt blowing (metric tons CH₄/year).
- \( Q_{\text{AB}} \) = Quantity of asphalt blown (million barrels per year, MMbbl/year).
- \( EF_{\text{AB,CH₄}} \) = Emission factor for CH₄ from uncontrolled asphalt blowing from facility-specific test data (metric tons CH₄/MMbbl asphalt blown); default = 580.

(2) For asphalt blowing operations controlled by thermal oxidizer or flare, calculate CO₂ using either Equation Y–16a or Equation Y–16b of this section and calculate CH₄ emissions using Equation Y–17 of this section, provided these emissions are not already included in the flare emissions calculated in paragraph (b) of this section or in the stationary combustion unit emissions required under subpart C of this part (General Stationary Fuel Combustion Sources).
\[ CO_2 = 0.98 \times \left( Q_{AB} \times CEF_{AB} \times \frac{44}{12} \right) \]  

(Eq. Y-16a)

Where:
- \( CO_2 \) = Annual \( CO_2 \) emissions from controlled asphalt blowing (metric tons \( CO_2 \)/year).
- 0.98 = Assumed combustion efficiency of thermal oxidizer or flare.
- \( Q_{AB} \) = Quantity of asphalt blown (MMbbl/year).
- \( CEF_{AB} \) = Carbon emission factor from asphalt blowing from facility-specific test data (metric tons C/MMbbl asphalt blown); default = 2,750.
- 44 = Molecular weight of \( CO_2 \) (kg/kg-mole).
- 12 = Atomic weight of C (kg/kg-mole).

\[ CO_2 = Q_{AB} \times \left( EF_{AB,CO2} + 0.98 \times \left( CEF_{AB} \times \frac{44}{12} - EF_{AB,CO2} \right) \right) \]  

(Eq. Y-16b)

Where:
- \( CO_2 \) = Annual \( CO_2 \) emissions from controlled asphalt blowing (metric tons \( CO_2 \)/year).
- \( Q_{AB} \) = Quantity of asphalt blown (MMbbl/year).
- 0.98 = Assumed combustion efficiency of thermal oxidizer or flare.
- \( EF_{AB,CO2} \) = Emission factor for \( CO_2 \) from uncontrolled asphalt blowing from facility-specific test data (metric tons \( CO_2 \)/MMbbl asphalt blown); default = 1,100.
- \( CEF_{AB} \) = Carbon emission factor from asphalt blowing from facility-specific test data (metric tons C/MMbbl asphalt blown); default = 2,750.
- 44 = Molecular weight of \( CO_2 \) (kg/kg-mole).
- 12 = Atomic weight of C (kg/kg-mole).

\[ CH_4 = 0.02 \times \left( Q_{AB} \times EF_{AB,CH4} \right) \]  

(Eq. Y-17)

Where:
- \( CH_4 \) = Annual methane emissions from controlled asphalt blowing (metric tons \( CH_4 \)/year).
- 0.02 = Fraction of methane uncombusted in thermal oxidizer or flare based on assumed 98% combustion efficiency.
- \( Q_{AB} \) = Quantity of asphalt blown (MMbbl/year).
- \( EF_{AB,CH4} \) = Emission factor for \( CH_4 \) from uncontrolled asphalt blowing from facility-specific test data (metric tons \( CH_4 \)/MMbbl asphalt blown); default = 880.

(i) For delayed coking units, calculate the \( CH_4 \) emissions from the depressurization of the coking unit vessel (i.e., the “coke drum”) to atmosphere using either of the methods provided in paragraphs (i)(1) or (i)(2), provided no water or steam is added to the vessel once it is vented to the atmosphere. You must use the method in paragraph (i)(1) of this section if you add water or steam to the vessel after it is vented to the atmosphere.

(1) Use the process vent method in paragraph (j) of this section to calculate the \( CH_4 \) emissions from the depressurization of the coke drum or vessel regardless of the \( CH_4 \) concentration and also calculate the \( CH_4 \) emissions from the subsequent opening of the vessel for coke cutting operations using Equation Y–18 of this section. If you have coke drums or vessels of different dimensions, use the process vent method in paragraph (j) of this section and Equation Y–18 for each set of coke drums or vessels to calculate the \( CH_4 \) emissions for all delayed coking units.
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\[ CH_4 = \left\{ \frac{N \times H \times \left( P_{CV} + 14.7 \right)}{14.7} \times f_{void} \times \frac{\pi \times D^2}{4} \times \frac{16}{MVC} \times MF_{CH4} \times 0.001 \right\} \quad (Eq. Y-18) \]

Where:

- \( CH_4 \) = Annual methane emissions from the delayed coking unit vessel opening (metric ton/year).
- \( N \) = Cumulative number of vessel openings for all delayed coking unit vessels of the same dimensions during the year.
- \( H \) = Height of coking unit vessel (feet).
- \( P_{CV} \) = Gauge pressure of the coking vessel when opened to the atmosphere prior to coke cutting or, if the alternative method provided in paragraph (i)(2) of this section is used, gauge pressure of the coking vessel when depressurization gases are first routed to the atmosphere (pounds per square inch gauge, psig).
- \( 14.7 \) = Assumed atmospheric pressure (pounds per square inch, psi).
- \( f_{void} \) = Volumetric void fraction of coking vessel prior to steaming (cf gas/cf of vessel); default = 0.6.
- \( D \) = Diameter of coking unit vessel (feet).
- \( 16 \) = Molecular weight of \( CH_4 \) (kg/kg-mole).
- \( MVC \) = Molar volume conversion factor (849.5 scf/kg-mole at 68 °F and 14.7 psia or 836.6 scf/kg-mole at 60 °F and 14.7 psia).
- \( MF_{CH4} \) = Mole fraction of methane in coking vessel gas (kg-mole \( CH_4 \)/kg-mole gas, wet basis); default value is 0.01.
- 0.001 = Conversion factor (metric ton/kg).

(2) Calculate the \( CH_4 \) emissions from the depressurization vent and subsequent opening of the vessel for coke cutting operations using Equation Y–18 of this section and the pressure of the coking vessel when the depressurization gases are first routed to the atmosphere. If you have coke drums or vessels of different dimensions, use Equation Y–18 for each set of coke drums or vessels of the same size and sum the resultant emissions across each set of coke drums or vessels to calculate the \( CH_4 \) emissions for all delayed coking units.

(j) For each process vent not covered in paragraphs (a) through (i) of this section that can reasonably be expected to contain greater than 2 percent by volume \( CO_2 \) or greater than 0.5 percent by volume of \( CH_4 \) or greater than 0.01 percent by volume (100 parts per million) of \( N_2O \), calculate GHG emissions using the Equation Y–19 of this section. You must use Equation Y–19 of this section to calculate \( CH_4 \) emissions for catalytic reforming unit depressurization and purge vents when methane is used as the purge gas or if you elected this method as an alternative to the methods in paragraphs (f), (h), or (k) of this section.

\[ E_x = \sum_{p=1}^{N} \left( (VR)_p \times (MF_x)_p \times \frac{MW_x}{MVC} \times (VT)_p \times 0.001 \right) \quad (Eq. Y-19) \]

Where:

- \( E_x \) = Annual emissions of each GHG from process vent (metric ton/yr).
- \( N \) = Number of venting events per year.
- \( P \) = Index of venting events.
- \( (VR)_p \) = Average volumetric flow rate of process gas during the event (scf per hour) from measurement data, process knowledge, or engineering estimates.
- \( (MF_x)_p \) = Mole fraction of \( GHG_x \) in process gas during the event (kg-mole of \( GHG_x \)/kg-mole of gas vent gas) from measurement data, process knowledge, or engineering estimates.
- \( MW_x \) = Molecular weight of \( GHG_x \) (kg/kg-mole); use 44 for \( CO_2 \) or \( N_2O \) and 16 for \( CH_4 \).
- \( MVC \) = Molar volume conversion factor (849.5 scf/kg-mole at 68 °F and 14.7 psia or 836.6 scf/kg-mole at 60 °F and 14.7 psia).
- \( (VT)_p \) = Venting time for the event, (hours).
- 0.001 = Conversion factor (metric ton/kg).

(k) For uncontrolled blowdown systems, you must calculate \( CH_4 \) emissions either using the methods for process vents in paragraph (j) of this section regardless of the \( CH_4 \) concentration or using Equation Y20 of this section. Blowdown systems where the uncondensed gas stream is routed to a flare or similar control device is considered to be controlled and is not
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required to estimate emissions under this paragraph (k).

\[ CH_4 = \left( \frac{Q_{\text{ref}} \times EF_{BD} \times 16}{MVC} \times 0.001 \right) \]  

(Eq. Y-20)

Where:

- \( CH_4 \) = Methane emission rate from blowdown systems (mt CH\(_4\)/year).
- \( Q_{\text{ref}} \) = Quantity of crude oil plus the quantity of intermediate products received from off site that are processed at the facility (MMbbl/year).
- \( EF_{BD} \) = Methane emission factor for uncontrolled blowdown systems (scf CH\(_4\)/MMbbl); default is 197,000.
- 16 = Molecular weight of CH\(_4\) (kg/kg-mole).
- MVC = Molar volume conversion factor (849.5 scf/kg-mole at 68 °F and 14.7 psia or 836.6 scf/kg-mole at 60 °F and 14.7 psia).
- 0.001 = Conversion factor (metric ton/kg).

(1) For equipment leaks, calculate CH\(_4\) emissions using the method specified in either paragraph (m)(1) or (m)(2) of this section.

(2) For storage tanks, except as provided in paragraph (m)(4) of this section, calculate CH\(_4\) emissions using the applicable methods in paragraphs (m)(1) through (m)(3) of this section.

(1) For storage tanks other than those processing unstabilized crude oil, you must either calculate CH\(_4\) emissions from storage tanks that have a vapor-phase methane concentration of 0.5 volume percent or more using tank-specific methane composition data (from measurement data or product knowledge) and the emission estimation methods provided in AP 42, Section 7.1 (incorporated by reference, see §98.7) or estimate CH\(_4\) emissions from storage tanks using Equation Y–22 of this section.

\[ CH_4 = (0.1 \times Q_{\text{ref}}) \]  

(Eq. Y-22)

Where:

- \( CH_4 \) = Annual methane emissions from storage tanks (metric tons/year).
- 0.1 = Default emission factor for storage tanks (metric ton CH\(_4\)/MMbbl).
- \( Q_{\text{ref}} \) = Quantity of crude oil plus the quantity of intermediate products received from off site that are processed at the facility (MMbbl/year).

(2) For storage tanks that process unstabilized crude oil, calculate CH\(_4\) emissions from the storage of unstabilized crude oil using either tank-specific methane composition data (from measurement data or product knowledge) and direct measurement of the gas generation rate or by using Equation Y–23 of this section.
\[ CH_4 = \left( \frac{995,000 \times Q_{un} \times \Delta P}{MF_{CH4}} \times \frac{16}{MVC} \right) \times 0.001 \] (Eq. Y-23)

Where:
- \( CH_4 \) = Annual methane emissions from storage tanks (metric tons/year).
- \( Q_{un} \) = Quantity of unstabilized crude oil received at the facility (MMbbl/year).
- \( \Delta P \) = Pressure differential from the previous storage pressure to atmospheric pressure (pounds per square inch, psi).
- \( MF_{CH4} \) = Average mole fraction of \( CH_4 \) in vent gas from the unstabilized crude oil storage tanks from facility measurements (kg-mole \( CH_4 \)/kg-mole gas); use 0.27 as a default if measurement data are not available.
- \( 995,000 \) = Correlation Equation factor (scf gas per MMbbl per psi).
- \( 16 \) = Molecular weight of \( CH_4 \) (kg/kg-mole).
- \( MVC \) = Molar volume conversion factor (849.5 scf/kg-mole at 68 °F and 14.7 psia or 836.6 scf/kg-mole at 60 °F and 14.7 psia).
- \( 0.001 \) = Conversion factor (metric ton/kg).

(3) You do not need to calculate \( CH_4 \) emissions from storage tanks that meet any of the following descriptions:
- (i) Units permanently attached to conveyances such as trucks, trailers, rail cars, barges, or ships;
- (ii) Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere;
- (iii) Bottoms receivers or sumps;
- (iv) Vessels storing wastewater; or
- (v) Reactor vessels associated with a manufacturing process unit.

(n) For crude oil, intermediate, or product loading operations for which the vapor-phase concentration of methane is 0.5 volume percent or more, calculate \( CH_4 \) emissions from loading operations using vapor-phase methane composition data (from measurement data or process knowledge) and the emission estimation procedures provided in AP 42, Section 5.2 (incorporated by reference, see §98.3(i)). All gas flow meters, gas composition monitors, and heating value monitors must be recalibrated at the applicable frequency specified in paragraph (b) of this section.

(a) Fuel flow meters, gas composition monitors, and heating value monitors that are associated with sources that use a CEMS to measure CO\(_2\) emissions according to subpart C of this part or that are associated with stationary combustion sources must meet the applicable monitoring and QA/QC requirements in §98.34.

(b) All gas flow meters, gas composition monitors, and heating value monitors that are used to provide data for the GHG emissions calculations in this subpart for sources other than those subject to the requirements in paragraph (a) of this section shall be calibrated according to the procedures specified by the manufacturer, or according to the procedures in the applicable methods specified in paragraphs (c) through (g) of this section. In the case of gas flow meters, all gas flow meters must meet the calibration accuracy requirements in §98.3(i). All gas flow meters, gas composition monitors, and heating value monitors must be recalibrated at the applicable frequency specified in paragraph (b)(1) or (b)(2) of this section.

(1) You must recalibrate each gas flow meter according to one of the following frequencies. You may recalibrate at the minimum frequency specified by the manufacturer, biennially (every two years), or at the interval specified by the industry consensus standard practice used.

(2) You must recalibrate each gas composition monitor and heating value monitor according to one of the following frequencies. You may recalibrate at the minimum frequency specified by the manufacturer, annually, or at the interval specified by the industry standard practice used.

(c) For flare or sour gas flow meters and gas flow meters used to comply with the requirements in §98.253(j), operate, calibrate, and maintain the flow meter according to one of the following. You may use the procedures

(d) Except as provided in paragraph (g) of this section, determine gas composition and, if required, average molecular weight of the gas using any of the following methods. Alternatively, the results of chromatographic analysis of the fuel may be used, provided that the gas chromatograph is operated, maintained, and calibrated according to the manufacturer’s instructions; and the methods used for operation, maintenance, and calibration of the gas chromatograph are documented in the written Monitoring Plan for the unit under §98.3(g)(5).

(1) Method 18 at 40 CFR part 60, appendix A-6.

(2) ASTM D1945–03 Standard Test Method for Analysis of Natural Gas by Gas Chromatography (incorporated by reference, see §98.7).

(3) ASTM D1946–90 (Reapproved 2006) Standard Practice for Analysis of Reformed Gas by Gas Chromatography (incorporated by reference, see §98.7).

(4) GPA 2261–00 Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography (incorporated by reference, see §98.7).

(5) UOP539–97 Refinery Gas Analysis by Gas Chromatography (incorporated by reference, see §98.7).


(e) Determine flare gas higher heating value using any of the following methods. Alternatively, the results of chromatographic analysis of the fuel may be used, provided that the gas chromatograph is operated, maintained, and calibrated according to the manufacturer’s instructions; and the methods used for operation, maintenance, and calibration of the gas chromatograph are documented in the written Monitoring Plan for the unit under §98.3(g)(5).

(1) ASTM D4809–06 Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method) (incorporated by reference, see §98.7).


(f) For gas flow meters used to comply with the requirements in §98.253(c)(2)(i), install, operate, calibrate, and maintain each gas flow meter according to the requirements in 40 CFR 63.1572(c) and the following requirements.

(1) Locate the flow monitor at a site that provides representative flow rates. Avoid locations where there is swirling flow or abnormal velocity distributions
due to upstream and downstream disturbances.

(2) [Reserved]

(3) Use a continuous monitoring system capable of correcting for the temperature, pressure, and moisture content to output flow in dry standard cubic feet (standard conditions as defined in §98.6).

(g) For exhaust gas CO\textsubscript{2}/CO/O\textsubscript{2} composition monitors used to comply with the requirements in §98.253(c)(2), install, operate, calibrate, and maintain exhaust gas composition monitors according to the requirements in 40 CFR 60.105a(b)(2) or 40 CFR 63.1572(c) or according to the manufacturer’s specifications and requirements.

(h) Determine the mass of petroleum coke as required by Equation Y–13 of this subpart using mass measurement equipment meeting the requirements for commercial weighing equipment as described in Specifications, Tolerances, and Other Technical Requirements For Weighing and Measuring Devices, NIST Handbook 44 (2009) (incorporated by reference, see §98.7). Calibrate the measurement device according to the procedures specified by NIST handbook 44 (incorporated by reference, see §98.7) or the procedures specified by the manufacturer. Recalibrate either biennially or at the minimum frequency specified by the manufacturer.

(i) Determine the carbon content of petroleum coke as required by Equation Y–13 of this subpart using any one of the following methods. Calibrate the measurement device according to procedures specified by the method or procedures specified by the measurement device manufacturer.


(3) ASTM D5373–08 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, see §98.7).

(j) Determine the quantity of petroleum process streams using company records. These quantities include the quantity of asphalt blown, quantity of crude oil plus the quantity of intermediate products received from off site, and the quantity of unstabilized crude oil received at the facility.

(k) The owner or operator shall document the procedures used to ensure the accuracy of the estimates of fuel usage, gas composition, and heating value including but not limited to calibration of weighing equipment, fuel flow meters, and other measurement devices. The estimated accuracy of measurements made with these devices shall also be recorded, and the technical basis for these estimates shall be provided.

§98.255 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations is required (e.g., concentrations, flow rates, fuel heating values, carbon content values). Therefore, whenever a quality-assured value of a required parameter is unavailable (e.g., if a CEMS malfunctions during unit operation or if a required fuel sample is not taken), a substitute data value for the missing parameter shall be used in the calculations.

(a) For stationary combustion sources, use the missing data procedures in subpart C of this part.

(b) For each missing value of the heat content, carbon content, or molecular weight of the fuel, substitute the arithmetic average of the quality-assured values of that parameter immediately preceding and immediately following the missing data incident. If the “after” value is not obtained by the end of the reporting year, you may use the “before” value for the missing data substitution. If, for a particular parameter, no quality-assured data are available prior to the missing data incident, the substitute data value shall be the first quality-assured value obtained after the missing data period.

(c) For missing CO\textsubscript{2}, CO, O\textsubscript{2}, CH\textsubscript{4}, or N\textsubscript{2}O concentrations, gas flow rate, and percent moisture, the substitute data
values shall be the best available estimate(s) of the parameter(s), based on all available process data (e.g., processing rates, operating hours, etc.). The owner or operator shall document and keep records of the procedures used for all such estimates.

(d) For hydrogen plants, use the missing data procedures in subpart P of this part.

§ 98.256 Data reporting requirements.

In addition to the reporting requirements of §98.3(c), you must report the information specified in paragraphs (a) through (q) of this section.

(a) For combustion sources, follow the data reporting requirements under subpart C of this part (General Stationary Fuel Combustion Sources).

(b) For hydrogen plants, follow the data reporting requirements under subpart P of this part (Hydrogen Production).

(c)-(d) [Reserved]

(e) For flares, owners and operators shall report:

1. The flare ID number (if applicable).
2. A description of the type of flare (steam assisted, air-assisted).
3. A description of the flare service (general facility flare, unit flare, emergency only or back-up flare).
4. The calculated CO$_2$, CH$_4$, and N$_2$O annual emissions for each flare, expressed in metric tons of each pollutant emitted.
5. A description of the method used to calculate the CO$_2$ emissions for each flare (e.g., reference section and equation number).
6. If you use Equation Y–1a of this subpart, an indication of whether daily or weekly measurement periods are used, the annual volume of flare gas combusted (in million (MM) scf/year), the annual average higher heating value of the flare gas (in mmBtu/MMscf), and an indication of whether the annual volume of flare gas combusted and the annual average higher heating value of the flare gas were determined using standard conditions of 68 °F and 14.7 psia or 60 °F and 14.7 psia.
7. The fraction of carbon in the flare gas contributed by methane used in Equation Y–4 of this subpart and the basis for its value.
8. For catalytic cracking units, traditional fluid coking units, and catalytic reforming units, owners and operators shall report:

1. The unit ID number (if applicable).
2. A description of the type of unit (fluid catalytic cracking unit, thermal catalytic cracking unit, traditional fluid coking unit, or catalytic reforming unit).
3. Maximum rated throughput of the unit, in bbl/stream day.
(4) The calculated \(\text{CO}_2\), \(\text{CH}_4\), and \(\text{N}_2\text{O}\) annual emissions for each unit, expressed in metric tons of each pollutant emitted.

(5) A description of the method used to calculate the \(\text{CO}_2\) emissions for each unit (e.g., reference section and equation number).

(6) If you use a CEMS, the relevant information required under §98.36 for the Tier 4 Calculation Methodology, the \(\text{CO}_2\) annual emissions as measured by the CEMS (unadjusted to remove \(\text{CO}_2\) combustion emissions associated with additional units, if present) and the process \(\text{CO}_2\) emissions as calculated according to §98.253(c)(1)(ii). Report the \(\text{CO}_2\) annual emissions associated with sources other than those from the coke burn-off in the applicable subpart (e.g., subpart C of this part in the case of a CO boiler).

(7) If you use Equation Y–6 of this subpart, the annual average exhaust gas flow rate, \(\%\text{CO}_2\), \(\%\text{CO}\), and the molar volume conversion factor (in scf/kg-mole).

(8) If you use Equation Y–7a of this subpart, the annual average flow rate of inlet air and oxygen-enriched air, \(\%\text{O}_{\text{inlet}}\), \(\%\text{O}_{\text{enrich}}\), \(\%\text{CO}_2\), and \(\%\text{CO}\).

(9) If you use Equation Y–7b of this subpart, the annual average flow rate of inlet air and oxygen-enriched air, \(\%\text{N}_{\text{inlet}}\), \(\%\text{N}_{\text{enrich}}\), and \(\%\text{N}_2\text{exhaust}\).

(10) If you use Equation Y–8 of this subpart, the coke burn-off factor, annual throughput of unit, and the average carbon content of coke and the basis for the factor.

(11) Indicate whether you use a measured value, a unit-specific emission factor, or a default emission factor for \(\text{CH}_4\) emissions. If you use a unit-specific emission factor for \(\text{CH}_4\), report the unit-specific emission factor for \(\text{CH}_4\), the units of measure for the unit-specific factor, the activity data for calculating emissions (e.g., if the emission factor is based on coke burn-off rate, the annual quantity of coke burned), and the basis for the factor.

(12) Indicate whether you use a measured value, a unit-specific emission factor, or a default emission factor for \(\text{N}_2\text{O}\) emissions. If you use a unit-specific emission factor for \(\text{N}_2\text{O}\), report the unit-specific emission factor for \(\text{N}_2\text{O}\), the units of measure for the unit-specific factor, the activity data for calculating emissions (e.g., if the emission factor is based on coke burn-off rate, the annual quantity of coke burned), and the basis for the factor.

(13) If you use Equation Y–11 of this subpart, the number of regeneration cycles or measurement periods during the reporting year, the annual coke burn-off quantity per cycle or measurement period, and the average carbon content of the coke.

(g) For fluid coking unit of the flexicoking type, the owner or operator shall report:

(1) The unit ID number (if applicable).

(2) A description of the type of unit.

(3) Maximum rated throughput of the unit, in bbl/stream day.

(4) Indicate whether the GHG emissions from the low heat value gas are accounted for in subpart C of this part or §98.253(c).

(5) If the GHG emissions for the low heat value gas are calculated at the flexicoking unit, also report the calculated annual \(\text{CO}_2\), \(\text{CH}_4\), and \(\text{N}_2\text{O}\) emissions for each unit, expressed in metric tons of each pollutant emitted, and the applicable equation input parameters specified in paragraphs (f)(7) through (f)(13) of this section.

(h) For sulfur recovery plants and for emissions from sour gas sent off-site for sulfur recovery, the owner and operator shall report:

(1) The plant ID number (if applicable).

(2) Maximum rated throughput of each independent sulfur recovery plant, in metric tons sulfur produced/stream day, a description of the type of sulfur recovery plant, and an indication of the method used to calculate \(\text{CO}_2\) annual emissions for the sulfur recovery plant (e.g., \(\text{CO}_2\) CEMS, Equation Y–12, or process vent method in §98.253(j)).

(3) The calculated \(\text{CO}_2\) annual emissions for each sulfur recovery plant, expressed in metric tons. The calculated annual \(\text{CO}_2\) emissions from sour gas sent off-site for sulfur recovery, expressed in metric tons.

(4) If you use Equation Y–12 of this subpart, the annual volumetric flow to the sulfur recovery plant (in scf/year), the molar volume conversion factor (in scf/kg-mole), and the annual average
mole fraction of carbon in the sour gas (in kg-mole C/kg-mole gas).

5) If you recycle tail gas to the front of the sulfur recovery plant, indicate whether the recycled flow rate and carbon content are included in the measured data under §98.253(f)(2) and (3). Indicate whether a correction for CO₂ emissions in the tail gas was used in Equation Y–12. If so, then report the value of the correction, the annual volume of recycled tail gas (in scf/year) and the annual average mole fraction of carbon in the tail gas (in kg-mole C/kg-mole gas). Indicate whether you used the default (95%) or a unit specific correction, and if used, report the approach used.

6) If you use a CEMS, the relevant information required under §98.36 for the Tier 4 Calculation Methodology, the CO₂ annual emissions as measured by the CEMS and the annual process CO₂ emissions calculated according to §98.253(g)(1). Report the CO₂ annual emissions associated with fuel combustion subpart C of this part (General Stationary Fuel Combustion Sources).

7) If you use the process vent method in §98.253(j) for a non-Claus sulfur recovery plant, the relevant information required under paragraph (l)(5) of this section.

(i) For coke calcining units, the owner and operator shall report:
   (1) The unit ID number (if applicable).
   (2) Maximum rated throughput of the unit, in metric tons coke calcined/stream day.
   (3) The calculated CO₂, CH₄, and N₂O annual emissions for each unit, expressed in metric tons of each pollutant emitted.
   (4) A description of the method used to calculate the CO₂ emissions for each unit (e.g., reference section and equation number).

5) If you use Equation Y–13 of this subpart, annual mass and carbon content of green coke fed to the unit, the annual mass and carbon content of marketable coke produced, the annual mass of coke dust removed from the process through dust collection systems, and an indication of whether coke dust is recycled to the unit (e.g., all dust is recycled, or none of the dust is recycled).

6) If you use a CEMS, the relevant information required under §98.36 for the Tier 4 Calculation Methodology, the CO₂ annual emissions as measured by the CEMS and the annual process CO₂ emissions calculated according to §98.253(g)(1).

7) Indicate whether you use a measured value, a unit-specific emission factor or a default for CH₄ emissions. If you use a unit-specific emission factor for CH₄, the unit-specific emission factor, the units of measure for the unit-specific factor, the activity data for calculating emissions (e.g., if the emission factor is based on coke burn-off rate, the annual quantity of coke burned), and the basis for the factor.

8) Indicate whether you use a measured value, a unit-specific emission factor, or a default emission factor for N₂O emissions. If you use a unit-specific emission factor for N₂O, report the unit-specific emission factor for N₂O, the units of measure for the unit-specific factor, the activity data for calculating emissions (e.g., if the emission factor is based on coke burn-off rate, the annual quantity of coke burned), and the basis for the factor.

(j) For asphalt blowing operations, the owner or operator shall report:

(1) The unit ID number (if applicable).

(2) The quantity of asphalt blown (in million bbl) at the unit in the reporting year.

(3) The type of control device used to reduce methane (and other organic) emissions from the unit.

(4) The calculated annual CO₂ and CH₄ emissions for each unit, expressed in metric tons of each pollutant emitted.

(5) If you use Equation Y–14 of this subpart, the CO₂ emission factor used and the basis for the value.

(6) If you use Equation Y–15 of this subpart, the CH₄ emission factor used and the basis for the value.

(7) If you use Equation Y–16 of this subpart, the carbon emission factor used and the basis for the value.

(8) If you use Equation Y–16b of this subpart, the CO₂ emission factor used
and the basis for its value and the carbon emission factor used and the basis for its value.

(9) If you use Equation Y–17 of this subpart, the CH₄ emission factor used and the basis for the value.

(k) For delayed coking units, the owner or operator shall report:

(1) The cumulative annual CH₄ emissions (in metric tons of CH₄) for all delayed coking units at the facility.

(2) A description of the method used to calculate the CH₄ emissions for each unit (e.g., reference section and equation number).

(3) The total number of delayed coking units at the facility, the total number of delayed coking drums at the facility, and for each coke drum or vessel: The dimensions, the typical gauge pressure of the coking drum when first vented to the atmosphere, typical void fraction, the typical drum outage (i.e., the unfilled distance from the top of the drum, in feet), the molar volume conversion factor (in scf/kg-mole), and annual number of coke-cutting cycles.

(4) For each set of coking drums that are the same dimensions: The number of coking drums in the set, the height and diameter of the coke drums (in feet), the cumulative number of vessel openings for all delayed coking drums in the set, the typical venting pressure (in psig), void fraction (in cf gas/cf of vessel), and the mole fraction of methane in coking gas (in kg-mole CF₄/kg-mole gas, wet basis).

(5) The basis for the volumetric void fraction of the coke vessel prior to steaming and the basis for the mole fraction of methane in the coking gas.

(1) For each process vent subject to §98.253(j), the owner or operator shall report:

(1) The vent ID number (if applicable).

(2) The unit or operation associated with the emissions.

(3) The type of control device used to reduce methane (and other organic) emissions from the unit, if applicable.

(4) The calculated annual CO₂, CH₄, and N₂O emissions for each vent, expressed in metric tons of each pollutant emitted.

(5) The annual volumetric flow discharged to the atmosphere (in scf), and an indication of the measurement or estimation method, annual average mole fraction of each GHG above the concentration threshold or otherwise required to be reported and an indication of the measurement or estimation method, the molar volume conversion factor (in scf/kg-mole), and for intermittent vents, the number of venting events and the cumulative venting time.

(m) For uncontrolled blowdown systems, the owner or operator shall report:

(1) An indication of whether the uncontrolled blowdown emission are reported under §98.253(k) or §98.253(j) or a statement that the facility does not have any uncontrolled blowdown systems.

(2) The cumulative annual CH₄ emissions (in metric tons of CH₄) for uncontrolled blowdown systems.

(3) For uncontrolled blowdown systems reporting under §98.253(k), the total quantity (in million bbl) of crude oil plus the quantity of intermediate products received from off site that are processed at the facility in the reporting year, the methane emission factor used for uncontrolled blowdown systems, the basis for the value, and the molar volume conversion factor (in scf/kg-mole).

(4) For uncontrolled blowdown systems reporting under §98.253(j), the relevant information required under paragraph (l)(5) of this section.

(n) For equipment leaks, the owner or operator shall report:

(1) The cumulative CH₄ emissions (in metric tons of each pollutant emitted) for all equipment leak sources.

(2) The method used to calculate the reported equipment leak emissions.

(3) The number of each type of emission source listed in Equation Y–21 of this subpart at the facility.

(o) For storage tanks, the owner or operator shall report:

(1) The cumulative annual CH₄ emissions (in metric tons of CH₄) for all storage tanks, except for those used to process unstabilized crude oil.

(2) For storage tanks other than those processing unstabilized crude oil:

(1) The method used to calculate the reported storage tank emissions for storage tanks other than those processing unstabilized crude (i.e., either
§ 98.261 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a phosphoric acid production source category.

§ 98.260 Definition of the source category.

The phosphoric acid production source category consists of facilities with a wet-process phosphoric acid process line used to produce phosphoric acid. A wet-process phosphoric acid process line is the production unit or units identified by an individual identification number in an operating permit and/or any process unit or group of process units at a facility reacting phosphate rock from a common supply source with acid.

§ 98.261 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a phosphoric acid production source category.
§ 98.262 GHGs to report.

(a) You must report CO\(_2\) process emissions from each wet-process phosphoric acid process line.

(b) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO\(_2\), CH\(_4\), and N\(_2\)O from each stationary combustion unit following the requirements of subpart C of this part.

§ 98.263 Calculating GHG emissions.

You must calculate and report the annual process CO\(_2\) emissions from each wet-process phosphoric acid process line using the procedures in either paragraph (a) or (b) of this section.

(a) Calculate and report under this subpart the process CO\(_2\) emissions by operating and maintaining a CEMS according to the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(b) Calculate and report under this subpart the process CO\(_2\) emissions using the procedures in paragraphs (b)(1) and (b)(2) of this section.

1. Calculate the annual CO\(_2\) mass emissions from each wet-process phosphoric acid process line using the methods in paragraphs (b)(1)(i) or (ii) of this section, as applicable.

(ii) If your process measurement provides the inorganic carbon content of phosphate rock as an output, calculate and report the process CO\(_2\) emissions from each wet-process phosphoric acid process line using Equation Z–1a of this section:

\[
E_m = \sum_{i=1}^{b} \sum_{n=1}^{z} (IC_{n,i} \times P_{n,i}) \times \frac{2000}{2205} \times \frac{44}{12} \quad \text{(Eq. Z-1a)}
\]

Where:

- \(E_m\) = Annual CO\(_2\) mass emissions from a wet-process phosphoric acid process line \(m\) according to this Equation Z-1a (metric tons).
- \(IC_{n,i}\) = Inorganic carbon content of a grab sample batch of phosphate rock by origin \(i\) obtained during month \(n\), from the carbon analysis results (percent by weight, expressed as a decimal fraction).
- \(P_{n,i}\) = Mass of phosphate rock by origin \(i\) consumed in month \(n\) by wet-process phosphoric acid process line \(m\) (tons).
- \(z\) = Number of months during which the process line \(m\) operates.
- \(b\) = Number of different types of phosphate rock in month, by origin. If the grab sample is a composite sample of rock from more than one origin, \(b = 1\).
- \(2000/2205\) = Conversion factor to convert tons to metric tons.
- \(44/12\) = Ratio of molecular weights, CO\(_2\) to carbon.

(ii) If your process measurement provides the CO\(_2\) emissions directly as an output, calculate and report the process CO\(_2\) emissions from each wet-process phosphoric acid process line using Equation Z–1b of this section:

\[
E_m = \sum_{i=1}^{b} \sum_{n=1}^{z} (CO_{2n,i} \times P_{n,i}) \times \frac{2000}{2205} \quad \text{(Eq. Z-1b)}
\]

Where:

- \(E_m\) = Annual CO\(_2\) mass emissions from a wet-process phosphoric acid process line \(m\) according to this Equation Z-1b (metric tons).
- \(CO_{2n,i}\) = Carbon dioxide emissions of a grab sample batch of phosphate rock by origin \(i\) obtained during month \(n\) (percent by weight, expressed as a decimal fraction).
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(a) You must determine the total emissions from the facility using Equation Z-2 of this section:

\[ CO_2 = \sum_{m=1}^{p} E_m \quad \text{(Eq. Z-2)} \]

Where:

- \( CO_2 \) = Annual process \( CO_2 \) emissions from phosphoric acid production facility (metric tons/year).
- \( E_m \) = Annual process \( CO_2 \) emissions from wet-process phosphoric acid process line \( m \) (metric tons/year).
- \( p \) = Number of wet-process phosphoric acid process lines.

(b) You must determine the mass of phosphate rock consumed each month (by origin) in each wet-process phosphoric acid process line. You can use existing plant procedures that are used for accounting purposes (such as sales records) or you can use data from existing monitoring equipment that is used to measure total mass flow of phosphorous-bearing feed under 40 CFR part 60 or part 63.


§ 98.266 Monitoring and QA/QC requirements.

(a) You must obtain a monthly grab sample of phosphate rock directly from the rock being fed to the process line before it enters the mill using one of the following methods. You may conduct the representative bulk sampling using a method published by a consensus standards organization, or you may use industry consensus standard practice methods, including but not limited to the Phosphate Mining States Methods Used and Adopted by the Association of Fertilizer and Phosphate Chemists (AFPC) (P.O. Box 1645, Bartow, Florida 33831, (863) 534-9755, http://afpc.net, paul.mcafee@mosaicco.com). If phosphate rock is obtained from more than one origin in a month, you must obtain a sample from each origin of rock or obtain a composite representative sample.

§ 98.266 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) through (f) of this section.

(a) Annual phosphoric acid production by origin (as listed in Table Z–1 to this subpart) of the phosphate rock (tons).

(b) Annual phosphoric acid permitted production capacity (tons).

(c) Annual arithmetic average percent inorganic carbon or carbon dioxide in phosphate rock from monthly records (percent by weight, expressed as a decimal fraction).

(d) Annual phosphate rock consumption from monthly measurement records by origin, (as listed in Table Z–1 to this subpart) (tons).

(e) If you use a CEMS to measure CO₂ emissions, then you must report the information in paragraphs (e)(1) and (e)(2) of this section.

(1) The identification number of each wet-process phosphoric acid process line.

(2) The annual CO₂ emissions from each wet-process phosphoric acid process line (metric tons) and the relevant information required under 40 CFR 98.36 (e)(2)(vi) for the Tier 4 Calculation Methodology.

(f) If you do not use a CEMS to measure emissions, then you must report the information in paragraphs (f)(1) through (9) of this section.

(1) Identification number of each wet-process phosphoric acid process line.

(2) Annual CO₂ emissions from each wet-process phosphoric acid process line (metric tons) as calculated by either Equation Z–1a or Equation Z–1b of this subpart.

(3) Annual phosphoric acid permitted production capacity (tons) for each wet-process phosphoric acid process line (metric tons).

(4) Method used to estimate any missing values of inorganic carbon content or carbon dioxide content of phosphate rock for each wet-process phosphoric acid process line.

(5) Monthly inorganic carbon content of phosphate rock for each wet-process phosphoric acid process line for which Equation Z–1a is used (percent by weight, expressed as a decimal fraction), or CO₂ (percent by weight, expressed as a decimal fraction) for which Equation Z–1b is used.

(6) Monthly mass of phosphate rock consumed by origin, (as listed in Table Z–1 of this subpart) in production for each wet-process phosphoric acid process line (tons).

(7) Number of wet-process phosphoric acid process lines.

(8) Number of times missing data procedures were used to estimate phosphate rock consumption (months) and inorganic carbon contents of the phosphate rock (months).

(9) Annual process CO₂ emissions from phosphoric acid production facility (metric tons).


§ 98.267 Records that must be retained.

In addition to the records required by §98.3(g), you must retain the records specified in paragraphs (a) through (c) of this section for each wet-process phosphoric acid production facility.

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(a) Monthly mass of phosphate rock consumed by origin (as listed in Table Z–1 of this subpart) (tons).
(b) Records of all phosphate rock purchases and/or deliveries (if vertically integrated with a mine).
(c) Documentation of the procedures used to ensure the accuracy of monthly phosphate rock consumption by origin, as listed in Table Z–1 of this subpart.

§ 98.268 Definitions.
All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

TABLE Z–1 TO SUBPART Z OF PART 98—DEFAULT CHEMICAL COMPOSITION OF PHOSPHATE ROCK BY ORIGIN

<table>
<thead>
<tr>
<th>Origin</th>
<th>Total carbon (percent by weight)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Florida</td>
<td>1.6</td>
</tr>
<tr>
<td>North Florida</td>
<td>1.76</td>
</tr>
<tr>
<td>North Carolina (Calced)</td>
<td>0.76</td>
</tr>
<tr>
<td>Idaho (Calced)</td>
<td>0.60</td>
</tr>
<tr>
<td>Morocco</td>
<td>1.56</td>
</tr>
</tbody>
</table>

Subpart AA—Pulp and Paper Manufacturing

§ 98.270 Definition of source category.
(a) The pulp and paper manufacturing source category consists of facilities that produce market pulp (i.e., stand-alone pulp facilities), manufacture pulp and paper (i.e., integrated facilities), produce paper products from purchased pulp, produce secondary fiber from recycled paper, convert paper into paperboard products (e.g., containers), or operate coating and laminating processes.
(b) The emission units for which GHG emissions must be reported are listed in paragraphs (b)(1) through (b)(5) of this section:

1. Chemical recovery furnaces at kraft and soda mills (including recovery furnaces that burn spent pulping liquor produced by both the kraft and semichemical process).
2. Chemical recovery combustion units at sulfite facilities.
3. Chemical recovery combustion units at stand-alone semichemical facilities.
4. Pulp mill lime kilns at kraft and soda facilities.
5. Systems for adding makeup chemicals (CaCO$_3$, Na$_2$CO$_3$) in the chemical recovery areas of chemical pulp mills.

§ 98.271 Reporting threshold.
You must report GHG emissions under this subpart if your facility contains a pulp and paper manufacturing process and the facility meets the requirements of either §98.2(a)(1) or (a)(2).

§ 98.272 GHGs to report.
You must report the emissions listed in paragraphs (a) through (f) of this section:
(a) CO$_2$, biogenic CO$_2$, CH$_4$, and N$_2$O emissions from each kraft or soda chemical recovery furnace.
(b) CO$_2$, biogenic CO$_2$, CH$_4$, and N$_2$O emissions from each sulfite chemical recovery combustion unit.
(c) CO$_2$, biogenic CO$_2$, CH$_4$, and N$_2$O emissions from each stand-alone semichemical chemical recovery combustion unit.
(d) CO$_2$, biogenic CO$_2$, CH$_4$, and N$_2$O emissions from each kraft or soda pulp mill lime kiln.
(e) CO$_2$ emissions from addition of makeup chemicals (CaCO$_3$, Na$_2$CO$_3$) in the chemical recovery areas of chemical pulp mills.
(f) CO$_2$, CH$_4$, and N$_2$O combustion emissions from each stationary combustion unit. You must calculate and report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.

§ 98.273 Calculating GHG emissions.
(a) For each chemical recovery furnace located at a kraft or soda facility, you must determine CO$_2$, biogenic CO$_2$, CH$_4$, and N$_2$O emissions using the procedures in paragraphs (a)(1) through (a)(3) of this section. CH$_4$ and N$_2$O emissions must be calculated as the sum of emissions from combustion of fossil fuels and combustion of biomass in spent liquor solids.

1. Calculate fossil fuel-based CO$_2$ emissions from direct measurement of fossil fuels consumed and default emissions factors according to the Tier 1 methodology for stationary combustion sources in §98.33(a)(1). A higher
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Tier from § 98.33(a) may be used to calculate fossil fuel-based CO₂ emissions if the respective monitoring and QA/QC requirements described in § 98.34 are met.

(2) Calculate fossil fuel-based CH₄ and N₂O emissions from direct measurement of fossil fuels consumed, default or site-specific HHV, and default emissions factors and convert to metric tons of CO₂ equivalent according to the methodology for stationary combustion sources in § 98.33(c).

(3) Calculate biogenic CO₂ emissions and emissions of CH₄ and N₂O from biomass using measured quantities of spent liquor solids fired, site-specific HHV, and default or site-specific emissions factors, according to Equation AA–1 of this section:

\[ \text{CO}_2, \text{CH}_4, \text{or N}_2\text{O from biomass} = (0.90718) \times \text{Solids} \times \text{HHV} \times \text{EF} \]  
(Eq. AA-1)

Where:

\( \text{CO}_2, \text{CH}_4, \text{or N}_2\text{O, from Biomass} = \text{Biogenic CO}_2 \text{ emissions or emissions of CH}_4 \text{ or N}_2\text{O from spent liquor solids combustion (metric tons per year).} \)

\( \text{Solids} = \text{Mass of spent liquor solids combusted (short tons per year) determined according to } \S 98.274(b). \)

\( \text{HHV} = \text{Annual high heat value of the spent liquor solids (mmBtu per kilogram) determined according to } \S 98.274(b). \)

\( \text{(EF)} = \text{Default or site-specific emission factor for CO}_2, \text{CH}_4, \text{or N}_2\text{O, from Table AA–1 of this subpart (kg CO}_2, \text{CH}_4, \text{or N}_2\text{O per mmBtu).} \)

\( 0.90718 = \text{Conversion factor from short tons to metric tons.} \)

(b) For each chemical recovery combustion unit located at a sulfite or stand-alone semichemical facility, you must determine CO₂, CH₄, and N₂O emissions using the procedures in paragraphs (b)(1) through (b)(4) of this section:

\[ \text{Biogenic CO}_2 = \frac{44}{12} \times \text{Solids} \times \text{CC} \times (0.90718) \]  
(Eq. AA-2)

Where:

\( \text{Biogenic CO}_2 = \text{Annual CO}_2 \text{ mass emissions for spent liquor solids combustion (metric tons per year).} \)

\( \text{Solids} = \text{Mass of the spent liquor solids combusted (short tons per year) determined according to } \S 98.274(b). \)

\( \text{CC} = \text{Annual carbon content of the spent liquor solids, determined according to } \S 98.274(b) \text{ (percent by weight, expressed as a decimal fraction, e.g., 96\% = 0.96).} \)

\( \frac{44}{12} = \text{Ratio of molecular weights, CO}_2 \text{ to carbon.} \)

\( 0.90718 = \text{Conversion from short tons to metric tons.} \)

(4) Calculate CH₄ and N₂O emissions from biomass using Equation AA–1 of this section and the default CH₄ and N₂O emissions factors for kraft facilities in Table AA–1 of this subpart and convert the CH₄ or N₂O emissions to
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§ 98.274 Monitoring and QA/QC requirements.

(a) Each facility subject to this subpart must quality assure the GHG emissions data according to the applicable requirements in §98.34. All QA/QC data must be available for inspection upon request.

(b) Fuel properties needed to perform the calculations in Equations AA–1 and AA–2 of this subpart must be determined according to paragraphs (b)(1) through (b)(3) of this section.

(1) High heat values of black liquor must be determined no less than annually using T684 om–06 Gross Heating Value of Black Liquor, TAPPI (incorporated by reference, see §98.7). If measurements are performed more frequently than annually, then the high heat value used in Equation AA–1 of this subpart must be based on the average of the representative measurements made during the year.

(2) The annual mass of spent liquor solids must be determined using either of the methods specified in paragraph (b)(2)(i) or (b)(2)(ii) of this section.

(i) Measure the mass of spent liquor solids annually (or more frequently) using T–650 om–05 Solids Content of Black Liquor, TAPPI (incorporated by reference in §98.7). If measurements are performed more frequently than annually, then the mass of spent liquor solids used in Equation AA–1 of this subpart must be based on the average of the representative measurements made during the year.

§ 98.274 Monitoring and QA/QC requirements.

(a) Each facility subject to this subpart must quality assure the GHG emissions data according to the applicable requirements in §98.34. All QA/QC data must be available for inspection upon request.

(b) Fuel properties needed to perform the calculations in Equations AA–1 and AA–2 of this subpart must be determined according to paragraphs (b)(1) through (b)(3) of this section.

(1) High heat values of black liquor must be determined no less than annually using T684 om–06 Gross Heating Value of Black Liquor, TAPPI (incorporated by reference, see §98.7). If measurements are performed more frequently than annually, then the high heat value used in Equation AA–1 of this subpart must be based on the average of the representative measurements made during the year.

(2) The annual mass of spent liquor solids must be determined using either of the methods specified in paragraph (b)(2)(i) or (b)(2)(ii) of this section.

(i) Measure the mass of spent liquor solids annually (or more frequently) using T–650 om–05 Solids Content of Black Liquor, TAPPI (incorporated by reference in §98.7). If measurements are performed more frequently than annually, then the mass of spent liquor solids used in Equation AA–1 of this subpart must be based on the average of the representative measurements made during the year.

\[
\text{CO}_2 = \left[ M(\text{CaCO}_3) \cdot \frac{44}{100} + M(\text{Na}_2\text{CO}_3) \cdot \frac{44}{105.99} \right] \cdot 1000 \text{ kg/metric ton} \quad (\text{Eq. AA-3})
\]

Where:

\( \text{CO}_2 \) = \( \text{CO}_2 \) mass emissions from makeup chemicals (kilograms/year).

\( M(\text{CaCO}_3) \) = Make-up quantity of CaCO\(_3\) used for the reporting year (metric tons per year).

\( M(\text{Na}_2\text{CO}_3) \) = Make-up quantity of Na\(_2\)CO\(_3\) used for the reporting year (metric tons per year).

44 = Molecular weight of CO\(_2\).

100 = Molecular weight of CaCO\(_3\).

105.99 = Molecular weight of Na\(_2\)CO\(_3\).
(ii) Determine the annual mass of spent liquor solids based on records of measurements made with an online measurement system that determines the mass of spent liquor solids fired in a chemical recovery furnace or chemical recovery combustion unit.

(3) Carbon analyses for spent pulping liquor must be determined no less than annually using ASTM D5373–08 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, see §98.7). If measurements using ASTM D5373–08 are performed more frequently than annually, then the spent pulping liquor carbon content used in Equation AA–2 of this subpart must be based on the average of the representative measurements made during the year.

(c) Each facility must keep records that include a detailed explanation of how company records of measurements are used to estimate GHG emissions. The owner or operator must also document the procedures used to ensure the accuracy of the measurements of fuel, spent liquor solids, and makeup chemical usage, including, but not limited to calibration of weighing equipment, fuel flow meters, and other measurement devices. The estimated accuracy of measurements made with these devices must be recorded and the technical basis for these estimates must be provided. The procedures used to convert spent pulping liquor flow rates to units of mass (i.e., spent liquor solids firing rates) also must be documented.

(d) Records must be made available upon request for verification of the calculations and measurements.

§ 98.276 Data reporting requirements.

In addition to the information required by §98.3(c) and the applicable information required by §98.36, each annual report must contain the information in paragraphs (a) through (k) of this section as applicable:

(a) Annual emissions of CO₂, biogenic CO₂, CH₄, biogenic CH₄, N₂O, and biogenic N₂O (metric tons per year).

(b) Annual quantities fossil fuels by type used in chemical recovery furnaces and chemical recovery combustion units in short tons for solid fuels, gallons for liquid fuels and scf for gaseous fuels.

(c) Annual mass of the spent liquor solids combusted (short tons per year), and basis for determining the annual mass of the spent liquor solids combusted (whether based on T650 om-05 Solids Content of Black Liquor, TAPPI (incorporated by reference, see §98.7) or an online measurement system).

(d) The high heat value (HHV) of the spent liquor solids used in Equation AA–1 of this subpart (mmBtu per kilogram).

(e) The default or site-specific emission factor for CO₂, CH₄, or N₂O, used in Equation AA–1 of this subpart (kg CO₂, CH₄, or N₂O per mmBtu).

(f) The carbon content (CC) of the spent liquor solids, used in Equation AA–2 of this subpart (percent by
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(b) Annual analyses of spent pulping liquor HHV for each chemical recovery furnace at kraft and soda facilities.

c) Annual analyses of spent pulping liquor carbon content for each chemical recovery combustion unit at a sulfate or semichemical pulp facility.

(d) Annual quantity of spent liquor solids combusted in each chemical recovery furnace and chemical recovery combustion unit, and the basis for determining the annual quantity of the spent liquor solids combusted (whether based on T650 om–05 Solids Content of Black Liquor, TAPPI (incorporated by reference, see §98.7) or an online measurement system). If an online measurement system is used, you must retain records of the calculations used to determine the annual quantity of spent liquor solids combusted from the continuous measurements.

(e) Annual steam purchases.

(f) Annual quantities of makeup chemicals used.

§ 98.278 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

### TABLE AA–1 TO SUBPART AA OF PART 98—KRAFT PULPING LIQUOR EMISSIONS FACTORS FOR BIOMASS-BASED CO₂, CH₄, AND N₂O

<table>
<thead>
<tr>
<th>Wood furnish</th>
<th>Biomass-based emissions factors (kg/mmBtu HHV)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CO₂</td>
</tr>
<tr>
<td>North American Softwood</td>
<td>94.4</td>
</tr>
<tr>
<td>North American Hardwood</td>
<td>93.7</td>
</tr>
<tr>
<td>Bagasse</td>
<td>95.5</td>
</tr>
<tr>
<td>Bamboo</td>
<td>93.7</td>
</tr>
<tr>
<td>Straw</td>
<td>95.1</td>
</tr>
</tbody>
</table>

* Includes emissions from both the recovery furnace and pulp mill lime kiln.

### TABLE AA–2 TO SUBPART AA OF PART 98—KRAFT LIME KILN AND CALCINER EMISSIONS FACTORS FOR FOSSIL FUEL-BASED CH₄ AND N₂O

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Fossil fuel-based emissions factors (kg/mmBtu HHV)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kraft lime kilns</td>
</tr>
<tr>
<td></td>
<td>CH₄</td>
</tr>
<tr>
<td>Residual Oil</td>
<td></td>
</tr>
<tr>
<td>Distillate Oil</td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td></td>
</tr>
<tr>
<td>Biogas</td>
<td></td>
</tr>
<tr>
<td>Petroleum coke</td>
<td></td>
</tr>
</tbody>
</table>

* Emission factors for kraft calciners are not available.

[75 FR 79166, Dec. 17, 2010]
Subpart BB—Silicon Carbide Production

§ 98.280 Definition of the source category.
Silicon carbide production includes any process that produces silicon carbide for abrasive purposes.

§ 98.281 Reporting threshold.
You must report GHG emissions under this subpart if your facility contains a silicon carbide production process and the facility meets the requirements of either § 98.2(a)(1) or (a)(2).

§ 98.282 GHGs to report.
You must report:
(a) CO2 and CH4 process emissions from all silicon carbide process units or furnaces combined.
(b) CO2, CH4, and N2O emissions from each stationary combustion unit. You must report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources).

§ 98.283 Calculating GHG emissions.
You must calculate and report the annual process CO2 emissions from each silicon carbide process unit or production furnace using the procedures in either paragraph (a) or (b) of this section. You must determine CH4 process emissions in accordance with the procedures specified in paragraph (d) of this section.

(a) Calculate and report under this subpart the process CO2 emissions by operating and maintaining CEMS according to the Tier 4 Calculation Methodology specified in § 98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).
(b) Calculate and report under this subpart the process CO2 emissions using the procedures in paragraphs (b)(1) and (b)(2) of this section.

(1) Use Equation BB–1 of this section to calculate the facility-specific emissions factor for determining CO2 emissions. The carbon content must be measured monthly and used to calculate a monthly CO2 emissions factor:

\[
EF_{CO2,n} = 0.65 \times CCF_n \times \frac{44}{12} \quad \text{(Eq. BB-1)}
\]

Where:
- \( EF_{CO2,n} \) = CO2 emissions factor in month n (metric tons CO2/metric ton of petroleum coke consumed).
- 0.65 = Adjustment factor for the amount of carbon in silicon carbide product (assuming 35 percent of carbon input is in the carbide product).
- \( CCF_n \) = Carbon content factor for petroleum coke consumed in month n from the supplier or as measured by the applicable method incorporated by reference in § 98.7 according to § 98.284(c) (percent by weight expressed as a decimal fraction).
- 44/12 = Ratio of molecular weights, CO2 to carbon.

(2) Use Equation BB–2 of this section to calculate annual CO2 process emissions from all silicon carbide production:

\[
CO_2 = \sum_{n=1}^{12} [T_n \times EF_{CO2,n}] \times \frac{2000}{2205} \quad \text{(Eq. BB-2)}
\]

Where:
- \( CO_2 \) = Annual CO2 emissions from silicon carbide production facility (metric tons CO2).
- \( T_n \) = Petroleum coke consumption in month n (tons).
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EF$_{CO_2,n}$ = CO$_2$ emissions factor from month n (calculated in Equation BB–1 of this section).

2000/2205 = Conversion factor to convert tons to metric tons.

n = Number of month.

(c) If GHG emissions from a silicon carbide production furnace or process unit are vented through the same stack as any combustion unit or process equipment that reports CO$_2$ emissions using a CEMS that complies with the Tier 4 Calculation Methodology in subpart C of this part (General Stationary Fuel Combustion Sources), then the calculation methodology in paragraph (b) of this section shall not be used to calculate process emissions. The owner or operator shall report under this subpart the combined stack emissions according to the Tier 4 Calculation Methodology in § 98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part.

(d) You must calculate annual process CH$_4$ emissions from all silicon carbide production combined using Equation BB–3 of this section:

\[
CH_4 = \sum_{n=1}^{12} \left[ T_n \times 10.2 \right] \times \frac{2000}{2205} \times 0.001 \tag{Eq. BB-3}
\]

Where:

- CH$_4$ = Annual CH$_4$ emissions from silicon carbide production facility (metric tons CH$_4$).
- $T_n$ = Petroleum coke consumption in month n (tons).
- 10.2 = CH$_4$ emissions factor (kg CH$_4$/metric ton coke).
- 2000/2205 = Conversion factor to convert tons to metric tons.
- 0.001 = Conversion factor from kilograms to metric tons.
- n = Number of month.

§ 98.284 Monitoring and QA/QC requirements.

(a) You must measure your consumption of petroleum coke using plant instruments used for accounting purposes including direct measurement weighing the petroleum coke fed into your process (by belt scales or a similar device) or through the use of purchase records.

(b) You must document the procedures used to ensure the accuracy of monthly petroleum coke consumption measurements.

(c) For CO$_2$ process emissions, you must determine the monthly carbon content of the petroleum coke using reports from the supplier. Alternatively, facilities can measure monthly carbon contents of the petroleum coke using ASTM D3176–89 (Reapproved 2002) Standard Practice for Ultimate Analysis of Coal and Coke (incorporated by reference, see § 98.7) and ASTM D5373–08 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, see § 98.7).

(d) For quality assurance and quality control of the supplier data, you must conduct an annual measurement of the carbon content of the petroleum coke using ASTM D3176–89 and ASTM D5373–08 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, see § 98.7).

§ 98.285 Procedures for estimating missing data.

For the petroleum coke input procedure in § 98.283(b), a complete record of all measured parameters used in the GHG emissions calculations is required (e.g., carbon content values, etc.). Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter shall be used in the calculations as specified in the paragraphs (a) and (b) of this section. You must document and keep records of the procedures used for all such estimates.

(a) For each missing value of the monthly carbon content of petroleum coke, the substitute data value shall be the arithmetic average of the quality-
§ 98.286 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) or (b) of this section, as applicable for each silicon carbide production facility.

(a) If a CEMS is used to measure process CO₂ emissions, you must report under this subpart the relevant information required for the Tier 4 Calculation Methodology in §98.36 and the information listed in this paragraph (a):

1. Annual consumption of petroleum coke (tons).
2. Annual production of silicon carbide (tons).
3. Annual production capacity of silicon carbide (tons).

(b) If a CEMS is not used to measure process CO₂ emissions, you must report the information listed in this paragraph (b) for all furnaces combined:

1. Monthly consumption of petroleum coke (tons).
2. Annual production of silicon carbide (tons).
3. Annual production capacity of silicon carbide (tons).
4. Carbon content factor of petroleum coke from the supplier or as measured by the applicable method in §98.284(c) for each month (percent by weight expressed as a decimal fraction).
5. Whether carbon content of the petroleum coke is based on reports from the supplier or through self measurement using applicable ASTM standard method.
6. CO₂ emissions factor calculated for each month (metric tons CO₂/metric ton of petroleum coke consumed).
7. Sampling analysis results for carbon content of consumed petroleum coke as determined for QA/QC of supplier data under §98.284(d) (percent by weight expressed as a decimal fraction).
8. Number of times in the reporting year that missing data procedures were followed to measure the carbon contents of petroleum coke (number of months) and petroleum coke consumption (number of months).

§ 98.287 Records that must be retained.

In addition to the records required by §98.3(g), you must retain the records specified in paragraphs (a) and (b) of this section for each silicon carbide production facility.

(a) If a CEMS is used to measure CO₂ emissions, you must retain under this subpart the records required for the Tier 4 Calculation Methodology in §98.37 and the information listed in this paragraph (a):

1. Records of all petroleum coke purchases.
2. Annual operating hours.

(b) If a CEMS is not used to measure emissions, you must retain records for the information listed in this paragraph (b):

1. Records of all analyses and calculations conducted for reported data listed in §98.286(b).
2. Records of all petroleum coke purchases.
3. Annual operating hours.

§ 98.288 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart CC—Soda Ash Manufacturing

§ 98.290 Definition of the source category.

(a) A soda ash manufacturing facility is any facility with a manufacturing line that produces soda ash by one of the methods in paragraphs (a)(1) through (3) of this section:

1. Calcining trona.
(2) Calcining sodium sesquicarbonate.

(3) Using a liquid alkaline feedstock process that directly produces CO₂.

(b) In the context of the soda ash manufacturing sector, “calcining” means the thermal/chemical conversion of the bicarbonate fraction of the feedstock to sodium carbonate.

§ 98.291 Reporting threshold.
You must report GHG emissions under this subpart if your facility contains a soda ash manufacturing process and the facility meets the requirements of either §98.2(a)(1) or (a)(2).

§ 98.292 GHGs to report.
You must report:
(a) CO₂ process emissions from each soda ash manufacturing line combined.
(b) CO₂ combustion emissions from each soda ash manufacturing line.
(c) CH₄ and N₂O combustion emissions from each soda ash manufacturing line. You must calculate and report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.
(d) CO₂, CH₄, and N₂O emissions from each stationary combustion unit other than soda ash manufacturing lines. You must calculate and report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.

§ 98.293 Calculating GHG emissions.
You must calculate and report the annual process CO₂ emissions from each soda ash manufacturing line using the procedures specified in paragraph (a) or (b) of this section.

(a) For each soda ash manufacturing line that meets the conditions specified in §98.33(b)(4)(ii) or (b)(4)(iii), you must calculate and report under this subpart the combined process and combustion CO₂ emissions by operating and maintaining a CEMS to measure CO₂ emissions according to the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(b) For each soda ash manufacturing line that is not subject to the requirements in paragraph (a) of this section, calculate and report under this subpart the combined process and combustion CO₂ emissions by operating and maintaining a CEMS to measure CO₂ emissions according to the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(2) Use either Equation CC-1 or Equation CC-2 of this section to calculate annual CO₂ process emissions from each manufacturing line that calcines trona to produce soda ash:

\[ E_k = \sum_{n=1}^{12} \left[ \left( \frac{(IC_{T})_n \times (T_T)_n}{100} \right) \times \frac{2000}{2205} \times \frac{0.097}{1} \right] \]  

(Eq. CC-1)

\[ E_k = \sum_{n=1}^{12} \left[ \left( \frac{(IC_{sa})_n \times (T_{sa})_n}{100} \right) \times \frac{2000}{2205} \times \frac{0.138}{1} \right] \]  

(Eq. CC-2)

Where:

- \( E_k \) = Annual CO₂ process emissions from each manufacturing line, k (metric tons).
- \( (IC_{T})_n \) = Inorganic carbon content (percent by weight, expressed as a decimal fraction) in trona input, from the carbon analysis results for month n. This represents the ratio of trona to trona ore.
- \( (IC_{sa})_n \) = Inorganic carbon content (percent by weight, expressed as a decimal fraction)
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in soda ash output, from the carbon analysis results for month n. This represents the purity of the soda ash produced.

\( \text{Trona input in month n (tons).} \)

\( \text{Soda ash output in month n (tons).} \)

2000/2205 = Conversion factor to convert trona to metric tons.

0.097/1 = Ratio of ton of CO\(_2\) emitted for each ton of trona.

0.138/1 = Ratio of ton of CO\(_2\) emitted for each ton of soda ash produced.

(3) Site-specific emission factor method.

Use Equations CC–3, CC–4, and CC–5 of this section to determine annual CO\(_2\) process emissions from manufacturing lines that use the liquid alkaline feedstock process to produce soda ash. You must conduct an annual performance test and measure CO\(_2\) emissions and flow rates at all process vents from the mine water stripper/evaporator for each manufacturing line and calculate CO\(_2\) emissions as described in paragraphs (b)(3)(i) through (b)(3)(iv) of this section.

(i) During the performance test, you must measure the process vent flow from each process vent during the test and calculate the average rate for the test period in metric tons per hour.

(ii) Using the test data, you must calculate the hourly CO\(_2\) emission rate using Equation CC–3 of this section:

\[
ER_{CO2} = \left[\left(\frac{C_{CO2} \times 10000}{2.59 \times 10^{-9}} \times 44\right) \times (Q \times 60) \times 4.53 \times 10^{-4}\right] \quad \text{(Eq. CC-3)}
\]

Where:

\( ER_{CO2} \) = CO\(_2\) mass emission rate (metric tons/hour).

\( C_{CO2} \) = Hourly CO\(_2\) concentration (percent CO\(_2\)) as determined by §98.294(c).

10000 = Parts per million per percent

2.59 x 10\(^{-9}\) = Conversion factor (pounds-mole/dscf/ppm).

44 = Pounds per pound-mole of carbon dioxide.

Q = Stack gas volumetric flow rate per minute (dscfm).

60 = Minutes per hour

4.53 x 10\(^{-4}\) = Conversion factor (metric tons/pound)

(iii) Using the test data, you must calculate a CO\(_2\) emission factor for the process using Equation CC–4 of this section:

\[
EF_{CO2} = \frac{ER_{CO2}}{\left(V_t \times 4.53 \times 10^{-4}\right)} \quad \text{(Eq. CC-4)}
\]

Where:

\( EF_{CO2} \) = CO\(_2\) emission factor (metric tons CO\(_2\)/metric ton of process vent flow from mine water stripper/evaporator).

\( ER_{CO2} \) = CO\(_2\) mass emission rate (metric tons/hour).

\( V_t \) = Process vent flow rate from mine water stripper/evaporator during annual performance test (pounds/hour).

4.53 x 10\(^{-4}\) = Conversion factor (metric tons/pound)

(iv) You must calculate annual CO\(_2\) process emissions from each manufacturing line using Equation CC–5 of this section:

\[
E_k = EF_{CO2} \times (V_a \times 0.453) \times H \quad \text{(Eq. CC-5)}
\]

Where:

\( E_k \) = Annual CO\(_2\) process emissions for each manufacturing line, k (metric tons).

\( EF_{CO2} \) = CO\(_2\) emission factor (metric tons CO\(_2\)/metric ton of process vent flow from mine water stripper/evaporator).

\( V_a \) = Annual process vent flow rate from mine water stripper/evaporator (thousand pounds/hour).

H = Annual operating hours for the each manufacturing line.

0.453 = Conversion factor (metric tons/thousand pounds).

(4) Calculate and report under subpart C of this part (General Stationary Fuel Combustion Sources) the combustion CO\(_2\), CH\(_4\), and N\(_2\)O emissions in the soda ash manufacturing line according
Section 98.293 provides three different procedures for emission calculations. The appropriate paragraphs (a) through (c) of this section should be used for the procedure chosen.

(a) If you determine your emissions using §98.293(b)(2) (Equation CC–1 of this subpart) you must:

1. Determine the monthly inorganic carbon content of the trona from a weekly composite analysis for each soda ash manufacturing line, using a modified version of ASTM E359–00 (Reapproved 2005)1, Standard Test Methods for Analysis of Soda Ash (Sodium Carbonate) (incorporated by reference, see §98.7). ASTM E359–00(Reapproved 2005)1 is designed to measure the total alkalinity in soda ash not in trona. The modified method referred to above adjusts the regular ASTM method to express the results in terms of trona. Although ASTM E359–00 (Reapproved 2005)1 uses manual titration, suitable autotitrators may also be used for this determination.

2. Measure the mass of trona input produced by each soda ash manufacturing line on a monthly basis using belt scales or methods used for accounting purposes.

3. Document the procedures used to ensure the accuracy of the monthly measurements of trona consumed.

(b) If you calculate CO₂ process emissions based on soda ash production (§98.293(b)(2) Equation CC–2 of this subpart), you must:

1. Determine the inorganic carbon content of the soda ash (i.e., soda ash purity) using ASTM E359–00 (Reapproved 2005)1 Standard Test Methods for Analysis of Soda Ash (Sodium Carbonate) (incorporated by reference, see §98.7). Although ASTM E359–00 (Reapproved 2005)1 uses manual titration, suitable autotitrators may also be used for this determination.

2. Measure the mass of soda ash produced by each soda ash manufacturing line on a monthly basis using belt scales by weighing the soda ash at the truck or rail loadout points of your facility, or methods used for accounting purposes.

3. Document the procedures used to ensure the accuracy of the monthly measurements of soda ash produced.

(c) If you calculate CO₂ emissions using the site-specific emission factor method in §98.293(b)(3), you must:

1. Conduct an annual performance test that is based on representative performance (i.e., performance based on normal operating conditions) of the affected process.

2. Sample the stack gas and conduct three emissions test runs of 1 hour each.

3. Conduct the stack test using EPA Method 3A at 40 CFR part 60, appendix A–2 to measure the CO₂ concentration, Method 2, 2A, 2C, 2D, or 2F at 40 CFR part 60, appendix A–1 or Method 26 at 40 CFR part 60, appendix A–2 to determine the stack gas volumetric flow rate. All QA/QC procedures specified in the reference test methods and any associated performance specifications apply. For each test, the facility must prepare an emission factor determination report that must include the items in paragraphs (c)(3)(i) through (c)(3)(iii) of this section.

(i) Analysis of samples, determination of emissions, and raw data.

(ii) All information and data used to derive the emissions factor(s).

(iii) You must determine the average process vent flow rate from the mine water stripper/evaporator during each test and document how it was determined.

4. You must also determine the annual vent flow rate from the mine water stripper/evaporator from monthly information using the same plant instruments or procedures used for accounting purposes (i.e., volumetric flow meter).

required parameter is unavailable, a substitute data value for the missing parameter shall be used in the calculations as specified in the paragraphs (a) through (d) of this section. You must document and keep records of the procedures used for all such missing value estimates.

(a) For each missing value of the weekly composite of inorganic carbon content of either soda ash or trona, the substitute data value shall be the arithmetic average of the quality-assured values of inorganic carbon contents from the week immediately preceding and the week immediately following the missing data incident. If no quality-assured data on inorganic carbon contents are available prior to the missing data incident, the substitute data value shall be the first quality-assured value for carbon contents obtained after the missing data period.

(b) For each missing value of either the monthly soda ash production or the trona consumption, the substitute data value shall be the best available estimate(s) of the parameter(s), based on all available process data or data used for accounting purposes.

(c) For each missing value collected during the performance test (hourly CO₂ concentration, stack gas volumetric flow rate, or average process vent flow from mine water stripper/evaporator during performance test), you must repeat the annual performance test following the calculation and monitoring and QA/QC requirements under §§ 98.293(b)(3) and 98.294(c).

(d) For each missing value of the monthly process vent flow rate from mine water stripper/evaporator, the substitute data value shall be the best available estimate(s) of the parameter(s), based on all available process data or the lesser of the maximum capacity of the system or the maximum rate the meter can measure.

§ 98.296 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) or (b) of this section, as appropriate for each soda ash manufacturing facility.

(a) If a CEMS is used to measure CO₂ emissions, then you must report under this subpart the relevant information required under §98.36 and the following information in this paragraph (a):

(1) Annual consumption of trona or liquid alkaline feedstock for each manufacturing line (tons).
(2) Annual production of soda ash for each manufacturing line (tons).
(3) Annual production capacity of soda ash for each manufacturing line (tons).
(4) Identification number of each manufacturing line.
(5) Monthly consumption of trona or liquid alkaline feedstock for each manufacturing line (tons).
(6) Monthly production of soda ash for each manufacturing line (tons).
(7) Inorganic carbon content factor of trona or soda ash (depending on use of Equations CC–1 or CC–2 of this subpart) as measured by the applicable method in §98.294(b) or (c) for each month (percent by weight expressed as a decimal fraction).
(8) Whether CO₂ emissions for each manufacturing line were calculated using a trona input method as described in Equation CC–1 of this subpart, a soda ash output method as described in Equation CC–2 of this subpart, or a site-specific emission factor method as described in Equations CC–3 through CC–5 of this subpart.
(9) Number of manufacturing lines located used to produce soda ash.
(10) If you produce soda ash using the liquid alkaline feedstock process and use the site-specific emission factor method (§98.293(b)(3)) to estimate emissions then you must report the following relevant information for each manufacturing line or stack:

(i) Stack gas volumetric flow rate during performance test (dscfm).
(ii) Hourly CO$_2$ concentration during performance test (percent CO$_2$).
(iii) CO$_2$ emission factor (metric tons CO$_2$/metric tons of process vent flow from mine water stripper/evaporator).
(iv) CO$_2$ mass emission rate during performance test (metric tons/hour).
(11) Number of times missing data procedures were used and for which parameter as specified in this paragraph (b)(11):
   (i) Trona or soda ash (number of months).
   (ii) Inorganic carbon contents of trona or soda ash (weeks).
   (iii) Process vent flow rate from mine water stripper/evaporator (number of months).

§ 98.297 Records that must be retained.

In addition to the records required by §98.3(g), you must retain the records specified in paragraphs (a) and (b) of this section for each soda ash manufacturing line.

(a) If a CEMS is used to measure CO$_2$ emissions, then you must retain under this subpart the records required for the Tier 4 Calculation Methodology specified in subpart C of this part and the information listed in this paragraph (a):
   (1) Monthly production of soda ash (tons)
   (2) Monthly consumption of trona or liquid alkaline feedstock (tons)
   (3) Annual operating hours (hours).
(b) If a CEMS is not used to measure emissions, then you must retain records for the information listed in this paragraph (b):
   (1) Records of all analyses and calculations conducted for determining all reported data as listed in §98.296(b).
   (2) If using Equation CC–1 or CC–2 of this subpart, weekly inorganic carbon content factor of trona or soda ash, depending on method chosen, as measured by the applicable method in §98.294(b) (percent by weight expressed as a decimal fraction).
   (3) Annual operating hours for each manufacturing line used to produce soda ash (hours).
   (4) You must document the procedures used to ensure the accuracy of the monthly trona consumption or soda ash production measurements including, but not limited to, calibration of weighing equipment and other measurement devices. The estimated accuracy of measurements made with these devices must also be recorded, and the technical basis for these estimates must be provided.
   (5) If you produce soda ash using the liquid alkaline feedstock process and use the site-specific emission factor method to estimate emissions (§98.293(b)(3)) then you must also retain the following relevant information:
      (i) Records of performance test results.
      (ii) You must document the procedures used to ensure the accuracy of the annual average vent flow measurements including, but not limited to, calibration of flow rate meters and other measurement devices. The estimated accuracy of measurements made with these devices must also be recorded, and the technical basis for these estimates must be provided.

§ 98.298 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart DD—Electrical Transmission and Distribution Equipment Use

SOURCE: 75 FR 74855, Dec. 1, 2010, unless otherwise noted.

§ 98.300 Definition of the source category.

(a) The electrical transmission and distribution equipment use source category consists of all electric transmission and distribution equipment and servicing inventory insulated with or containing sulfur hexafluoride (SF$_6$) or perfluorocarbons (PFCs) used within an electric power system. Electric transmission and distribution equipment and servicing inventory includes, but is not limited to:
   (1) Gas-insulated substations.
   (2) Circuit breakers.
   (3) Switchgear, including closed-pressure and hermetically sealed-pressure switchgear and gas-insulated lines containing SF$_6$ or PFCs.
§ 98.301 Reporting threshold.

(a) You must report GHG emissions from an electric power system if the total nameplate capacity of SF₆ and PFC containing equipment (excluding hermetically sealed-pressure equipment) located within the facility, when added to the total nameplate capacity of SF₆ and PFC containing equipment (excluding hermetically sealed-pressure equipment) that is not located within the facility but is under common ownership or control, exceeds 17,820 pounds and the facility meets the requirements of §98.2(a)(1).

(b) A facility other than an electric power system that is subject to this part because of emissions from any other source category listed in Table A–3 or A–4 in subpart A of this part is not required to report emissions under subpart DD of this part unless the total nameplate capacity of SF₆ and PFC containing equipment located within that facility exceeds 17,820 pounds.

§ 98.302 GHGs to report.

You must report total SF₆ and PFC emissions from your facility (including emissions from fugitive equipment leaks, installation, servicing, equipment decommissioning and disposal, and from storage cylinders) resulting from the transmission and distribution servicing inventory and equipment listed in §98.300(a). For acquisitions of equipment containing or insulated with SF₆ or PFCs, you must report emissions from the equipment after the title to the equipment is transferred to the electric power transmission or distribution entity.

§ 98.303 Calculating GHG emissions.

(a) Calculate the annual SF₆ and PFC emissions using the mass-balance approach in Equation DD–1 of this section:

\[
\text{User Emissions} = (\text{Decrease in SF}_6 \text{ Inventory}) + (\text{Acquisitions of SF}_6) - (\text{Disbursements of SF}_6) - (\text{Net Increase in Total Nameplate Capacity of Equipment Operated})
\]

(\text{Eq. DD–1})

Where:

- Decrease in SF₆ Inventory = (pounds of SF₆ stored in containers, but not in energized equipment, at the beginning of the year) − (pounds of SF₆ stored in containers, but not in energized equipment, at the end of the year).
- Acquisitions of SF₆ = (pounds of SF₆ purchased from chemical producers or distributors in bulk) + (pounds of SF₆ purchased from equipment manufacturers or distributors with or inside equipment, including hermetically sealed-pressure switchgear) + (pounds of SF₆ returned to facility after off-site recycling).
- Disbursements of SF₆ = (pounds of SF₆ in bulk and contained in equipment that is sold to other entities) + (pounds of SF₆ returned to suppliers) + (pounds of SF₆ sent off site for recycling) + (pounds of SF₆ sent off-site for destruction).
- Net Increase in Total Nameplate Capacity of Equipment Operated = (The Nameplate Capacity of new equipment in pounds, including hermetically sealed-pressure switchgear) − (Nameplate Capacity of retiring equipment in pounds, including hermetically sealed-pressure switchgear). (Note that Nameplate Capacity refers to the full and proper charge of equipment rather than to the actual charge, which may reflect leakage).

(b) Use Equation DD–1 of this section to estimate emissions of PFCs from power transformers, substituting the relevant PFC(s) for SF₆ in the equation.

§ 98.304 Monitoring and QA/QC requirements.

(a) For calendar year 2011 monitoring, you may follow the provisions of §98.3(d)(1) through (d)(2) for best available monitoring methods rather than follow the monitoring requirements of this section. For purposes of this subpart, any reference in
§ 98.306 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the following information for each electric power system, by chemical:

(a) Nameplate capacity of equipment (pounds) containing SF₆ and nameplate capacity of equipment (pounds) containing each PFC:

1. Existing at the beginning of the year (excluding hermetically sealed-pressure switchgear).
2. New during the year (all SF₆-insulated equipment, including hermetically sealed-pressure switchgear).
3. Retired during the year (all SF₆-insulated equipment, including hermetically sealed-pressure switchgear).

(b) Transmission miles (length of lines carrying voltages above 35 kilovolt).

(c) Distribution miles (length of lines carrying voltages at or below 35 kilovolt).

(d) Pounds of SF₆ and PFC stored in containers, but not in energized equipment, at the beginning of the year.

(e) Pounds of SF₆ and PFC stored in containers, but not in energized equipment, at the end of the year.

(f) Pounds of SF₆ and PFC purchased in bulk from chemical producers or distributors.

§ 98.305 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations is required. Replace missing data, if needed, based on data from equipment with a similar nameplate capacity for SF₆ and PFC, and from similar equipment repair, replacement, and maintenance operations.
§ 98.307 Records that must be retained.

In addition to the information required by §98.3(g), you must retain records of the information reported and listed in §98.306.

§ 98.308 Definitions.

Except as specified in this section, all terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Facility, with respect to an electric power system, means the electric power system as defined in this paragraph. An electric power system is comprised of all electric transmission and distribution equipment insulated with or containing SF₆ or PFCs that is linked through electric power transmission or distribution lines and functions as an integrated unit, that is owned, serviced, or maintained by a single electric power transmission or distribution entity (or multiple entities with a common owner), and that is located between: (1) The point(s) at which electric energy is obtained from an electricity generating unit or a different electric power transmission or distribution entity that does not have a common owner, and (2) the point(s) at which any customer or another electric power transmission or distribution entity that does not have a common owner receives the electric energy. The facility also includes servicing inventory for such equipment that contains SF₆ or PFCs.

Electric power transmission or distribution entity means any entity that transmits, distributes, or supplies electricity to a consumer or other user, including any company, electric cooperative, public electric supply corporation, a similar Federal department (including the Bureau of Reclamation or the Corps of Engineers), a municipally owned electric department offering service to the public, an electric public utility district, or a jointly owned electric supply project.

Operator, for the purposes of this subpart, means any person who operates or supervises a facility, excluding a person whose sole responsibility is to ensure reliability, balance load or otherwise address electricity flow.

Subpart EE—Titanium Dioxide Production

§ 98.310 Definition of the source category.

The titanium dioxide production source category consists of facilities that use the chloride process to produce titanium dioxide.

§ 98.311 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a titanium dioxide production process and the facility meets the requirements of either §98.2(a)(1) or (a)(2).

§ 98.312 GHGs to report.

(a) You must report CO₂ process emissions from each chloride process line as required in this subpart.

(b) You must report CO₂, CH₄, and N₂O emissions from each stationary combustion unit under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.

§ 98.313 Calculating GHG emissions.

You must calculate and report the annual process CO₂ emissions for each chloride process line using the procedures in either paragraph (a) or (b) of this section.

(a) Calculate and report under this subpart the process CO₂ emissions by operating and maintaining a CEMS according to the Tier 4 Calculation Methodology specified in §98.33(a)(4) and all associated requirements for Tier 4 in...
subpart C of this part (General Stationary Fuel Combustion Sources).

(b) Calculate and report under this subpart the annual process CO$_2$ emissions for each chloride process line by determining the mass of calcined petroleum coke consumed in each line as specified in paragraphs (b)(1) through (b)(3) of this section. Use Equation EE–1 of this section to calculate annual combined process CO$_2$ emissions from all process lines and use Equation EE–2 of this section to calculate annual process CO$_2$ emissions for each process line. If your facility generates carbon-containing waste, use Equation EE–3 of this section to estimate the annual quantity of carbon-containing waste generated and its carbon contents according to §98.314(e) and (f):

(1) You must calculate the annual CO$_2$ process emissions from all process lines at the facility using Equation EE–1 of this section:

\[
CO_2 = \sum_{p=1}^{m} E_p \quad \text{(Eq. EE–1)}
\]

Where:

- CO$_2$ = Annual CO$_2$ emissions from titanium dioxide production facility (metric tons/year).
- $E_p$ = Annual CO$_2$ emissions from chloride process line $p$ (metric tons, determined using Equation EE-2 of this section).
- $p$ = Process line.
- $m$ = Number of separate chloride process lines located at the facility.

(2) You must calculate the annual CO$_2$ process emissions from each process lines at the facility using Equation EE–2 of this section:

\[
E_p = \frac{12}{12} \frac{44}{12} C_{p,n} \frac{2000}{2205} CCF_n \quad \text{(Eq. EE–2)}
\]

Where:

- $E_p$ = Annual CO$_2$ mass emissions from chloride process line $p$ (metric tons).
- $C_{p,n}$ = Calcined petroleum coke consumption for process line $p$ in month $n$ (tons).
- 44/12 = Ratio of molecular weights, CO$_2$ to carbon.
- 2000/2205 = Conversion of tons to metric tons.
- $CCF_n$ = Carbon content factor for petroleum coke consumed in month $n$ from the supplier or as measured by the applicable method incorporated by reference in §98.7 according to §98.314(c) (percent by weight expressed as a decimal fraction).
- $n$ = Number of month.

(3) If facility generates carbon-containing waste, you must calculate the total annual quantity of carbon-containing waste produced from all process lines using Equation EE–3 of this section and its carbon contents according to §98.314(e) and (f):

\[
TWC = \sum_{p=1}^{m} \sum_{n=1}^{12} WC_{p,n} \quad \text{(Eq. EE–3)}
\]

Where:

- TWC = Annual production of carbon-containing waste from titanium dioxide production facility (tons).
- $WC_{p,n}$ = Production of carbon-containing waste in month $n$ from chloride process line $p$ (tons).
- $p$ = Process line.
- $m$ = Total number of process lines.
- $n$ = Number of month.

(c) If GHG emissions from a chloride process line are vented through the same stack as any combustion unit or process equipment that reports CO$_2$ emissions using a CEMS that complies with the Tier 4 Calculation Methodology in subpart C of this part (General Stationary Fuel Combustion Sources), then the calculation methodology in paragraph (b) of this section shall not be used to calculate process CO$_2$ emissions. The owner or operator shall report under this subpart the combined stack emissions according to the Tier 4 Calculation Methodology in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part.
§ 98.314 Monitoring and QA/QC requirements.

(a) You must measure your consumption of calcined petroleum coke using plant instruments used for accounting purposes including direct measurement weighing the petroleum coke fed into your process (by belt scales or a similar device) or through the use of purchase records.

(b) You must document the procedures used to ensure the accuracy of monthly calcined petroleum coke consumption measurements.

(c) You must determine the carbon content of the calcined petroleum coke each month based on reports from the supplier. Alternatively, facilities can measure monthly carbon contents of the petroleum coke using ASTM D3176–89 (Reapproved 2002) Standard Practice for Ultimate Analysis of Coal and Coke (incorporated by reference, see §98.7) and ASTM D5373–08 Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Laboratory Samples of Coal (incorporated by reference, see §98.7).

(d) For quality assurance and quality control of the supplier data, you must conduct an annual measurement of the carbon content from a representative sample of the petroleum coke consumed using ASTM D3176–89 and ASTM D5373–08.

(e) You must determine the quantity of carbon-containing waste generated from each titanium dioxide production line on a monthly basis using plant instruments used for accounting purposes including direct measurement weighing the carbon-containing waste not used during the process (by belt scales or a similar device) or through the use of sales records.

(f) You must determine the carbon contents of the carbon-containing waste from each titanium production line on an annual basis by collecting and analyzing a representative sample of the material using ASTM D3176–89 and ASTM D5373–08.


§ 98.315 Procedures for estimating missing data.

For the petroleum coke input procedure in §98.313(b), a complete record of all measured parameters used in the GHG emissions calculations is required (e.g., carbon content values, etc.). Therefore, whenever the monitoring and quality assurance procedures in §98.315 cannot be followed, a substitute data value for the missing parameter shall be used in the calculations as specified in the paragraphs (a) through (c) of this section. You must document and keep records of the procedures used for all such estimates.

(a) For each missing value of the monthly carbon content of calcined petroleum coke the substitute data value shall be the arithmetic average of the quality-assured values of carbon contents for the month immediately preceding and the month immediately following the missing data incident. If no quality-assured data on carbon contents are available prior to the missing data incident, the substitute data value shall be the first quality-assured value for carbon contents obtained after the missing data period.

(b) For each missing value of the monthly calcined petroleum coke consumption and/or carbon-containing waste, the substitute data value shall be the best available estimate of the monthly petroleum coke consumption based on all available process data or information used for accounting purposes (such as purchase records).

(c) For each missing value of the carbon content of carbon-containing waste, you must conduct a new analysis following the procedures in §98.314(f).

§ 98.316 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the information specified in paragraphs (a) or (b) of this section, as applicable for each titanium dioxide production line.

(a) If a CEMS is used to measure CO₂ emissions, then you must report the relevant information required under §98.36(e)(2)(vi) for the Tier 4 Calculation Methodology and the following information in this paragraph (a).

(1) Identification number of each process line.

(2) Annual consumption of calcined petroleum coke (tons).
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§ 98.317 Records that must be retained.

In addition to the records required by §98.3(g), you must retain the records specified in paragraphs (a) and (b) of this section for each titanium dioxide production facility.

(a) If a CEMS is used to measure CO₂ emissions, then you must retain under this subpart required for the Tier 4 Calculation Methodology in §98.37 and the information listed in this paragraph (a):

1. Records of all calcined petroleum coke purchases.
2. Annual operating hours for each titanium dioxide process line.
4. You must document the procedures used to ensure the accuracy of the monthly petroleum coke consumption and quantity of carbon-containing waste measurement including, but not limited to, calibration of weighing equipment and other measurement devices. The estimated accuracy of measurements made with these devices must also be recorded, and the technical basis for these estimates must be provided.
5. Monthly production of carbon-containing waste (tons).
6. Annual operating hours for each titanium dioxide process line (hours).

(b) If a CEMS is not used to measure CO₂ emissions, then you must retain records for the information listed in this paragraph:

1. Records of all calcined petroleum coke purchases (tons).
2. Records of all analyses and calculations conducted for all reported data as listed in §98.316(b).
3. Sampling analysis results for carbon content of consumed calcined petroleum coke (percent by weight expressed as a decimal fraction).
4. Sampling analysis results for the carbon content of carbon containing waste (percent by weight expressed as a decimal fraction), if applicable.
5. Monthly production of carbon-containing waste (tons).

7. Annual operating hours for each titanium dioxide process line (hours).
§ 98.318 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart FF—Underground Coal Mines

SOURCE: 75 FR 39763, July 12, 2010, unless otherwise noted.

§ 98.320 Definition of the source category.

(a) This source category consists of active underground coal mines, and any underground mines under development that have operational pre-mining degasification systems. An underground coal mine is a mine at which coal is produced by tunneling into the earth to the coalbed, which is then mined with underground mining equipment such as cutting machines and continuous, longwall, and shortwall mining machines, and transported to the surface. Underground coal mines are categorized as active if any one of the following five conditions apply:

(1) Mine development is underway.
(2) Coal has been produced within the last 90 days.
(3) Mine personnel are present in the mine workings.
(4) Mine ventilation fans are operative.
(5) The mine is designated as an “intermittent” mine by the Mine Safety and Health Administration (MSHA).

(b) This source category includes the following:

(1) Each ventilation shaft, vent hole, or centralized point into which CH₄ from multiple shafts and/or vent holes are collected. This includes both those wells and shafts where gas is emitted and those where gas is sold, used onsite, or otherwise destroyed (including by flaring).
(2) Each degasification system well or shaft, including degasification systems deployed before, during, or after mining operations are conducted in a mine area. This includes both those wells and shafts where gas is emitted, and those where gas is sold, used onsite, or otherwise destroyed (including by flaring).

(c) This source category does not include abandoned or closed mines, surface coal mines, or post-coal mining activities (e.g., storage or transportation of coal).

§ 98.321 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains an active underground coal mine and the facility meets the requirements of § 98.2(a)(1).

§ 98.322 GHGs to report.

(a) You must report CH₄ liberated from ventilation and degasification systems.
(b) You must report CH₄ destruction from systems where gas is sold, used onsite, or otherwise destroyed (including by flaring).
(c) You must report net CH₄ emissions from ventilation and degasification systems.
(d) You must report under this subpart the CO₂ emissions from coal mine gas CH₄ destruction occurring at the facility, where the gas is not a fuel input for energy generation or use (e.g., flaring).
(e) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the CO₂, CH₄, and N₂O emissions from each stationary fuel combustion unit by following the requirements of subpart C. Report emissions from both the combustion of collected coal mine CH₄ and any other fuels.
(f) An underground coal mine that is subject to this part because emissions from source categories described in subparts C through PP of this part is not required to report emissions under subpart FF of this part unless the coal mine is subject to quarterly or more frequent sampling of ventilation systems by MSHA.

§ 98.323 Calculating GHG emissions.

(a) For each ventilation shaft, vent hole, or centralized point into which CH₄ from multiple shafts and/or vent holes are collected, you must calculate the quarterly CH₄ liberated from the ventilation system using Equation FF–1 of this section. You must measure CH₄ content, flow rate, temperature, pressure, and moisture content of the gas using the procedures outlined in § 98.324.
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\[ CH_{4V} = n \left( V \cdot MCF \cdot \frac{C}{100\%} \cdot 0.0423 \cdot \frac{520^\circ R \cdot P}{1 \text{ atm}} \cdot \frac{1,440}{1,000} \right) \]  \hspace{1cm} (Eq. FF-1)

Where:

\( CH_{4V} \) = Quarterly \( CH_4 \) liberated from a ventilation monitoring point (metric tons \( CH_4 \)).

\( V \) = Daily volumetric flow rate for the quarter (scfm) based on sampling or a flow rate meter. If a flow rate meter is used and the meter automatically corrects for temperature and pressure, replace ‘\( 520^\circ R \times P \times 1\text{ atm} \)’ with ‘\( 1 \)’.

\( MCF \) = Moisture correction factor for the measurement period, volumetric basis.

\( C \) = Daily \( CH_4 \) concentration of ventilation gas for the quarter (% wet basis).

\( n \) = The number of days in the quarter where active ventilation of mining operations is taking place at the monitoring point.

\( 0.0423 \) = Density of \( CH_4 \) at \( 520^\circ R \) (60 °F) and 1 atm (lb/scf).

\( 520^\circ R \) = 520 degrees Rankine.

\( T \) = Temperature at which flow is measured (°R) for the quarter.

\( P \) = Pressure at which flow is measured (atm) for the quarter.

\( 1,440 \) = Conversion factor (min/day).

\( 0.454 \) = Conversion factor (metric ton/lb).

(1) Consistent with MSHA inspections, the quarterly periods are:

(i) January 1–March 31.

(ii) April 1–June 30.

(iii) July 1–September 30.

(iv) October 1–December 31.

(2) Daily values of \( V \), \( MCF \), \( C \), \( T \), and \( P \) must be based on measurements taken at least once each quarter with no fewer than 6 weeks between measurements. If measurements are taken more frequently than once per quarter, then use the average value for all measurements taken. If continuous measurements are taken, then use the average value over the time period of continuous monitoring.

(3) If a facility has more than one monitoring point, the facility must calculate total \( CH_4 \) liberated from ventilation systems (\( CH_{4\text{Total}} \)) as the sum of the \( CH_4 \) from all ventilation monitoring points in the mine, as follows:

\[ CH_{4\text{Total}} = \sum_{i=1}^{m} \left( CH_{4V} \right) \]  \hspace{1cm} (Eq. FF-2)

Where:

\( CH_{4\text{Total}} \) = Total quarterly \( CH_4 \) liberated from ventilation systems (metric tons \( CH_4 \)).

\( CH_{4V} \) = Quarterly \( CH_4 \) liberated from each ventilation monitoring point (metric tons \( CH_4 \)).

\( m \) = Number of ventilation monitoring points.

(b) For each monitoring point in the degasification system (this could be at each degasification well and/or vent hole, or at more centralized points into which \( CH_4 \) from multiple wells and/or vent holes are collected), you must calculate the weekly \( CH_4 \) liberated from the mine using \( CH_4 \) measured weekly or more frequently (including by CEMS) according to 98.234(c), \( CH_4 \) content, flow rate, temperature, pressure, and moisture content, and Equation FF–3 of this section.

\[ CH_{4W} = \sum_{i=1}^{n} \left( V_i \cdot MCF_i \cdot \frac{C_i}{100\%} \cdot 0.0423 \cdot \frac{520^\circ R \cdot P_i}{1 \text{ atm}} \cdot \frac{1,440}{1,000} \right) \]  \hspace{1cm} (Eq. FF-3)

Where:

\( CH_{4W} \) = Weekly \( CH_4 \) liberated from at the monitoring point (metric tons \( CH_4 \)).

\( V_i \) = Daily measured total volumetric flow rate for the days in the week when the degasification system is in operation at that monitoring point, based on sampling.
or a flow rate meter (scfm). If a flow rate meter is used and the meter automatically corrects for temperature and pressure, replace "$520^\circ R/T \times P_i/1\text{ atm}"" with "1".

$MCF_i = \text{Moisture correction factor for the measurement period, volumetric basis.}$

= 1 when $V_i$ and $C_i$ are measured on a dry basis or if both are measured on a wet basis.

= $1-(fH_2O)_i$ when $V_i$ is measured on a wet basis and $C_i$ is measured on a dry basis.

= $1/\left[1-(fH_2O)_i\right]$ when $V_i$ is measured on a dry basis and $C_i$ is measured on a wet basis.

$(fH_2O) = \text{Moisture content of the CH}_4\text{ emitted during the measurement period, volumetric basis (cubic feet water per cubic feet emitted gas)}$

$C_i = \text{Daily CH}_4\text{ concentration of gas for the days in the week when the degasification system is in operation at that monitoring point (\% wet basis)}.$

$n = \text{The number of days in the week that the system is operational at that measurement point.}$

$0.0423 = \text{Density of CH}_4\text{ at } 520^\circ R (60^\circ F)\text{ and } 1\text{ atm (lb/scf).}$

$520^\circ R = 520\text{ degrees Rankine.}$

$T_i = \text{Daily temperature at which flow is measured (°R).}$

$P_i = \text{Daily pressure at which flow is measured (atm).}$

$1,440 = \text{Conversion factor (minutes/day).}$

$0.454/1,000 = \text{Conversion factor (metric ton/lb).}$

(1) Daily values for $V$, $MCF$, $C$, $T$, and $P$ must be based on measurements taken at least once each calendar with at least 3 days between measurements. If measurements are taken more frequently than once per week, then use the average value for all measurements taken that week. If continuous measurements are taken, then use the average values over the time period of continuous monitoring when the continuous monitoring equipment is properly functioning.

(2) Quarterly total CH$_4$ liberated from degasification systems for the mine should be determined as the sum of CH$_4$ liberated determined at each of the monitoring points in the mine, summed over the number of weeks in the quarter, as follows:

$$\text{CH}_4\text{Total} = \sum_{i=1}^{m} \sum_{j=1}^{w} \left( \text{CH}_4\text{Total} \right)_{i,j}$$

(Eq. FF-4)

Where:

$\text{CH}_4\text{Total} = \text{Quarterly CH}_4\text{ liberated from all degasification monitoring points (metric tons CH}_4).$

$\text{CH}_4 = \text{Weekly CH}_4\text{ liberated from a degasification monitoring point (metric tons CH}_4).$

$m = \text{Number of monitoring points.}$

$w = \text{Number of weeks in the quarter during which the degasification system is operated.}$

(c) If gas from degasification system wells or ventilation shafts is sold, used onsite, or otherwise destroyed (including by flaring), you must calculate the quarterly CH$_4$ destroyed for each destruction device and each point of off-site transport to a destruction device, using Equation FF–5 of this section. You must measure CH$_4$ content and flow rate according to the provisions in §98.324.

$$\text{CH}_4\text{Destroyed} = \text{CH}_4 \times \text{DE}$$

(Eq. FF-5)

Where:

$\text{CH}_4\text{Destroyed} = \text{Quarterly CH}_4\text{ destroyed (metric tons).}$

$\text{CH}_4 = \text{Quarterly CH}_4\text{ routed to the destruction device or offsite transfer point (metric tons).}$

$\text{DE} = \text{Destruction efficiency (lesser of manufacturer's specified destruction efficiency and 0.99).}$

If the gas is transported off-site for destruction, use $\text{DE} = 1$.

(1) Calculate total CH$_4$ destroyed as the sum of the methane destroyed at all destruction devices (onsite and offsite), using Equation FF–6 of this section.

$$\text{CH}_4\text{Destroyed Total} = \sum_{i=1}^{d} \left( \text{CH}_4\text{Destroyed} \right)_{i}$$

(Eq. FF-6)
§ 98.324 Monitoring and QA/QC requirements.

(a) For calendar year 2011 monitoring, the facility may submit a request to the Administrator to use one or more best available monitoring methods as listed in §98.3(d)(1)(i) through (iv). The request must be submitted no later than October 12, 2010 and must contain the information in §98.3(d)(2)(i). To obtain approval, the request must demonstrate to the Administrator's satisfaction that it is not reasonably feasible to acquire, install, and operate a required piece of monitoring equipment by January 1, 2011. The use of best available monitoring methods will not be approved beyond December 31, 2011.

(b) For CH₄ liberated from ventilation systems, determine whether CH₄ will be monitored from each ventilation well and shaft, from a centralized monitoring point, or from a combination of the two options. Operators are allowed flexibility for aggregating emissions from more than one ventilation well or shaft, as long as emissions from all are addressed, and the methodology for calculating total emissions documented. Monitor by one of the following options:

1. Collect quarterly or more frequent grab samples (with no fewer than 6 weeks between measurements) and make quarterly measurements of flow rate, temperature, and pressure. The sampling and measurements must be made at the same locations as MSHA inspection samples are taken, and should be taken when the mine is operating under normal conditions. You

\[ \text{CO}_2 = \text{CH}_4 \text{ Destroyed onsite} \times \frac{44}{16} \quad \text{(Eq. FF-8)} \]

Where:
- \( \text{CO}_2 \) = Total quarterly \( \text{CO}_2 \) emissions from \( \text{CH}_4 \) destruction (metric tons).
- \( \text{CH}_4 \text{ Destroyed onsite} \) = Quarterly sum of the \( \text{CH}_4 \) destroyed, calculated as the sum of \( \text{CH}_4 \) destroyed for each onsite, non-energy use, as calculated individually in Equation FF-5 of this section (metric tons).
- 44/16 = Ratio of molecular weights of \( \text{CO}_2 \) to \( \text{CH}_4 \).

\[ \text{CH}_4 \text{ emitted (net)} = \text{CH}_4 \text{VTot} + \text{CH}_4 \text{DTotal} - \text{CH}_4 \text{DestroyedTotal} \quad \text{(Eq. FF-7)} \]

Where:
- \( \text{CH}_4 \text{ emitted (net)} \) = Quarterly \( \text{CH}_4 \) emissions from the mine (metric tons).
- \( \text{CH}_4 \text{VTot} \) = Quarterly sum of the \( \text{CH}_4 \) liberated from all mine ventilation monitoring points (\( \text{CH}_4\text{V} \)), calculated using Equation FF-2 of this section (metric tons).
- \( \text{CH}_4\text{DTotal} \) = Quarterly sum of the \( \text{CH}_4 \) liberated from all mine degasification monitoring points (\( \text{CH}_4\text{D} \)), calculated using Equation FF-4 of this section (metric tons).
- \( \text{CH}_4 \text{DestroyedTotal} \) = Quarterly sum of the measured \( \text{CH}_4 \) destroyed from all mine ventilation and degasification systems, calculated using Equation FF-6 of this section (metric tons).

(c) [Reserved]

(d) You must calculate the quarterly measured net \( \text{CH}_4 \) emissions to the atmosphere using Equation FF-7 of this section.

(e) For the methane collected from degasification and/or ventilation systems that is destroyed on site and is not a fuel input for energy generation or use (those emissions are monitored and reported under Subpart C of this part), you must estimate the \( \text{CO}_2 \) emissions using Equation FF-8 of this section.

\[ \text{CO}_2 = \text{CH}_4 \text{ Destroyed onsite} \times \frac{44}{16} \quad \text{(Eq. FF-8)} \]
must follow MSHA sampling procedures as set forth in the MSHA Handbook entitled, General Coal Mine Inspection Procedures and Inspection Tracking System Handbook Number: PH-08-V-1, January 1, 2008 (incorporated by reference, see §98.7). You must record the date of sampling, airflow, temperature, and pressure measured, the hand-held methane and oxygen readings (percent), the bottle number of samples collected, and the location of the measurement or collection.

(2) Obtain results of the quarterly (or more frequent) testing performed by MSHA.

(3) Monitor emissions through the use of one or more continuous emission monitoring systems (CEMS). If operators use CEMS as the basis for emissions reporting, they must provide documentation on the process for using data obtained from their CEMS to estimate emissions from their mine ventilation systems.

(c) For CH₄ liberated at degasification systems, determine whether CH₄ will be monitored from each well or gob gas vent hole, from a centralized monitoring point, or from a combination of the two options. Operators are allowed flexibility for aggregating emissions from more than one well or gob gas vent hole, as long as emissions from all are addressed, and the methodology for calculating total emissions documented. Monitor both gas volume and methane concentration by one of the following two options:

(1) Monitor emissions through the use of one or more continuous emissions monitoring systems (CEMS).

(2) Collect weekly (once each calendar week, with at least three days between measurements) or more frequent samples, for all degasification wells and gob gas vent holes. Determine weekly or more frequent flow rates and methane composition from these degasification wells and gob gas vent holes. Methane composition should be determined either by submitting samples to a lab for analysis, or from the use of methanometers at the degasification well site. Follow the sampling protocols for sampling of methane emissions from ventilation shafts, as described in §98.324(b)(1).


(e) All fuel flow meters, gas composition monitors, and heating value monitors that are used to provide data for the GHG emissions calculations shall be calibrated prior to the first reporting year, using the applicable methods specified in paragraphs (e)(1) through (7) of this section. Alternatively, calibration procedures specified by the flow meter manufacturer may be used. Fuel flow meters, gas composition monitors, and heating value monitors shall be recalibrated either annually or at the minimum frequency specified by the manufacturer, whichever is more frequent. For fuel, flare, or sour gas flow meters, the operator shall operate, maintain, and calibrate the flow meter using any of the following test methods or follow the procedures specified by the flow meter manufacturer. Flow meters must meet the accuracy requirements in §98.3(i).


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§ 98.326 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the following information for each mine:
(a) Quarterly CH₄ liberated from each ventilation monitoring point (CH₄Vm), (metric tons CH₄).
(b) Weekly CH₄ liberated from each degasification system monitoring point (metric tons CH₄).
(c) Quarterly CH₄ destruction at each ventilation and degasification system destruction device or point of offsite transport (metric tons CH₄).
(d) Quarterly CH₄ emissions (net) from all ventilation and degasification systems (metric tons CH₄).
(e) Quarterly CO₂ emissions from onsite destruction of coal mine gas CH₄, where the gas is not a fuel input for energy generation or use (e.g., flaring) (metric tons CO₂).
(f) Quarterly volumetric flow rate for each ventilation monitoring point (scfm), date and location of each measurement, and method of measurement (quarterly sampling or continuous monitoring).
(g) Quarterly CEMS CH₄ concentration (%) used to calculate CH₄ liberated from degasification systems (average from daily data), or quarterly CH₄ concentration data based on results from weekly sampling data (C).
(j) Weekly volumetric flow used to calculate CH₄ destruction for each destruction device and each point of offsite transport (scf).
(o) Temperatures (°R) and pressure (atm) at which each sample is collected.

(p) For each destruction device, a description of the device, including an indication of whether destruction occurs at the coal mine or off-site. If destruction occurs at the mine, also report an indication of whether a back-up destruction device is present at the mine, the annual operating hours for the primary destruction device, the annual operating hours for the back-up destruction device (if present), and the destruction efficiencies assumed (percent).

(q) A description of the gas collection system (manufacturer, capacity, and number of wells) the surface area of the gas collection system (square meters), and the annual operating hours of the gas collection system.

(r) Identification information and description for each well and shaft, indication of whether the well or shaft is monitored individually, or as part of a centralized monitoring point. Note which method (sampling or continuous monitoring) was used.

(s) For each centralized monitoring point, identification of the wells and shafts included in the point. Note which method (sampling or continuous monitoring) was used.

§ 98.327 Records that must be retained.

In addition to the information required by §98.3(g), you must retain the following records:

(a) Calibration records for all monitoring equipment, including the method or manufacturer’s specification used for calibration.

(b) Records of gas sales.

(c) Logbooks of parameter measurements.

(d) Laboratory analyses of samples.

§ 98.328 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart GG—Zinc Production

§ 98.330 Definition of the source category.

The zinc production source category consists of zinc smelters and secondary zinc recycling facilities.

§ 98.331 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a zinc production process and the facility meets the requirements of either §98.2(a)(1) or (2).

§ 98.332 GHGs to report.

You must report:

(a) CO₂ process emissions from each Waelz kiln and electrothermic furnace used for zinc production.

(b) CO₂, CH₄, and N₂O combustion emissions from each Waelz kiln. You must calculate and report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.

(c) CO₂, CH₄, and N₂O emissions from each stationary combustion unit other than Waelz kilns. You must report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C.

§ 98.333 Calculating GHG emissions.

You must calculate and report the annual process CO₂ emissions using the procedures specified in either paragraph (a) or (b) of this section.

(a) Calculate and report under this subpart the process or combined process and combustion CO₂ emissions by operating and maintaining a CEMS according to the Tier 4 Calculation Methodology in §98.39(a)(4) and all associated requirements for Tier 4 in subpart C of this part (General Stationary Fuel Combustion Sources).

(b) Calculate and report under this subpart the process CO₂ emissions by following paragraphs (b)(1) and (b)(2) of this section.

(1) For each Waelz kiln or electrothermic furnace at your facility used for zinc production, you must determine the mass of carbon in each carbon-containing material, other than fuel, that is fed, charged, or otherwise
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§ 98.334 Monitoring and QA/QC requirements.

If you determine CO₂ emissions using the carbon input procedure in §98.333(b)(1) and (b)(2), you must meet the requirements specified in paragraphs (a) and (b) of this section.

(a) Determine the mass of each solid carbon-containing input material consumed using facility instruments, procedures, or records used for accounting purposes including direct measurement agents. For Waelz kilns, carbon containing input materials include carbon electrodes and carbonaceous reducing agents. If you document that a specific material contributes less than 1 percent of the total carbon into the process, you do not have to include the material in your calculation using Equation R–1 of §98.183.

\[
E_{\text{CO}_2} = \frac{44}{12} \cdot \frac{2000}{2205} \left[ (\text{Zinc})_k \cdot (C_{\text{Zinc}})_k + (\text{Flux})_k \cdot (C_{\text{Flux}})_k + (\text{Electrode})_k \cdot (C_{\text{Electrode}})_k + (\text{Carbon})_k \cdot (C_{\text{Carbon}})_k \right] \quad \text{(Eq. GG-1)}
\]

Where:
- \(E_{\text{CO}_2}\) = Annual \(\text{CO}_2\) emissions from individual Waelz kiln or electrothermic furnace “k” (metric tons).
- \(44/12\) = Ratio of molecular weights, \(\text{CO}_2\) to carbon.
- \(2000/2205\) = Conversion factor to convert tons to metric tons.
- \((\text{Zinc})_k\) = Annual mass of zinc bearing material charged to kiln or furnace “k” (tons).
- \((C_{\text{Zinc}})_k\) = Carbon content of the zinc bearing material, from the annual carbon analysis for kiln or furnace “k” (percent by weight, expressed as a decimal fraction).
- \((\text{Flux})_k\) = Annual mass of flux materials (e.g., limestone, dolomite) charged to kiln or furnace “k” (tons).
- \((C_{\text{Flux}})_k\) = Carbon content of the flux materials charged to kiln or furnace, “k” (percent by weight, expressed as a decimal fraction).
- \((\text{Electrode})_k\) = Annual mass of carbon electrode consumed in furnace “k” (tons).
- \((C_{\text{Electrode}})_k\) = Carbon content of the carbon electrode consumed in furnace “k”; from the annual carbon analysis (percent by weight, expressed as a decimal fraction).
- \((\text{Carbon})_k\) = Annual mass of carbonaceous materials (e.g., coal, coke) charged to the kiln or furnace “k” (tons).
- \((C_{\text{Carbon}})_k\) = Carbon content of the carbonaceous materials charged to kiln or furnace, “k”, from the annual carbon analysis (percent by weight, expressed as a decimal fraction).

(b) You must determine the \(\text{CO}_2\) emissions from all of the Waelz kilns or electrothermic furnaces at your facility using Equation GG–2 of this section.

\[
\text{CO}_2 = \sum_{k=1}^{n} E_{\text{CO}_2 k} \quad \text{(Eq. GG-2)}
\]

Where:
- \(\text{CO}_2\) = Annual combined \(\text{CO}_2\) emissions from all Waelz kilns or electrothermic furnaces (tons).
- \(E_{\text{CO}_2 k}\) = Annual \(\text{CO}_2\) emissions from each Waelz kiln or electrothermic furnace \(k\) calculated using Equation GG–1 of this section (tons).
- \(n\) = Total number of Waelz kilns or electrothermic furnaces at facility used for the zinc production.

(c) If GHG emissions from a Waelz kiln or electrothermic furnace are vented through the same stack as any combustion unit or process equipment that reports \(\text{CO}_2\) emissions using a CEMS that complies with the Tier 4 Calculation Methodology in subpart C of this part (General Stationary Fuel Combustion Sources), then the calculation methodology in paragraph (b) of this section shall not be used to calculate process emissions. The owner or operator shall report under this subpart the combined stack emissions according to the Tier 4 Calculation Methodology in §98.33(a)(4) and all associated requirements for Tier 4 in subpart C of this part.

§ 98.335 Procedures for estimating missing data.

For the carbon input procedure in § 98.333(b), a complete record of all measured parameters used in the GHG emissions calculations is required (e.g., raw materials carbon content values, etc.). Therefore, whenever a quality-assured value of a required parameter is unavailable, a substitute data value for the missing parameter shall be used in the calculations as specified in paragraphs (a) and (b) of this section. You must document and keep records of the procedures used for all such estimates.

(a) For missing records of the carbon content of inputs for facilities that estimate emissions using the carbon input procedure in § 98.333(b); 100 percent data availability is required. You must repeat the test for average carbon contents of inputs according to the procedures in § 98.335(b) if data are missing.

(b) For missing records of the annual mass of carbon-containing inputs using the carbon input procedure in § 98.333(b), the substitute data value must be based on the best available estimate of the mass of the input material from all available process data or information used for accounting purposes, such as purchase records.

§ 98.336 Data reporting requirements.

In addition to the information required by § 98.3(c), each annual report must contain the information specified in paragraphs (a) or (b) of this section, as applicable, for each Waelz kiln or electrothermic furnace.

(a) If a CEMS is used to measure CO₂ emissions, then you must report under this subpart the relevant information required for the Tier 4 Calculation Methodology in § 98.36 and the information listed in this paragraph (a):

(1) Annual zinc product production capacity (tons).
(2) Annual production quantity for each zinc product (tons).
(3) Annual facility production quantity for each zinc product (tons).
(4) Number of Waelz kilns at each facility used for zinc production.
(5) Number of electrothermic furnaces at each facility used for zinc production.

(b) If a CEMS is not used to measure CO₂ emissions, then you must report the information listed in this paragraph (b):

(1) Identification number and annual process CO₂ emissions from each individual Waelz kiln or electrothermic furnace (metric tons).

(2) Annual zinc product production capacity (tons).

(3) Annual production quantity for each zinc product (tons).

(4) Number of Waelz kilns at each facility used for zinc production.

(5) Number of electrothermic furnaces at each facility used for zinc production.

(6) Annual mass of each carbon-containing input material charged to each kiln or furnace (including zinc bearing material, flux materials (e.g., limestone, dolomite), carbon electrode, and other carbonaceous materials (e.g., coal, coke)) (tons).

(7) Carbon content of each carbon-containing input material charged to each kiln or furnace (including zinc bearing material, flux materials, and other carbonaceous materials) from the annual carbon analysis or from information provided by the material supplier for each kiln or furnace (percent by weight, expressed as a decimal fraction).

(8) Whether carbon content of each carbon-containing input material charged to each kiln or furnace is based on reports from the supplier or through self measurement using applicable ASTM standard method.

(9) If carbon content of each carbon-containing input material charged to each kiln or furnace is based on self measurement, the ASTM Standard Test Method used.

(10) Carbon content of the carbon electrode used in each furnace from the annual carbon analysis or from information provided by the material supplier (percent by weight, expressed as a decimal fraction).

(11) Whether carbon content of the carbon electrode used in each furnace is based on reports from the supplier or through self measurement using applicable ASTM standard method.

(12) If carbon content of carbon electrode used in each furnace is based on self measurement, the ASTM standard method used.

(13) If you use the missing data procedures in §98.335(b), you must report how the monthly mass of carbon-containing materials with missing data was determined and the number of months the missing data procedures were used.


§98.337 Records that must be retained.

In addition to the records required by §98.3(g), you must retain the records specified in paragraphs (a) through (b) of this section for each zinc production facility.

(a) If a CEMS is used to measure emissions, then you must retain under this subpart the records required for the Tier 4 Calculation Methodology in §98.37 and the information listed in this paragraph (a):

(1) Monthly facility production quantity for each zinc product (tons).

(2) Annual operating hours for all Waelz kilns and electrothermic furnaces used in zinc production.

(b) If a CEMS is not used to measure emissions, you must also retain the records specified in paragraphs (b)(1) through (b)(7) of this section.

(1) Records of all analyses and calculations conducted for data reported as listed in §98.336(b).

(2) Annual operating hours for Waelz kilns and electrothermic furnaces used in zinc production.

(3) Monthly production quantity for each zinc product (tons).

(4) Monthly mass of zinc bearing materials, flux materials (e.g., limestone, dolomite), and carbonaceous materials (e.g., coal, coke) charged to the kiln or furnace (tons).

(5) Sampling and analysis records for carbon content of zinc bearing materials, flux materials (e.g., limestone, dolomite), carbonaceous materials (e.g., coal, coke), charged to the kiln or furnace (percent by weight, expressed as a decimal fraction).

(6) Monthly mass of carbon electrode consumed in each electrothermic furnace (tons).
§ 98.338 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart HH—Municipal Solid Waste Landfills

§ 98.340 Definition of the source category.

(a) This source category applies to municipal solid waste (MSW) landfills that accepted waste on or after January 1, 1980.

(b) This source category does not include Resource Conservation and Recovery Act (RCRA) Subtitle C or Toxic Substances Control Act (TSCA) hazardous waste landfills, construction and demolition waste landfills, or industrial waste landfills.

(c) This source category consists of the following sources at municipal solid waste (MSW) landfills: Landfills, landfill gas collection systems, and landfill gas destruction devices (including flares).


§ 98.341 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains a MSW landfill and the facility meets the requirements of §98.2(a)(1).

§ 98.342 GHGs to report.

(a) You must report CH<sub>4</sub> generation and CH<sub>4</sub> emissions from landfills.

(b) You must report CH<sub>4</sub> destruction resulting from landfill gas collection and combustion systems.

(c) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O from each stationary combustion unit following the requirements of subpart C.

§ 98.343 Calculating GHG emissions.

(a) For all landfills subject to the reporting requirements of this subpart, calculate annual modeled CH<sub>4</sub> generation according to the applicable requirements in paragraphs (a)(1) through (a)(3) of this section.

(1) Calculate annual modeled CH<sub>4</sub> generation using Equation HH–1 of this section.

\[
G_{CH4} = \sum_{x=S}^{T-1} \left\{ W_x \times MCF \times DOC \times DOC_F \times F \times \frac{16}{12} \times \left( e^{-4(T-x-1)} - e^{-4(T-x)} \right) \right\} \quad \text{(Eq. HH-1)}
\]

Where:

- \( G_{CH4} \) = Modeled methane generation rate in reporting year \( T \) (metric tons CH<sub>4</sub>).
- \( x \) = Year in which waste was disposed.
- \( S \) = Start year of calculation. Use the year 1960 or the opening year of the landfill, whichever is more recent.
- \( T \) = Reporting year for which emissions are calculated.
- \( W_x \) = Quantity of waste disposed in the landfill in year \( x \) from measurement data, tipping fee receipts, or other company records (metric tons, as received (wet weight)).
- \( MCF \) = Methane correction factor (fraction).

Use the default value of 1 unless there is active aeration of waste within the landfill during the reporting year. If there is active aeration of waste within the landfill during the reporting year, use either the default
value of 1 or select an alternative value no less than 0.5 based on site-specific aeration parameters.

DOC = Degradable organic carbon from Table HH–1 of this subpart or measurement data, if available [fraction (metric tons C/metric ton waste)].

DOC_F = Fraction of DOC dissimilated (fraction). Use the default value of 0.5.

F = Fraction by volume of \( \text{CH}_4 \) in landfill gas from measurement data on a dry basis, if available (fraction); default is 0.5.

\( k \) = Rate constant from Table HH–1 to this subpart (yr\(^{-1}\)). Select the most applicable \( k \) value for the majority of the past 10 years (or operating life, whichever is shorter).

(2) For years when material-specific waste quantity data are available, apply Equation HH–1 of this section for each waste quantity type and sum the \( \text{CH}_4 \) generation rates for all waste types to calculate the total modeled \( \text{CH}_4 \) generation rate for the landfill. Use the appropriate parameter values for \( k \), DOC, MCF, DOC_F, and F shown in Table HH–1 of this subpart. The annual quantity of each type of waste disposed must be calculated as the sum of the daily quantities of waste (of that type) disposed. You may use the bulk waste parameters for a portion of your waste materials when using the material-specific modeling approach for mixed waste streams that cannot be designated to a specific material type. For years when waste composition data are not available, use the bulk waste parameter values for \( k \) and DOC in Table HH–1 to this subpart for the total quantity of waste disposed in those years.

(3) Beginning in the first emissions reporting year and for each year thereafter, if scales are in place, you must determine the annual quantity of waste (in metric tons as received, i.e., wet weight) disposed of in the landfill using paragraph (a)(3)(i) of this section for all containers and for all vehicles used to haul waste to the landfill, except for passenger cars, light duty pickup trucks, or waste loads that cannot be measured using the scales due to physical limitations (load cannot physically access or fit on the scale) and/or operational limitations of the scale (load exceeding the limits or sensitivity range of the scale). If scales are not in place, you must use paragraph (a)(3)(ii) of this section to determine the annual quantity of waste disposed. For waste hauled to the landfill in passenger cars or light duty pickup trucks, you may use either paragraph (a)(3)(i) or paragraph (a)(3)(ii) of this section to determine the annual quantity of waste disposed. For loads that cannot be measured using the scales due to physical and/or operational limitations of the scale, you must use paragraph (a)(3)(ii) of this section or similar engineering calculations to determine the annual quantity of waste disposed. The approach used to determine the annual quantity of waste disposed must be documented in the monitoring plan.

(i) Use direct mass measurements of each individual load received at the landfill using either of the following methods:

(A) Weigh using mass scales each vehicle or container used to haul waste as it enters the landfill or disposal area; weigh using mass scales each vehicle or container after it has off-loaded the waste; determine the quantity of waste received from the individual load as the difference in the two mass measurements; and determine the annual quantity of waste received as the sum of all waste loads received during the year. Alternatively, you may determine annual quantity of waste by summing the weights of all vehicles and containers entering the landfill and subtracting from it the sum of all the weights of vehicles and containers after they have off-loaded the waste in the landfill.

(B) Weigh using mass scales each vehicle or container used to haul waste as it enters the landfill or disposal area; determine a representative tare weight by vehicle or container type by weighing no less than 5 of each type of vehicle or container after it has off-loaded the waste; determine the quantity of waste received from the individual load as the difference between the measured weight in and the tare weight determined for that container/vehicle type; and determine the annual quantity of waste received as the sum of all waste loads received during the year.

(ii) Determine the working capacity in units of mass for each type of container or vehicle used to haul waste to
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the landfill (e.g., using volumetric capacity and waste density measurements; direct measurement of a selected number of passenger vehicles and light duty pick-up trucks; or similar methods); record the number of loads received at the landfill by vehicle/container type; calculate the annual mass per vehicle/container type as the mass product of the number of loads of that vehicle/container multiplied by its working capacity; and calculate the annual quantity of waste received as the sum of the annual mass per vehicle/container type across all of the vehicle/container types used to haul waste to the landfill.

(4) For years prior to the first emissions reporting year, use methods in paragraph (a)(3) of this section when waste disposal quantity data are readily available. When waste disposal quantity data are not readily available, \( W_x \) shall be estimated using one of the applicable methods in paragraphs (a)(4)(i) through (a)(4)(iii) of this section. You must determine which method is most applicable to the conditions and disposal history of your facility. Historical waste disposal quantities should only be determined once, as part of the first annual report, and the same values should be used for all subsequent annual reports, supplemented by the next year’s data on new waste disposal.

(i) Assume all prior years waste disposal quantities are the same as the waste quantity in the first year for which waste quantities are available.

(ii) Use the estimated population served by the landfill in each year, the values for national average per capita waste disposal rates found in Table HH–2 to this subpart (metric tons per capita per year, wet basis; tons/cap/yr). \( W_x = \frac{LFC}{(YrData - YrOpen + 1)} \) (Eq. HH-3)

Where:

- \( W_x \) = Quantity of waste placed in the landfill in year \( x \) (metric tons, wet basis).
- \( LFC \) = Landfill capacity or, for operating landfills, capacity of the landfill used (or the total quantity of waste-in-place) at the end of the year prior to the year when waste disposal data are available from design drawings or engineering estimates (metric tons).
- \( YrData \) = Year in which the landfill last received waste or, for operating landfills, the year prior to the first reporting year when waste disposal data is first available from company records, or best available data.
- \( YrOpen \) = Year in which the landfill first received waste from company records or best available data. If no data are available for estimating \( YrOpen \) for a closed landfill, use 30 years as the default operating life of the landfill.

(b) For landfills with gas collection systems, calculate the quantity of CH\(_4\) destroyed according to the requirements in paragraphs (b)(1) and (b)(2) of this section.

(1) If you continuously monitor the flow rate, CH\(_4\) concentration, temperature, pressure, and, if necessary, moisture content of the landfill gas that is collected and routed to a destruction device (before any treatment equipment) using a monitoring meter specifically for CH\(_4\) gas, as specified in §98.344, you must use this monitoring system and calculate the quantity of CH\(_4\) recovered for destruction using Equation HH–4 of this section. A fully integrated system that directly reports CH\(_4\) content requires no other calculation than summing the results of all monitoring periods for a given year.
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\[
R = \sum_{n=1}^{N} \left( V_n \times (K_{MC})_n \times \frac{(C)_n}{100\%} \times 0.0423 \times \frac{520^\circ R}{(T)_n} \times \frac{(P)_n}{1 \text{ atm}} \times \frac{0.454}{1,000} \right)
\]

(Eq. HH-4)

Where:

- **R** = Annual quantity of recovered CH₄ (metric tons CH₄).
- **N** = Total number of measurement periods in a year. Use daily averaging periods for a continuous monitoring system and N = 365 (or N = 366 for leap years). For weekly sampling, as provided in paragraph (b)(2) of this section, use N=52.
- **n** = Index for measurement period.
- **(V)** = Cumulative volumetric flow for the measurement period in actual cubic feet (acf). If the flow rate meter automatically corrects for temperature and pressure, replace “520^\circ R\times(T)_n\times(P)_n/1 \text{ atm}” with “1”.
- **(K_{MC})** = Moisture correction term for the measurement period, volumetric basis, as follows: (K_{MC}) = 1 when (V), and (C), are both measured on a dry basis or if both are measured on a wet basis; (K_{MC}) = [1 - (t_{Mo} - t_{Ma})] when (V), is measured on a wet basis and (C), is measured on a dry basis; and (K_{MC}) = [1 - (t_{Mo} - t_{Ma})] when (V), is measured on a dry basis and (C), is measured on a wet basis.
- **(t_{Mo})** = Average moisture content of landfill gas during the measurement period, volumetric basis (cubic feet water per cubic feet landfill gas).
- **(t_{Ma})** = Average CH₄ concentration of landfill gas for the measurement period (vol. %).
- **0.0423** = Density of CH₄ lb/acf at 520^\circ R or 60 degrees Fahrenheit and 1 atm.
- **(T)_n** = Average temperature at which flow is measured for the measurement period (°R).
- **(P)_n** = Average pressure at which flow is measured for the measurement period (atm).
- **0.454/1,000** = Conversion factor (metric ton/lb).

(i) Continuously monitor gas flow rate and determine the cumulative volume of landfill gas each week and the cumulative volume of landfill gas each year that is collected and routed to a destruction device (before any treatment equipment). Under this option, the gas flow meter is not required to automatically correct for temperature, pressure, or, if necessary, moisture content. If the gas flow meter is not equipped with automatic correction for temperature, pressure, or, if necessary, moisture content, you must determine these parameters as specified in paragraph (b)(2)(iii) of this section.

(ii) Determine the CH₄ concentration in the landfill gas that is collected and routed to a destruction device (before any treatment equipment) in a location near or representative of the location of the gas flow meter at least once each calendar week; if only one measurement is made each calendar week, there must be at least three days between measurements.

(iii) If the gas flow meter is not equipped with automatic correction for temperature, pressure, or, if necessary, moisture content:

(A) Determine the temperature and pressure in the landfill gas that is collected and routed to a destruction device (before any treatment equipment) in a location near or representative of the location of the gas flow meter at least once each calendar week; if only one measurement is made each calendar week, there must be at least three days between measurements.

(B) If the CH₄ concentration is determined on a dry basis and flow is determined on a wet basis or CH₄ concentration is determined on a wet basis and flow is determined on a dry basis, and the flow meter does not automatically correct for moisture content, determine the moisture content in the landfill gas that is collected and routed to a destruction device (before any treatment equipment) in a location near or representative of the location of the
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gas flow meter at least once each calendar week; if only one measurement is made each calendar week, there must be at least three days between measurements.

(c) For all landfills, calculate CH₄ generation (adjusted for oxidation in cover materials) and actual CH₄ emissions (taking into account any CH₄ recovery, and oxidation in cover materials) according to the applicable methods in paragraphs (c)(1) through (c)(3) of this section.

(1) Calculate CH₄ generation, adjusted for oxidation, from the modeled CH₄ (GCH₄, from Equation HH–1 of this section) using Equation HH–5 of this section.

\[
MG = G_{CH4} \times (1 - OX) \quad (Eq. HH-5)
\]

Where:

- **MG** = Methane generation, adjusted for oxidation, from the landfill in the reporting year (metric tons CH₄).
- **GCH₄** = Modeled methane generation rate in reporting year from Equation HH–1 of this section (metric tons CH₄).
- **OX** = Oxidation fraction. Use the default value of 0.1 (10%).

(2) For landfills that do not have landfill gas collection systems, the CH₄ emissions are equal to the CH₄ generation (MG) calculated in Equation HH–5 of this section.

(3) For landfills with landfill gas collection systems, calculate CH₄ emissions using the methodologies specified in paragraphs (c)(3)(i) and (c)(3)(ii) of this section.

(i) Calculate CH₄ emissions from the modeled CH₄ generation and measured CH₄ recovery using Equation HH–6 of this section.

\[
\text{Emissions} = \left[ (G_{CH4} - R) \times (1 - OX) + R \times (1 - (DE \times f_{Dest})) \right] \quad (Eq. HH-6)
\]

Where:

- **MG** = Methane generation, adjusted for oxidation, from the landfill in the reporting year (metric tons CH₄).
- **Emissions** = Methane emissions from the landfill in the reporting year (metric tons CH₄).
- **R** = Quantity of recovered CH₄ from Equation HH–4 of this section (metric tons).
- **OX** = Oxidation fraction. Use the oxidation fraction default value of 0.1 (10%).
- **DE** = Destruction efficiency (lesser of manufacturer’s specified destruction efficiency and 0.99). If the gas is transported off-site for destruction, use DE = 1.
- **fDest** = Fraction of hours the destruction device was operating (annual operating hours/8760 hours per year). If the gas is destroyed in a back-up flare (or similar device) or if the gas is transported off-site for destruction, use fDest = 1.

(ii) Calculate CH₄ generation and CH₄ emissions using measured CH₄ recovery and estimated gas collection efficiency and Equations HH–7 and HH–8 of this section.

\[
MG = \frac{R}{CE \times f_{Rec}} \times (1 - OX) \quad (Eq. HH-7)
\]

\[
\text{Emissions} = \left[ \left( \frac{R}{CE \times f_{Rec}} - R \right) \times (1 - OX) + R \times (1 - (DE \times f_{Dest})) \right] \quad (Eq. HH-8)
\]

Where:

- **MG** = Methane generation, adjusted for oxidation, from the landfill in the reporting year (metric tons CH₄).
- **Emissions** = Methane emissions from the landfill in the reporting year (metric tons CH₄).
- **R** = Quantity of recovered CH₄ from Equation HH–4 of this section (metric tons CH₄).
(a) Mass measurement equipment used to determine the quantity of waste landfilled on or after January 1, 2010 must meet the requirements for weighing equipment as described in “Specifications, Tolerances, and Other Technical Requirements For Weighing and Measuring Devices” NIST Handbook 44 (2009) (incorporated by reference, see §98.7).

(b) For landfills with gas collection systems, operate, maintain, and calibrate a gas composition monitor capable of measuring the concentration of CH\(_4\) in the recovered landfill gas using one of the methods specified in paragraphs (b)(1) through (b)(6) of this section or as specified by the manufacturer. Gas composition monitors shall be calibrated prior to the first reporting year and recalibrated either annually or at the minimum frequency specified by the manufacturer, whichever is more frequent, or whenever the error in the midrange calibration check exceeds ± 10 percent.

(1) Method 18 at 40 CFR part 60, appendix A–6.

(2) ASTM D1945–03, Standard Test Method for Analysis of Natural Gas by Gas Chromatography (incorporated by reference, see §98.7).

(3) ASTM D1946–90 (Reapproved 2006), Standard Practice for Analysis of Reformed Gas by Gas Chromatography (incorporated by reference, see §98.7).

(4) GPA Standard 2261–00, Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography.

(5) UOP539–97 Refinery Gas Analysis by Gas Chromatography (incorporated by reference, see §98.7).

(6) As an alternative to the gas chromatography methods provided in paragraphs (b)(1) through (b)(5) of this section, you may use total gaseous organic concentration analyzers and calculate the methane concentration following the requirements in paragraphs (b)(6)(i) through (b)(6)(iii) of this section.

(i) Use Method 25A or 25B at 40 CFR part 60, appendix A–7 to determine total gaseous organic concentration. You must calibrate the instrument with methane and determine the total gaseous organic concentration as carbon (or as methane; K=1 in Equation 25A–1 of Method 25A at 40 CFR part 60, appendix A–7).

(ii) Determine a non-methane organic carbon correction factor at the routine sampling location no less frequently than once a reporting year following the requirements in paragraphs (b)(6)(ii)(A) through (b)(6)(ii)(C) of this section.

(A) Take a minimum of three grab samples of the landfill gas with a minimum of 20 minutes between samples and determine the methane composition of the landfill gas using one of the methods specified in paragraphs (b)(1) through (b)(5) of this section.

(B) As soon as practical after each grab sample is collected and prior to the collection of a subsequent grab sample, determine the total gaseous organic concentration of the landfill gas using either Method 25A or 25B at 40 CFR part 60, appendix A–7 as specified in paragraph (b)(6)(i) of this section.

(C) Determine the arithmetic average methane concentration and the arithmetic average total gaseous organic concentration of the samples analyzed according to paragraphs (b)(6)(i)(A) and (b)(6)(ii)(B) of this section, respectively, and calculate the non-methane organic carbon correction factor as the ratio of the average methane concentration to the average total gaseous
organic concentration. If the ratio exceeds 1, use 1 for the non-methane organic carbon correction factor.

(iii) Calculate the methane concentration as specified in Equation HH-9 of this section.

\[ C_{\text{CH}_4} = f_{\text{NMOC}} \times C_{\text{TGOC}} \quad (\text{Eq. HH}-9) \]

Where:

\( C_{\text{CH}_4} \) = Methane concentration in the landfill gas (volume %) for use in Equation HH-4 of this subpart.

\( f_{\text{NMOC}} \) = Non-methane organic carbon correction factor from the most recent determination of the non-methane organic carbon correction factor as specified in paragraph (b)(6)(ii) of this section (unitless).

\( C_{\text{TGOC}} \) = Total gaseous organic carbon concentration measured using Method 25A or 25B at 40 CFR part 60, appendix A-7 during routine monitoring of the landfill gas (volume %).

(c) For landfills with gas collection systems, install, operate, maintain, and calibrate a gas flow meter capable of measuring the volumetric flow rate of the recovered landfill gas using one of the methods specified in paragraphs (c)(1) through (c)(8) of this section or as specified by the manufacturer. Each gas flow meter shall be recalibrated either biennially (every 2 years) or at the minimum frequency specified by the manufacturer. Except as provided in §98.343(b)(2)(1), each gas flow meter must be capable of correcting for the temperature and pressure and, if necessary, moisture content.


(8) Method 2A or 2D at 40 CFR part 60, appendix A–1.

(d) All temperature, pressure, and if necessary, moisture content monitors must be calibrated using the procedures and frequencies specified by the manufacturer.

(e) The owner or operator shall document the procedures used to ensure the accuracy of the estimates of disposal quantities and, if applicable, gas flow rate, gas composition, temperature, pressure, and moisture content measurements. These procedures include, but are not limited to, calibration of weighing equipment, fuel flow meters, and other measurement devices. The estimated accuracy of measurements made with these devices shall also be recorded, and the technical basis for these estimates shall be provided.

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§ 98.346 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the following information for each landfill.

(a) A classification of the landfill as “open” (actively received waste in the reporting year) or “closed” (no longer receiving waste), the year in which the landfill first started accepting waste for disposal, the last year the landfill accepted waste (for open landfills, enter the estimated year of landfill closure), the capacity (in metric tons) of the landfill, an indication of whether leachate recirculation is used during the reporting year and its typical frequency of use over the past 10 years (e.g., used several times a year for the past 10 years, used at least once a year for the past 10 years, used occasionally but not every year over the past 10 years, not used), an indication as to whether scales are present at the landfill, and the waste disposal quantity for each year of landfilling required to be included when using Equation HH–1 of this subpart (in metric tons, wet weight).

(b) Method for estimating reporting year and historical waste disposal quantities, reason for its selection, and the range of years it is applied. For years when waste quantity data are determined using the methods in §98.343(a)(3), report separately the quantity of waste determined using the methods in §98.343(a)(3)(i) and the quantity of waste determined using the methods in §98.343(a)(3)(ii). For historical waste disposal quantities that were not determined using the methods in §98.343(a)(3), provide the population served by the landfill for each year the Equation HH–2 of this subpart is applied, if applicable, or, for open landfills using Equation HH–3 of this subpart, provide the value of landfill capacity (LFC) used in the calculation.

(c) Waste composition for each year required for Equation HH–1 of this subpart, in percentage by weight, for each waste category listed in Table HH–1 to this subpart that is used in Equation HH–1 of this subpart to calculate the annual modeled CH\textsubscript{4} generation.

(d) For each waste type used to calculate CH\textsubscript{4} generation using Equation HH–1 of this subpart, you must report:

(1) Degradable organic carbon (DOC), methane correction factor (MCF), and fraction of DOC dissimilated (DOC\textsubscript{F}) values used in the calculations. If an MCF value other than the default of 1 is used, provide an indication of whether active aeration of the waste in the landfill was conducted during the reporting year, a description of the aeration system, including aeration blower capacity, the fraction of the landfill containing waste affected by the aeration, the total number of hours during the year the aeration blower was operated, and other factors used as a basis for the selected MCF value.

(2) Decay rate (k) value used in the calculations.

(e) Fraction of CH\textsubscript{4} in landfill gas (F) and an indication of whether the fraction of CH\textsubscript{4} was determined based on measured values or the default value.

(f) The surface area of the landfill containing waste (in square meters), identification of the type of cover material used (as either organic cover, clay cover, sand cover, or other soil mixtures). If multiple cover types are used, the surface area associated with each cover type.
(g) The modeled annual methane generation rate for the reporting year (metric tons CH$_4$) calculated using Equation HH–1 of this subpart.

(h) For landfills without gas collection systems, the annual methane emissions (i.e., the methane generation, adjusted for oxidation, calculated using Equation HH–5 of this subpart), reported in metric tons CH$_4$, and an indication of whether passive vents and/or passive flares (vents or flares that are not considered part of the gas collection system as defined in §98.6) are present at this landfill.

(i) For landfills with gas collection systems, you must report:

1. Total volumetric flow of landfill gas collected for destruction for the reporting year (cubic feet at 520 °R or 60 degrees Fahrenheit and 1 atm).
2. Annual average CH$_4$ concentration of landfill gas collected for destruction (percent by volume).
3. Monthly average temperature and pressure for each month at which flow is measured for landfill gas collected for destruction, or statement that temperature and/or pressure is incorporated into internal calculations run by the monitoring equipment.
4. An indication as to whether flow was measured on a wet or dry basis, an indication as to whether CH$_4$ concentration was measured on a wet or dry basis, and if required for Equation HH–4 of this subpart, monthly average moisture content for each month at which flow is measured for landfill gas collected for destruction.
5. An indication of whether destruction occurs at the landfill facility or off-site. If destruction occurs at the landfill facility, also report an indication of whether a back-up destruction device is present at the landfill, the annual operating hours for the primary destruction device, the annual operating hours for the back-up destruction device (if present), and the destruction efficiency used (percent).
6. Annual quantity of recovered CH$_4$ (metric tons CH$_4$) calculated using Equation HH–4 of this subpart.
7. A description of the gas collection system (manufacturer, capacity, and number of wells), the surface area (square meters) and estimated waste depth (meters) for each area specified in Table HH–3 to this subpart, the estimated gas collection system efficiency for landfills with this gas collection system, the annual operating hours of the gas collection system, and an indication of whether passive vents and/or passive flares (vents or flares that are not considered part of the gas collection system as defined in §98.6) are present at this landfill.

(8) Methane generation corrected for oxidation calculated using Equation HH–5 of this subpart, reported in metric tons CH$_4$.

(9) Methane generation (G$_{CH_4}$) value used as an input to Equation HH–6 of this subpart. Specify whether the value is modeled (G$_{CH_4}$ from HH–1 of this subpart) or measured (R from Equation HH–4 of this subpart).

(10) Methane generation corrected for oxidation calculated using Equation HH–7 of this subpart, reported in metric tons CH$_4$.

(11) Methane emissions calculated using Equation HH–6 of this subpart, reported in metric tons CH$_4$.

(12) Methane emissions calculated using Equation HH–8 of this subpart, reported in metric tons CH$_4$.

§ 98.347 Records that must be retained.

In addition to the information required by §98.3(g), you must retain the calibration records for all monitoring equipment, including the method or manufacturer’s specification used for calibration. You must retain records of all measurements made to determine tare weights and working capacities by vehicle/container type if these are used to determine the annual waste quantities.

§ 98.348 Definitions.

Except as specified in this section, all terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Construction and demolition (C&D) waste landfill means a solid waste disposal facility subject to the requirements of part 257, subparts A or B of
Environmental Protection Agency

this chapter that receives construction and demolition waste and does not receive hazardous waste (defined in §261.3 of this chapter) or industrial solid waste (defined in §258.2 of this chapter) or municipal solid waste (as defined in §96.6) other than residential lead-based paint waste. A C&D waste landfill typically receives any one or more of the following types of solid wastes: Roadwork material, excavated material, demolition waste, construction/renovation waste, and site clearance waste.

_Destruction device_ means a flare, thermal oxidizer, boiler, turbine, internal combustion engine, or any other combustion unit used to destroy or oxidize methane contained in landfill gas.

_Industrial waste landfill_ means any landfill other than a municipal solid waste landfill, a RCRA Subtitle C hazardous waste landfill, or a TSCA hazardous waste landfill, in which industrial solid waste, such as a RCRA Subtitle D wastes (nonhazardous industrial solid waste, defined in §257.2 of this chapter), commercial solid wastes, or conditionally exempt small quantity generator wastes, is placed. An industrial waste landfill includes all disposal areas at the facility.

_Solid waste_ has the meaning established by the Administrator pursuant to the Solid Waste Disposal Act (42 U.S.C.A. 6901 et seq.).

_Working capacity_ means the maximum volume or mass of waste that is actually placed in the landfill from an individual or representative type of container (such as a tank, truck, or roll-off bin) used to convey wastes to the landfill, taking into account that the container may not be able to be 100 percent filled and/or 100 percent emptied for each load.

[75 FR 66473, Oct. 28, 2010]

TABLE HH–1 TO SUBPART HH OF PART 98—EMISSIONS FACTORS, OXIDATION FACTORS AND METHODS

<table>
<thead>
<tr>
<th>Factor</th>
<th>Default value</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOC and k values—Bulk waste option</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOC (bulk waste)</td>
<td>0.20</td>
<td>Weight fraction, wet basis.</td>
</tr>
<tr>
<td>k (precipitation plus recirculated leachate * &lt;20 inches/year)</td>
<td>0.02</td>
<td>yr⁻¹</td>
</tr>
<tr>
<td>k (precipitation plus recirculated leachate * 20–40 inches/year)</td>
<td>0.038</td>
<td>yr⁻¹</td>
</tr>
<tr>
<td>k (precipitation plus recirculated leachate * &gt;40 inches/year)</td>
<td>0.057</td>
<td>yr⁻¹</td>
</tr>
</tbody>
</table>

| DOC and k values—Modified bulk MSW option |
| DOC (bulk MSW, excluding inert and C&D waste) | 0.31 | Weight fraction, wet basis. |
| DOC (inerts, e.g., glass, plastics, metal, concrete) | 0.00 | Weight fraction, wet basis. |
| DOC (C&D waste) | 0.08 | Weight fraction, wet basis. |
| k (bulk MSW, excluding inert and C&D waste) | 0.02 to 0.057b | yr⁻¹ |
| k (inerts, e.g., glass, plastics, metal, concrete) | 0.00 | yr⁻¹ |
| k (C&D waste) | 0.02 to 0.04b | yr⁻¹ |

| DOC and k values—Waste composition option |
| DOC (food waste) | 0.15 | Weight fraction, wet basis. |
| DOC (garden) | 0.2 | Weight fraction, wet basis. |
| DOC (paper) | 0.4 | Weight fraction, wet basis. |
| DOC (wood and straw) | 0.43 | Weight fraction, wet basis. |
| DOC (textiles) | 0.24 | Weight fraction, wet basis. |
| DOC (diapers) | 0.24 | Weight fraction, wet basis. |
| DOC (sewage sludge) | 0.09 | Weight fraction, wet basis. |
| DOC (inerts, e.g., glass, plastics, metal, cement) | 0.00 | Weight fraction, wet basis. |
| k (food waste) | 0.06 to 0.185c | yr⁻¹ |
| k (garden) | 0.05 to 0.10d | yr⁻¹ |
| k (paper) | 0.04 to 0.06d | yr⁻¹ |
| k (wood and straw) | 0.02 to 0.03d | yr⁻¹ |
| k (textiles) | 0.04 to 0.06d | yr⁻¹ |
| k (diapers) | 0.05 to 0.10d | yr⁻¹ |
| k (sewage sludge) | 0.06 to 0.185c | yr⁻¹ |
| k (inerts e.g., glass, plastics, metal, concrete) | 0.00 | yr⁻¹ |

| Other parameters—All MSW landfills |
| MCF | 1. |
| DOC | 0.5. |
TABLE HH–2 TO SUBPART HH OF PART 98—U.S. PER CAPITA WASTE DISPOSAL RATES

<table>
<thead>
<tr>
<th>Year</th>
<th>Waste per capita</th>
<th>% to SWDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>0.63</td>
<td>100</td>
</tr>
<tr>
<td>1951</td>
<td>0.63</td>
<td>100</td>
</tr>
<tr>
<td>1952</td>
<td>0.63</td>
<td>100</td>
</tr>
<tr>
<td>1953</td>
<td>0.63</td>
<td>100</td>
</tr>
<tr>
<td>1954</td>
<td>0.63</td>
<td>100</td>
</tr>
<tr>
<td>1955</td>
<td>0.63</td>
<td>100</td>
</tr>
<tr>
<td>1956</td>
<td>0.63</td>
<td>100</td>
</tr>
<tr>
<td>1957</td>
<td>0.63</td>
<td>100</td>
</tr>
<tr>
<td>1958</td>
<td>0.63</td>
<td>100</td>
</tr>
<tr>
<td>1959</td>
<td>0.63</td>
<td>100</td>
</tr>
<tr>
<td>1960</td>
<td>0.63</td>
<td>100</td>
</tr>
<tr>
<td>1961</td>
<td>0.64</td>
<td>100</td>
</tr>
<tr>
<td>1962</td>
<td>0.64</td>
<td>100</td>
</tr>
<tr>
<td>1963</td>
<td>0.65</td>
<td>100</td>
</tr>
<tr>
<td>1964</td>
<td>0.65</td>
<td>100</td>
</tr>
<tr>
<td>1965</td>
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<td>0.66</td>
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</tr>
<tr>
<td>1967</td>
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<tr>
<td>1968</td>
<td>0.68</td>
<td>100</td>
</tr>
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<td>1969</td>
<td>0.68</td>
<td>100</td>
</tr>
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<td>1970</td>
<td>0.69</td>
<td>100</td>
</tr>
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<td>1971</td>
<td>0.69</td>
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</tr>
<tr>
<td>1972</td>
<td>0.70</td>
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</tr>
<tr>
<td>1973</td>
<td>0.71</td>
<td>100</td>
</tr>
<tr>
<td>1974</td>
<td>0.71</td>
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<tr>
<td>1975</td>
<td>0.72</td>
<td>100</td>
</tr>
<tr>
<td>1976</td>
<td>0.73</td>
<td>100</td>
</tr>
<tr>
<td>1977</td>
<td>0.73</td>
<td>100</td>
</tr>
<tr>
<td>1978</td>
<td>0.74</td>
<td>100</td>
</tr>
<tr>
<td>1979</td>
<td>0.75</td>
<td>100</td>
</tr>
<tr>
<td>1980</td>
<td>0.75</td>
<td>100</td>
</tr>
</tbody>
</table>

Editorial Note: At 75 FR 26523, May 22, 2010, Table HH–2 to subpart HH was amended; however, the amendment could not be incorporated as instructed.

TABLE HH–3 TO SUBPART HH OF PART 98—LANDFILL GAS COLLECTION EFFICIENCIES

<table>
<thead>
<tr>
<th>Description</th>
<th>Landfill Gas Collection Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1: Area with no waste in-place</td>
<td>not applicable; do not use this area in the calculation.</td>
</tr>
<tr>
<td>A2: Area without active gas collection, regardless of cover type</td>
<td>CE2: 0%</td>
</tr>
<tr>
<td>A3: Area with daily soil cover and active gas collection</td>
<td>CE3: 60%</td>
</tr>
<tr>
<td>A4: Area with an intermediate soil cover, or a final soil cover not meeting the criteria for A5 below, and active gas collection</td>
<td>CE4: 75%</td>
</tr>
<tr>
<td>A5: Area with a final soil cover of 3 feet or thicker of clay and/or geomembrane cover system and active gas collection</td>
<td>CES: 95%</td>
</tr>
<tr>
<td>Area weighted average collection efficiency for landfills</td>
<td>[ CE_{ave} = \frac{A_2 \cdot CE_2 + A_3 \cdot CE_3 + A_4 \cdot CE_4 + A_5 \cdot CES}{(A_2 + A_3 + A_4 + A_5)} ]</td>
</tr>
</tbody>
</table>
Subpart II—Industrial Wastewater Treatment

SOURCE: 75 FR 39767, July 12, 2010, unless otherwise noted.

§ 98.350 Definition of source category.
(a) This source category consists of anaerobic processes used to treat industrial wastewater and industrial wastewater treatment sludge at facilities that perform the operations listed in this paragraph.
(1) Pulp and paper manufacturing.
(2) Food processing.
(3) Ethanol production.
(4) Petroleum refining.
(b) An anaerobic process is a procedure in which organic matter in wastewater, wastewater treatment sludge, or other material is degraded by microorganisms in the absence of oxygen, resulting in the generation of CO₂ and CH₄.
This source category consists of the following: anaerobic reactors, anaerobic lagoons, anaerobic sludge digesters, and biogas destruction devices (for example, burners, boilers, turbines, flares, or other devices).
(1) An anaerobic reactor is an enclosed vessel used for anaerobic wastewater treatment (e.g., upflow anaerobic sludge blanket, fixed film).
(2) An anaerobic sludge digester is an enclosed vessel in which wastewater treatment sludge is degraded anaerobically.
(3) An anaerobic lagoon is a lined or unlined earthen basin used for wastewater treatment, in which oxygen is absent throughout the depth of the basin, except for a shallow surface zone. Anaerobic lagoons are not equipped with surface aerators. Anaerobic lagoons are classified as deep (depth more than 2 meters) or shallow (depth less than 2 meters).
(c) This source category does not include municipal wastewater treatment plants or separate treatment of sanitary wastewater at industrial sites.

§ 98.351 Reporting threshold.
You must report GHG emissions under this subpart if your facility meets all of the conditions under paragraphs (a) or (b) of this section:
(a) Petroleum refineries and pulp and paper manufacturing.
(1) The facility is subject to reporting under subpart Y of this part (Petroleum Refineries) or subpart AA of this part (Pulp and Paper Manufacturing).
(2) The facility meets the requirements of either §98.2(a)(1) or (2).
(b) The facility operates an anaerobic process to treat industrial wastewater and/or industrial wastewater treatment sludge.
(c) Ethanol production and food processing facilities.
(1) The facility performs an ethanol production or food processing operation, as defined in §98.358 of this subpart.
(2) The facility meets the requirements of §98.2(a)(2).
(3) The facility operates an anaerobic process to treat industrial wastewater and/or industrial wastewater treatment sludge.

§ 98.352 GHGs to report.
(a) You must report CH₄ generation, CH₄ emissions, and CH₄ recovered from treatment of industrial wastewater at each anaerobic lagoon and anaerobic reactor.
(b) You must report CH₄ emissions and CH₄ recovered from each anaerobic sludge digester.
(c) You must report CH₄ emissions and CH₄ destruction resulting from each biogas collection and biogas destruction device.
(d) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO₂, CH₄, and N₂O from each stationary combustion unit associated with the landfill gas destruction device, if present, by following the requirements of subpart C of this part.

§ 98.353 Calculating GHG emissions.
(a) For each anaerobic reactor and anaerobic lagoon, estimate the annual mass of CH₄ generated according to the applicable requirements in paragraphs (a)(1) through (a)(2) of this section.
(1) If you measure the concentration of organic material entering the anaerobic reactors or anaerobic lagoon using methods for the determination of
chemical oxygen demand (COD), then estimate annual mass of CH\textsubscript{4} generated using Equation II–1 of this section.

\[
CH_4 G_n = \sum_{n=1}^{52} [Flow_w \ast COD_w \ast B_w \ast MCF \ast 0.001] \quad (\text{Eq. II-1})
\]

Where:
- \(CH_4 G_n\) = Annual mass CH\textsubscript{4} generated from the nth anaerobic wastewater treatment process (metric tons).
- \(n\) = Index for processes at the facility, used in Equation II–7.
- \(w\) = Index for weekly measurement period.
- \(Flow_w\) = Volume of wastewater sent to an anaerobic wastewater treatment process in week \(w\) (m\textsuperscript{3}/week), measured as specified in § 98.354(d).
- \(COD_w\) = Average weekly concentration of chemical oxygen demand of wastewater entering an anaerobic wastewater treatment process (for week \(w\))(kg/m\textsuperscript{3}), measured as specified in § 98.354(b) and (c).
- \(B_w\) = Maximum CH\textsubscript{4} producing potential of wastewater (kg CH\textsubscript{4}/kg COD), use the value 0.25.
- \(MCF\) = CH\textsubscript{4} conversion factor, based on relevant values in Table II–1 of this subpart.
- 0.001 = Conversion factor from kg to metric tons.

(2) If you measure the concentration of organic material entering the anaerobic reactors or anaerobic lagoon using methods for the determination of 5-day biochemical oxygen demand (BOD\textsubscript{5}), then estimate annual mass of CH\textsubscript{4} generated using Equation II–2 of this section.

\[
CH_4 G_n = \sum_{w=1}^{52} [Flow_w \ast BOD_{5,w} \ast B_w \ast MCF \ast 0.001] \quad (\text{Eq. II-2})
\]

Where:
- \(CH_4 G_n\) = Annual mass of CH\textsubscript{4} emissions from the wastewater treatment process \(n\) from which biogas is not recovered (metric tons).
- \(n\) = Index for processes at the facility, used in Equation II–7.
- \(w\) = Index for weekly measurement period.
- \(Flow_w\) = Volume of wastewater sent to an anaerobic wastewater treatment process in week \(w\)(m\textsuperscript{3}/week), measured as specified in § 98.354(d).
- \(BOD_{5,w}\) = Average weekly concentration of 5-day biochemical oxygen demand of wastewater entering an anaerobic wastewater treatment process for week \(w\)(kg/m\textsuperscript{3}), measured as specified in § 98.354(b) and (c).
- \(B_w\) = Maximum CH\textsubscript{4} producing potential of wastewater (kg CH\textsubscript{4}/kg BOD\textsubscript{5}), use the value 0.6.
- \(MCF\) = CH\textsubscript{4} conversion factor, based on relevant values in Table II–1 of this subpart.
- 0.001 = Conversion factor from kg to metric tons.

For each anaerobic digester, anaerobic reactor, or anaerobic lagoon from which some biogas is recovered, estimate the annual mass of CH\textsubscript{4} recovered according to the requirements in paragraphs (c)(1) and (c)(2) of this section. To estimate the annual mass of CH\textsubscript{4} recovered, you must continuously monitor gas flow rate as specified in § 98.354(f) and (h).

\[
CH_4 E_n = CH_4 G_n \quad (\text{Eq. II-3})
\]

Where:
- \(CH_4 E_n\) = Annual mass of CH\textsubscript{4} emissions from the wastewater treatment process \(n\) from which biogas is not recovered (metric tons).

(b) For each anaerobic reactor and anaerobic lagoon from which biogas is not recovered, estimate annual CH\textsubscript{4} emissions using Equation II–3 of this section.

(1) If you continuously monitor CH\textsubscript{4} concentration (and if necessary, temperature, pressure, and moisture content required as specified in § 98.354(f))
of the biogas that is collected and routed to a destruction device using a monitoring meter specifically for CH₄ gas, as specified in §98.354(g), you must use this monitoring system and calculate the quantity of CH₄ recovered for destruction using Equation II–4 of this section. A fully integrated system that directly reports CH₄ content requires only the summing of results of all monitoring periods for a given year.

\[
R_n = \sum_{m=1}^{M} \left[ (V_{m} \times (K_{MC})_m \times \frac{(C_{CH₄})_m}{100}) \times 0.0423 \times \frac{520^\circ R \times (P)_m}{(T)_m} \times \frac{1}{1 \text{ atm}} \times \frac{0.454}{1,000} \right] \quad \text{(Eq. II-4)}
\]

Where:
- \(R_n\) = Annual quantity of CH₄ recovered from the nth anaerobic reactor, digester, or lagoon (metric tons CH₄/yr)
- \(n\) = Index for processes at the facility, used in Equation II–2.
- \(M\) = Total number of measurement periods in a year. Use \(M = 365\) (\(M = 366\) for leap years) for daily averaging of continuous monitoring, as provided in paragraph (c)(1) of this section. Use \(M = 52\) for weekly sampling, as provided in paragraph (c)(2) of this section.
- \(m\) = Index for measurement period.
- \(V_m\) = Cumulative volumetric flow for the measurement period in actual cubic feet (acf). If no biogas was recovered during a monitoring period, use zero.
- \(K_{MC}\) = Moisture correction term for the measurement period, volumetric basis.
- \(C_{CH₄}\) = Average CH₄ concentration of biogas during the measurement period, volumetric basis. (cubic feet water per cubic feet biogas).
- \(C_{CH₄m}\) = Average CH₄ concentration of biogas during the measurement period, (volume %).
- 0.0423 = Density of CH₄ lb/cf at 520 °R or 60 °F and 1 atm.
- 520 °R = 520 degrees Rankine.
- \(T_m\) = Temperature at which flow is measured for the measurement period °R. If the flow rate meter automatically corrects for temperature replace “520 °R/T_m” with “1”.
- \(P_m\) = Pressure at which flow is measured for the measurement period (atm). If the flow rate meter automatically corrects for pressure, replace “P_m/T_m” with “1”.
- 0.454/1,000 = Conversion factor (metric ton/1b).

(2) If you do not continuously monitor CH₄ concentration according to paragraph (c)(1) of this section, you must determine the CH₄ concentration, temperature, pressure, and, if necessary, moisture content of the biogas that is collected and routed to a destruction device according to the requirements in paragraphs (c)(2)(i) through (c)(2)(iii) of this section and calculate the quantity of CH₄ recovered for destruction using Equation II–4 of this section.

(i) Continuously monitor gas flow rate and determine the volume of biogas each week and the cumulative volume of biogas each year that is collected and routed to a destruction device. If the gas flow meter is not equipped with automatic correction for temperature, pressure, or, if necessary, moisture content, you must determine these parameters as specified in paragraph (c)(2) of this section.

(ii) Determine the CH₄ concentration in the biogas that is collected and routed to a destruction device in a location near or representative of the location of the gas flow meter once each calendar week, with at least three days between measurements. For a given calendar week, you are not required to determine CH₄ concentration if the cumulative volume of biogas for that calendar week, determined as specified in paragraph (c)(2)(i) of this section, is zero.

(iii) If the gas flow meter is not equipped with automatic correction for temperature, pressure, or, if necessary, moisture content:

(A) Determine the temperature and pressure in the biogas that is collected and routed to a destruction device in a location near or representative of the
§ 98.353  

40 CFR Ch. I (7–1–11 Edition)  

location of the gas flow meter once each calendar week, with at least three days between measurements.

(B) If the CH₄ concentration is determined on a dry basis and biogas flow is determined on a wet basis, or CH₄ concentration is determined on a wet basis and biogas flow is determined on a dry basis, and the flow meter does not automatically correct for moisture content, determine the moisture content in the biogas that is collected and routed to a destruction device in a location near or representative of the location of the gas flow meter once each calendar week that the cumulative biogas flow measured as specified in §98.354(h) is greater than zero, with at least three days between measurements.

(d) For each anaerobic digester, anaerobic reactor, or anaerobic lagoon from which some quantity of biogas is recovered, you must estimate both the annual mass of CH₄ that is generated, but not recovered, and the annual mass of CH₄ emitted according to paragraph (d)(2) of this section.  

(1) Estimate the annual mass of CH₄ that is generated, but not recovered, using Equation II–5 of this section.

\[
CH_4 L_n = R_n \left( \frac{1}{CE} - 1 \right) \tag{Eq. II-5}
\]

Where:
- \(CH_4 L_n\) = Leakage at the anaerobic process \(n\) (metric tons CH₄).
- \(R_n\) = Annual quantity of CH₄ recovered from the \(n\)th anaerobic reactor, anaerobic lagoon, or anaerobic digester, as calculated in Equation II–4 of this section (metric tons CH₄).
- \(CE\) = CH₄ collection efficiency of anaerobic process \(n\), as specified in Table II–2 of this subpart (decimal).

(2) For each anaerobic digester, anaerobic reactor, or anaerobic lagoon from which some quantity of biogas is recovered, estimate the annual mass of CH₄ emitted using Equation II–6 of this section.

\[
CH_4 E_n = CH_4 L_n + R_n \left( 1 - (DE_1 * f_{Dest-1}) \right) + R_n \left[ 1 - (DE_2 * f_{Dest-2}) \right] \tag{Eq. II-6}
\]

Where:
- \(CH_4 E_n\) = Annual quantity of CH₄ emitted from the process \(n\) from which biogas is recovered (metric tons/yr).
- \(n\) = Index for processes at the facility, used in Equation II–7.
- \(CH_4 L_n\) = Leakage at the anaerobic process \(n\), as calculated in Equation II–5 of this section (metric tons CH₄).
- \(R_n\) = Annual quantity of CH₄ recovered from the \(n\)th anaerobic reactor or anaerobic digester, as calculated in Equation II–4 of this section (metric tons CH₄).
- \(DE_1\) = Primary destruction device CH₄ destruction efficiency (lesser of manufacturer’s specified destruction efficiency and 0.99). If the gas is transported off-site for destruction, use \(DE = 1\).
- \(f_{Dest-1}\) = Fraction of hours the primary destruction device was operating (device operating hours/hours in the year).
- \(DE_2\) = Back-up destruction device CH₄ destruction efficiency (lesser of manufacturer’s specified destruction efficiency and 0.99). If the gas is transported off-site for destruction, use \(DE = 1\).
- \(f_{Dest-2}\) = Fraction of hours the back-up destruction device was operating (device operating hours/hours in the year).

(e) Estimate the total mass of CH₄ emitted from all anaerobic processes from which biogas is not recovered (calculated in Eq. II–3) and all anaerobic processes from which some biogas is recovered (calculated in Equation II–6) using Equation II–7 of this section.

\[
CH_4 E_T = \sum_{n=1}^{j} CH_4 E_n \tag{Eq. II-7}
\]

Where:
- \(CH_4 E_T\) = Annual mass CH₄ emitted from all anaerobic processes at the facility (metric tons).
- \(n\) = Index for processes at the facility.
- \(CH_4 E_n\) = Annual mass of CH₄ emissions from process \(n\) (metric tons).
- \(j\) = Total number of processes from which methane is emitted.
§ 98.354 Monitoring and QA/QC requirements.

(a) For calendar year 2011 monitoring, the facility may submit a request to the Administrator to use one or more best available monitoring methods as listed in §98.3(d)(1)(i) through (iv). The request must be submitted no later than October 12, 2010 and must contain the information in §98.3(d)(2)(ii). To obtain approval, the request must demonstrate to the Administrator’s satisfaction that it is not reasonably feasible to acquire, install, and operate a required piece of monitoring equipment by January 1, 2011. The use of best available monitoring methods will not be approved beyond December 31, 2011.

(b) You must determine the concentration of organic material in wastewater treated anaerobically using analytical methods for COD or BOD₅ specified in 40 CFR 136.3 Table 1B. For the purpose of determining concentrations of wastewater influent to the anaerobic wastewater treatment process, samples may be diluted to the concentration range of the approved method, but the calculated concentration of the undiluted wastewater must be used for calculations and reporting required by this subpart.

(c) You must collect samples representing wastewater influent to the anaerobic wastewater treatment process, following all preliminary and primary treatment steps (e.g., after grit removal, primary clarification, oil-water separation, dissolved air flotation, or similar solids and oil separation processes). You must collect and analyze samples for COD or BOD₅ concentration once each calendar week that the anaerobic wastewater treatment process is operating, with at least three days between measurements. You must collect a minimum of four sample aliquots per 24-hour period and composite the aliquots for analysis. Collect a flow-proportional composite sample (either constant time interval between samples with sample volume proportional to stream flow, or constant sample volume with time interval between samples proportional to stream flow). Follow sampling procedures and techniques presented in Chapter 5, Sampling, of the “NPDES Compliance Inspection Manual,” (incorporated by reference, see §98.7) or Section 7.1.3, Sample Collection Methods, of the “U.S. EPA NPDES Permit Writers’ Manual,” (incorporated by reference, see §98.7).

(d) You must measure the flowrate of wastewater entering anaerobic wastewater treatment process once each calendar week that the process is operating, with at least three days between measurements. You must measure the flowrate for the 24-hour period for which you collect samples analyzed for COD or BOD₅ concentration. The flow measurement location must correspond to the location used to collect samples analyzed for COD or BOD₅ concentration. You must measure the flowrate using one of the methods specified in paragraphs (d)(1) through (d)(5) of this section or as specified by the manufacturer.


(e) All wastewater flow measurement devices must be calibrated prior to the first year of reporting and recalibrated either biennially (every 2 years) or at the minimum frequency specified by the manufacturer. Wastewater flow
measurement devices must be calibrated using the procedures specified by the device manufacturer.

(f) For each anaerobic process (such as anaerobic reactor, digester, or lagoon) from which biogas is recovered, you must continuously measure the gas flow rate as specified in paragraph (h) of this section and determine the cumulative volume of gas recovered as specified in Equation II–4 of this subpart. You must also determine the CH₄ concentration of the recovered biogas as specified in paragraph (g) of this section at a location near or representative of the location of the gas flow meter. You must determine CH₄ concentration either continuously or intermittently. If you determine the concentration intermittently, you must determine the concentration at least once each calendar week that the cumulative biogas flow measured as specified in paragraph (h) of this section is greater than zero, with at least three days between measurements. As specified in §98.353(c) and paragraph (h) of this section, you must also determine temperature, pressure, and moisture content as necessary to accurately determine the gas flow rate and CH₄ concentration. You must determine methane composition of the recovered biogas if the gas flow rate is measured on a dry basis and the CH₄ concentration is measured on a wet basis.

(g) For each anaerobic process (such as an anaerobic reactor, digester, or lagoon) from which biogas is recovered, operate, maintain, and calibrate a gas composition monitor capable of measuring the concentration of CH₄ in the recovered biogas using one of the methods specified in paragraphs (g)(1) through (g)(6) of this section or as specified by the manufacturer.

(1) Method 18 at 40 CFR part 60, appendix A–6.
(2) ASTM D1945–03, Standard Test Method for Analysis of Natural Gas by Gas Chromatography (incorporated by reference, see §98.7).
(3) ASTM D1946–90 (Reapproved 2006), Standard Practice for Analysis of Refractory Gas by Gas Chromatography (incorporated by reference, see §98.7).
(4) GPA Standard 2261–00, Analysis for Natural Gas and Similar Gaseous Mixtures by Gas Chromatography (incorporated by reference, see §98.7).
(5) ASTM UOP539–97 Refinery Gas Analysis by Gas Chromatography (incorporated by reference, see §98.7).
(6) As an alternative to the gas chromatography methods provided in paragraphs (g)(1) through (g)(5) of this section, you may use total gaseous organic concentration analyzers and calculate the CH₄ concentration following the requirements in paragraphs (g)(6)(i) through (g)(6)(iii) of this section.

(i) Use Method 25A or 25B at 40 CFR part 60, appendix A–7 to determine total gaseous organic concentration. You must calibrate the instrument with CH₄ and determine the total gaseous organic concentration as carbon (or as CH₄; K=1 in Equation 25A–1 of Method 25A at 40 CFR part 60, appendix A–7).

(ii) Determine a non-methane organic carbon correction factor at the routine sampling location no less frequently than once a reporting year following the requirements in paragraphs (g)(6)(i)(A) through (g)(6)(ii)(C) of this section.

(A) Take a minimum of three grab samples of the biogas with a minimum of 20 minutes between samples and determine the methane composition of the biogas using one of the methods specified in paragraphs (g)(1) through (g)(5) of this section.

(B) As soon as practical after each grab sample is collected and prior to the collection of a subsequent grab sample, determine the total gaseous organic concentration of the biogas using either Method 25A or 25B at 40 CFR part 60, appendix A–7 as specified in paragraph (g)(6)(i) of this section.

(C) Determine the arithmetic average methane concentration and the arithmetic average total gaseous organic concentration of the samples analyzed according to paragraphs (g)(6)(i)(A) and (g)(6)(ii)(B) of this section, respectively, and calculate the non-methane
organic carbon correction factor as the ratio of the average methane concentration to the average total gaseous organic concentration. If the ratio exceeds 1, use 1 for the non-methane organic carbon correction factor.

(iii) Calculate the CH$_4$ concentration as specified in Equation II-8 of this section.

$$C_{CH_4} = f_{NMOC} \times C_{TGOC} \quad (\text{Eq. II-8})$$

Where:
- $C_{CH_4}$ = Methane (CH$_4$) concentration in the biogas (volume %) for use in Equation II-4 of this subpart.
- $f_{NMOC}$ = Non-methane organic carbon correction factor from the most recent determination of the non-methane organic carbon correction factor as specified in paragraph (g)(6)(ii) of this section (unitless).
- $C_{TGOC}$ = Total gaseous organic carbon concentration measured using Method 25A or 25B at 40 CFR part 60, appendix A–7 during routine monitoring of the biogas (volume %).

(h) For each anaerobic process (such as an anaerobic reactor, digester, or lagoon) from which biogas is recovered, install, operate, maintain, and calibrate a gas flow meter capable of continuously measuring the volumetric flow rate of the recovered biogas using one of the methods specified in paragraphs (h)(1) through (h)(8) of this section or as specified by the manufacturer. Recalibrate each gas flow meter either biennially (every 2 years) or at the minimum frequency specified by the manufacturer. Except as provided in §98.353(c)(2)(iii), each gas flow meter must be capable of correcting for the temperature and pressure and, if necessary, moisture content.


(8) Method 2A or 2D at 40 CFR part 60, appendix A–1.

(i) All temperature, pressure, and, moisture content monitors required as specified in paragraph (f) of this section must be calibrated using the procedures and frequencies where specified by the device manufacturer, if not specified use an industry accepted or industry standard practice.

(j) All equipment (temperature, pressure, and moisture content monitors and gas flow meters and gas composition monitors) must be maintained as specified by the manufacturer.

(k) If applicable, the owner or operator must document the procedures used to ensure the accuracy of measurements of COD or BOD$_5$ concentration, wastewater flow rate, gas flow rate, gas composition, temperature, pressure, and moisture content. These procedures include, but are not limited to, calibration of gas flow meters, and other measurement devices. The estimated accuracy of measurements made with these devices must also be recorded, and the technical basis for these estimates must be documented.

§ 98.355 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable (e.g., if a meter malfunctions during unit operation or if a required sample is not taken), a substitute data value for the missing parameter must be used in the calculations, according to the following requirements in paragraphs (a) through (c) of this section:
(a) For each missing weekly value of COD or BOD, or wastewater flow entering an anaerobic wastewater treatment process, the substitute data value must be the arithmetic average of the quality-assured values of those parameters for the week immediately preceding and the week immediately following the missing data incident.

(b) For each missing value of the CH$_4$ content or gas flow rates, the substitute data value must be the arithmetic average of the quality-assured values of that parameter immediately preceding and immediately following the missing data incident.

(c) If, for a particular parameter, no quality-assured data are available prior to the missing data incident, the substitute data value must be the first quality-assured value obtained after the missing data period. If, for a particular parameter, the “after” value is not obtained by the end of the reporting year, you may use the last quality-assured value obtained “before” the missing data period for the missing data substitution. You must document and keep records of the procedures you use for all such estimates.

§ 98.356 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the following information for each wastewater treatment system.

(a) A description or diagram of the industrial wastewater treatment system, identifying the processes used to treat industrial wastewater and industrial wastewater treatment sludge. Explain how the processes are related to each other and identify the anaerobic processes. Provide a unique identifier for each anaerobic process, indicate the average depth in meters of all anaerobic lagoons, and indicate whether biogas generated by each anaerobic process is recovered. The anaerobic processes must be identified as:

1. Anaerobic reactor.
2. Anaerobic deep lagoon (depth more than 2 meters).
3. Anaerobic shallow lagoon (depth less than 2 meters).
4. Anaerobic sludge digester.

(b) For each anaerobic wastewater treatment process (reactor, deep lagoon, or shallow lagoon) you must report:

1. Weekly average COD or BOD concentration of wastewater entering each anaerobic wastewater treatment process, for each week the anaerobic process was operated.
2. Volume of wastewater entering each anaerobic wastewater treatment process for each week the anaerobic process was operated.
3. Maximum CH$_4$ production potential (B$_0$) used as an input to Equation II–1 or II–2 of this subpart.
4. Methane conversion factor (MCF) used as an input to Equation II–1 or II–2 of this subpart.
5. Annual mass of CH$_4$ generated by each anaerobic wastewater treatment process, calculated using Equation II–1 or II–2 of this subpart.

(c) For each anaerobic wastewater treatment process from which biogas is not recovered, you must report the annual CH$_4$ emissions, calculated using Equation II–3 of this subpart.

(d) For each anaerobic wastewater treatment process and anaerobic digester from which some biogas is recovered, you must report:

1. Annual quantity of CH$_4$ recovered from the anaerobic process calculated using Equation II–4 of this subpart.
2. Cumulative volumetric biogas flow for each week that biogas is collected for destruction.
3. Weekly average temperature for each week at which flow is measured for biogas collected for destruction.
4. Weekly average temperature for each week at which flow is measured for biogas collected for destruction, or statement that temperature is incorporated into monitoring equipment internal calculations.
5. Whether flow was measured on a wet or dry basis, whether CH$_4$ concentration was measured on a wet or dry basis, and if required for Equation II–4 of this subpart, weekly average moisture content for each week at which flow is measured for biogas collected for destruction, or statement that moisture content is incorporated into monitoring equipment internal calculations.
6. Weekly average pressure for each week at which flow is measured for biogas collected for destruction, or...
statement that pressure is incorporated into monitoring equipment internal calculations.

(7) \( \text{CH}_4 \) collection efficiency (CE) used in Equation II–5 of this subpart.

(8) Whether destruction occurs at the facility or off-site. If destruction occurs at the facility, also report whether a back-up destruction device is present at the facility, the annual operating hours for the primary destruction device, the annual operating hours for the back-up destruction device (if present), the destruction efficiency for the primary destruction device, and the destruction efficiency for the backup destruction device (if present).

(9) For each anaerobic process from which some biogas is recovered, you must report the annual \( \text{CH}_4 \) emissions, as calculated by Equation II–6 of this subpart.

(e) The total mass of \( \text{CH}_4 \) emitted from all anaerobic processes from which biogas is not recovered (calculated in Equation II–3 of this subpart) and from all anaerobic processes from which some biogas is recovered (calculated in Equation II–6 of this subpart) using Equation II–7 of this subpart.

§ 98.357 Records that must be retained.

In addition to the information required by §98.3(g), you must retain the calibration records for all monitoring equipment, including the method or manufacturer’s specification used for calibration.

§ 98.358 Definitions.

Except as provided below, all terms used in this subpart have the same meaning given in the CAA and subpart A of this part.

\textit{Biogas} means the combination of \( \text{CO}_2, \text{CH}_4, \) and other gases produced by the biological breakdown of organic matter in the absence of oxygen.

\textit{Ethanol production} means an operation that produces ethanol from the fermentation of sugar, starch, grain, or cellulosic biomass feedstocks, or the production of ethanol synthetically from petrochemical feedstocks, such as ethylene or other chemicals.

\textit{Food processing} means an operation used to manufacture or process meat, poultry, fruits, and/or vegetables as defined under NAICS 3116 (Meat Product Manufacturing) or NAICS 3114 (Fruit and Vegetable Preserving and Specialty Food Manufacturing). For information on NAICS codes, see \url{http://www.census.gov/eos/www/naics/}.

\textit{Industrial wastewater} means water containing wastes from an industrial process. Industrial wastewater includes water which comes into direct contact with or results from the storage, production, or use of any raw material, intermediate product, finished product, by-product, or waste product. Examples of industrial wastewater include, but are not limited to, paper mill white water, wastewater from equipment cleaning, wastewater from air pollution control devices, rinse water, contaminated stormwater, and contaminated cooling water.

\textit{Industrial wastewater treatment sludge} means solid or semi-solid material resulting from the treatment of industrial wastewater, including but not limited to biosolids, screenings, grit, scum, and settled solids.

\textit{Wastewater treatment system} means the collection of all processes that treat or remove pollutants and contaminants, such as soluble organic matter, suspended solids, pathogenic organisms, and chemicals from wastewater prior to its reuse or discharge from the facility.

\begin{table}[h]
\centering
\begin{tabular}{|l|c|l|}
\hline
Factors & Default value & Units \\
\hline
\( B_0 \) — for facilities monitoring COD & 0.25 & Kg \text{CH}_4/\text{kg COD} \\
\( B_0 \) — for facilities monitoring BOD & 0.60 & Kg \text{CH}_4/\text{kg BOD} \\
MCF—anaerobic reactor & 0.8 & Fraction. \\
MCF—anaerobic deep lagoon (depth more than 2 m) & 0.8 & Fraction. \\
MCF—anaerobic shallow lagoon (depth less than 2 m) & 0.2 & Fraction. \\
\hline
\end{tabular}
\caption{TABLE II–1 TO SUBPART II—EMISSION FACTORS}
\end{table}
Subpart JJ—Manure Management

§ 98.360 Definition of the source category.

(a) This source category consists of livestock facilities with manure management systems that emit 25,000 metric tons CO$_2$e or more per year.

(1) Table JJ–1 presents the minimum average annual animal population by animal group that is estimated to emit 25,000 metric tons CO$_2$e or more per year. Facilities with an average annual animal population, as described in §98.363(a)(1) and (2), below those listed in Table JJ–1 do not need to report under this rule. A facility with an annual animal population that exceeds those listed in Table JJ–1 should conduct a more thorough analysis to determine applicability.

(2) (i) If a facility has more than one animal group present (e.g., swine and poultry), the facility must determine if they are required to report by calculating the combined animal group factor (CAGF) using equation JJ–1:

\[
\text{CAGF} = \sum_{\text{Animal Groups}} \left( \frac{\text{AAAP}_{AG, \text{Facility}}}{\text{APTI}_{AG}} \right)
\]

(Eq. JJ–1)

Where:

- CAGF = Combined Animal Group Factor
- AAAP$_{AG, \text{Facility}}$ = Average annual animal population at the facility, by animal group
- APTI$_{AG}$ = Animal population threshold level, as specified in Table JJ–1 of this section

(ii) If the calculated CAGF for a facility is less than 1, the facility is not required to report under this rule. If the CAGF is equal to or greater than 1, the facility must use more detailed applicability tables and tools to determine if they are required to report under this rule.

(b) A manure management system (MMS) is a system that stabilizes and/or stores livestock manure, litter, or manure wastewater in one or more of the following system components: Uncovered anaerobic lagoons, liquid/slurry systems with and without crust covers (including but not limited to ponds and tanks), storage pits, digesters, solid manure storage, dry lots (including feedlots), high-rise houses for poultry production (poultry without litter), poultry production with litter, deep bedding systems for cattle and swine, manure composting, and aerobic treatment.

(c) This source category does not include system components at a livestock facility that are unrelated to the stabilization and/or storage of manure such as daily spread or pasture/range/paddock systems or land application activities or any method of manure utilization that is not listed in §98.360(b).

(d) This source category does not include manure management activities located off site from a livestock facility or off-site manure composting operations.

§ 98.361 Reporting threshold.

Livestock facilities must report GHG emissions under this subpart if the facility meets the reporting threshold as defined in 98.360(a) above, contains a manure management system as defined in 98.360(b) above, and meets the requirements of §98.2(a)(1).
§ 98.362 GHGs to report.

(a) Livestock facilities must report annual aggregate CH₄ and N₂O emissions for the following MMS components at the facility:

(1) Uncovered anaerobic lagoons.
(2) Liquid/slurry systems (with and without crust covers, and including but not limited to ponds and tanks).
(3) Storage pits.
(4) Digesters, including covered anaerobic lagoons.
(5) Solid manure storage.
(6) Dry lots, including feedlots.
(7) High-rise houses for poultry production (poultry without litter)
(8) Poultry production with litter.
(9) Deep bedding systems for cattle and swine.
(10) Manure composting.

(b) A livestock facility that is subject to this rule only because of emissions from manure management system components is not required to report emissions from subparts C through PP (other than subpart JJ) of this part.

(c) A livestock facility that is subject to this part because of emissions from source categories described in subparts C through PP of this part is not required to report emissions under subpart JJ of this part unless emissions from manure management systems are 25,000 metric tons CO₂e per year or more.

§ 98.363 Calculating GHG emissions.

(a) For all manure management system components listed in 98.360(b) except digesters, estimate the annual CH₄ emissions and sum for all the components to obtain total emissions from the manure management system for all animal types using Equation JJ–1.

\[
\text{CH}_4 \text{ Emissions}_{\text{MMS}} (\text{metric tons/yr}) = \sum_{\text{animal type}} \left[ \sum_{\text{MMS component}} \left( \text{TVS}_{\text{AT}} \times \text{VS}_{\text{MMSC}} \times (1 - \text{VS}_{\text{ss}}) \times 365 \text{ days/yr} \times (B_{0})_{\text{AT}} \times \text{MCF}_{\text{MMSC}} \right) \times 0.662 \text{ kg CH}_4/\text{m}^3 \times 1 \text{ metric ton/1000 kg} \right]
\]

Where:
- \text{MMS component} = Manure management systems component.
- \text{TVS}_{\text{AT}} = Total volatile solids excreted by animal type, calculated using Equation JJ–3 of this section (kg/day).
- \text{VS}_{\text{MMSC}} = Fraction of the total manure for each animal type that is managed in MMS component MMSC, assumed to be equivalent to the fraction of VS in each MMS component.
- \text{VS}_{\text{ss}} = Volatile solids removal through solid separation; if solid separation occurs prior to the MMS component, use a default value from Table JJ–4 of this section; if no solid separation occurs, this value is set to 0.
- \text{MCF}_{\text{MMSC}} = CH₄ conversion factor for the MMS component, as specified in Table JJ–5 of this section (decimal).

(b) A livestock facility that is subject to this rule only because of emissions from manure management system components is not required to report emissions from subparts C through PP (other than subpart JJ) of this part.

(c) A livestock facility that is subject to this part because of emissions from source categories described in subparts C through PP of this part is not required to report emissions under subpart JJ of this part unless emissions from manure management systems are 25,000 metric tons CO₂e per year or more.

\[
\text{TVS}_{\text{AT}} = \text{Population}_{\text{AT}} \times \text{TAM}_{\text{AT}} \times \text{VS}_{\text{AT}}/1000
\]

Where:
- \text{TVS}_{\text{AT}} = Daily total volatile solids excreted per animal type (kg/day).
- \text{Population}_{\text{AT}} = Average annual animal population contributing manure to the manure management system by animal type (head) (see description in \$98.363(a)(i) and (ii) below).
- TAM_{AT} = Typical animal mass for each animal type, using either default values in Table JJ–2 of this section or farm-specific data (kg/head).
- \text{VS}_{\text{AT}} = Volatile solids excretion rate for each animal type, using default values in Table JJ–2 or JJ–3 of this section (kg VS/day/1000 kg animal mass).

(1) Average annual animal populations for static populations (e.g., dairy cows, breeding swine, layers) must be estimated by performing an animal inventory or review of facility records once per reporting year.
(2) Average annual animal populations for growing populations (meat animals such as beef cattle, market swine, broilers, and turkeys) must be estimated each year using the average number of days each animal is kept at the facility and the number of animals produced annually, and an equation similar or equal to Equation JJ-4 below, adapted from Equation 10.1 in 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Volume 4, Chapter 10.

\[
\text{Population}_{AT} = \text{Days onsite}_{AT} \times \left( \frac{\text{NAPA}_{AT}}{365} \right) \quad (\text{Eq. JJ-4})
\]

Where:
- Population\(_{AT}\) = Average annual animal population (by animal type).
- Days onsite\(_{AT}\) = Average number of days the animal is kept at the facility, by animal type.
- NAPA\(_{AT}\) = Number of animals produced annually, by animal type.

(b) For each digester, calculate the total amount of CH\(_4\) emissions, and then sum the emissions from all digesters, as shown in Equation JJ-5 of this section.

\[
\text{H}_4 \text{ Emissions}_{AD} = \sum_{1}^{\text{AD}} (\text{CH}_4\text{C} - \text{CH}_4\text{D} + \text{CH}_4\text{L}) \quad (\text{Eq. JJ-5})
\]

Where:
- CH\(_4\text{Emissions}_{AD}\) = CH\(_4\) emissions from anaerobic digestion (metric tons CH\(_4\)/yr).
- AD = Number of anaerobic digesters at the manure management facility.
- CH\(_4\text{C}\) = CH\(_4\) flow to digester combustion device, calculated using Equation JJ-6 of this section (metric tons CH\(_4\)/yr).
- CH\(_4\text{D}\) = CH\(_4\) destruction at digesters, calculated using Equation JJ-11 of this section (metric tons CH\(_4\)/yr).
- CH\(_4\text{L}\) = Leakage at digesters calculated using Equation JJ-12 of this section (metric tons CH\(_4\)/yr).

(1) For each digester, calculate the annual CH\(_4\) flow to the combustion device (CH\(_4\)C) using Equation JJ-6 of this section. A fully integrated system that directly reports the quantity of CH\(_4\) flow to the digester combustion device requires only summing the results of all monitoring periods for a given year to obtain CH\(_4\)C.

\[
\text{CH}_4\text{C} = \left( V \times \frac{C}{100\%} \times 0.0423 \times \frac{520^\circ R}{T} \times \frac{P}{1 \text{ atm}} \times 0.454 \right) \times 1,000 \text{ pounds} \quad (\text{Eq. JJ-6})
\]

Where:
- CH\(_4\text{C}\) = CH\(_4\) flow to digester combustion device (metric tons CH\(_4\)/yr).
- V = Average annual volumetric flow rate, calculated in Equation JJ-7 of this subsection (cubic feet CH\(_4\)/yr).
- C = Average annual CH\(_4\) concentration of digester gas, calculated in Equation JJ-8 of this section (%, wet basis).
- 0.0423 = Density of CH\(_4\), lb/ft\(^3\) (at 520 °R or 60 °F and 1 atm).
- T = Average annual temperature at which flow is measured, calculated in Equation JJ-9 of this section (°R).
- P = Average annual pressure at which flow is measured, calculated in Equation JJ-10 of this section (atm).
(2) For each digester, calculate the average annual volumetric flow rate, \(\text{CH}_4\) concentration of digester gas, temperature, and pressure at which flow are measured using Equations JJ–7 through JJ–10 of this section.

\[
V = \frac{\sum_{n=1}^{\text{OD}} \left( V_n \times 1,440 \text{ minutes} \right)}{\text{OD}} \quad \text{(Eq. JJ-7)}
\]

Where:
- \(V\) = Average annual volumetric flow rate (cubic feet \(\text{CH}_4\)/yr).
- \(\text{OD}\) = Operating days, number of days per year that the digester was operating (days/yr).
- \(V_n\) = Daily average volumetric flow rate for day \(n\), as determined from daily monitoring as specified in §98.364 (acfm).

\[
C = \frac{\sum_{n=1}^{\text{OD}} C_n}{\text{OD}} \quad \text{(Eq. JJ-8)}
\]

Where:
- \(C\) = Average annual \(\text{CH}_4\) concentration of digester gas (% wet basis).
- \(\text{OD}\) = Operating days, number of days per year that the digester was operating (days/yr).
- \(C_n\) = Average daily \(\text{CH}_4\) concentration of digester gas for day \(n\), as determined from daily monitoring as specified in §98.364 (%, wet basis).

\[
T = \frac{\sum_{n=1}^{\text{OD}} T_n}{\text{OD}} \quad \text{(Eq. JJ-9)}
\]

Where:
- \(T\) = Average annual temperature at which flow is measured (°R).
- \(\text{OD}\) = Operating days, number of days per year that the digester was operating (days/yr).
- \(T_n\) = Temperature at which flow is measured for day \(n\) (°R).

\[
P = \frac{\sum_{n=1}^{\text{OD}} P_n}{\text{OD}} \quad \text{(Eq. JJ-10)}
\]

Where:
- \(P\) = Average annual pressure at which flow is measured (atm).
- \(\text{OD}\) = Operating days, number of days per year that the digester was operating (days/yr).
- \(P_n\) = Pressure at which flow is measured for day \(n\) (atm).

(3) For each digester, calculate the \(\text{CH}_4\) destruction at the digester combustion device using Equation JJ–11 of this section.

\[
\text{CH}_4D = \text{CH}_4C \times \text{DE} \times \text{OH/Hours} \quad \text{(Eq. JJ-11)}
\]

Where:
- \(\text{CH}_4D\) = \(\text{CH}_4\) destruction at digester combustion device (metric tons/yr).
- \(\text{CH}_4C\) = Annual quantity of \(\text{CH}_4\) flow to digester combustion device, as calculated in Equation JJ–6 of this section (metric tons \(\text{CH}_4\)).
- \(\text{DE}\) = \(\text{CH}_4\) destruction efficiency from flaring or burning in engine (lesser of manufacturer’s specified destruction efficiency and 0.99). If the gas is transported off-site for destruction, use \(\text{DE} = 1\).
- \(\text{OH}\) = Number of hours combustion device is functioning in reporting year.
- \(\text{Hours}\) = Hours in reporting year.

(4) For each digester, calculate the \(\text{CH}_4\) leakage using Equation JJ–12 of this section.
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CH₄L = CH₄C × \left( \frac{1}{CE} - 1 \right) \quad (\text{Eq. JJ-12})

Where:
- CH₄L = Leakage at digesters (metric tons/year).
- CH₄C = Annual quantity of CH₄ flow to digester combustion device, as calculated in Equation JJ-6 of this section (metric tons CH₄).
- CE = CH₄ collection efficiency of anaerobic digester, as specified in Table JJ-6 of this section (decimal).

(c) For each MMS component, estimate the annual N₂O emissions and sum for all MMS components to obtain total emissions from the manure management system for all animal types using Equation JJ-13 of this section.

Direct N₂O Emissions (metric tons/year) = \sum_{\text{animal types}} \left[ \sum_{\text{MMS components}} N_{\text{ex,MMSC}} \times N_{\text{ex,MMSC}} \right] (\text{Eq. JJ-13})

\times (1 - N_{ss}) \times EF_{MMSC} \times 365 \text{ days/yr} \times 44 \text{ N}_2\text{O}/28 \text{ N}_2\text{O} \times N \times 1 \text{ metric ton}/1000 \text{ kg}

Where:
- N_{\text{ex,AT}} = Daily total nitrogen excreted per animal type, calculated using Equation JJ-14 of this section (kg N/day).
- N_{\text{ex,MMSC}} = Fraction of the total manure for each animal type that is managed in MMS component MMSC, assumed to be equivalent to the fraction of N ex in each MMS component.
- N_{ss} = Nitrogen removal through solid separation; if solid separation occurs prior to the MMS component, use a default value from Table JJ-4 of this section; if no solid separation occurs, this value is set to 0.
- EF_{MMSC} = Emission factor for MMS component, as specified in Table JJ-7 of this section (kg N₂O-N/kg N).

\text{N}_{\text{ex,AT}} = \text{Population}_{\text{AT}} \times \text{TAM}_{\text{AT}} \times N_{\text{AT}}/1000 \quad (\text{Eq. JJ-14})

Where:
- N_{\text{ex,AT}} = Total nitrogen excreted per animal type (kg/day).
- Population_{\text{AT}} = Average annual animal population contributing manure to the manure management system by animal type (head) (see description in §98.363(a)(i) and (ii)).
- TAM_{\text{AT}} = Typical animal mass by animal type, using either default values in Table JJ-2 of this section or farm-specific data (kg/head).
- JJ-2 of this section or farm-specific data (kg/head).
- N_{\text{AT}} = Nitrogen excretion rate by animal type, using default values in Tables JJ-2 or JJ-3 of this section (kg N/day/1000 kg animal mass).

(d) Estimate the annual total facility emissions using Equation JJ-15 of this section.

Total Emissions (metric tons CO₂e/yr) = \left[ (\text{CH₄ emissions}_{\text{MMSC}} + \text{CH₄ emissions}_{\text{AD}}) \times 21 \right] \times \left[ \text{Direct N₂O emissions} \times 310 \right] \quad (\text{Eq. JJ-15})

Where:
- CH₄ emissions_{MMSC} = From Equation JJ-2 of this section.
- CH₄ emissions_{AD} = From Equation JJ-5 of this section.
- 21 = Global Warming Potential of CH₄.
- 310 = Global Warming Potential of N₂O.
- Direct N₂O emissions = From Equation JJ-13 of this section.
§ 98.364 Monitoring and QA/QC requirements.

(a) Perform an annual animal inventory or review of facility records (for static populations) or population calculation (for growing populations) to determine the average annual animal population for each animal type (see description in §98.363(a)(1) and (2)).

(b) Perform an analysis on your operation to determine the fraction of total manure by weight for each animal type that is managed in each on-site manure management system component. If your system changes from previous reporting periods, you must reevaluate the fraction of total manure managed in each system component.

(c) The CH$_4$ concentration of gas from digesters must be determined using ASTM D1946–90 (Reapproved 2006) Standard Practice for Analysis of Reformed Gas by Gas Chromatography (incorporated by reference see §98.7).

All gas composition monitors shall be calibrated prior to the first reporting year for biogas methane and carbon dioxide content using ASTM D1946–90 (Reapproved 2006) Standard Practice for Analysis of Reformed Gas by Gas Chromatography (incorporated by reference see §98.7) and recalibrated either annually or at the minimum frequency specified by the manufacturer, whichever is more frequent, or whenever the error in the midrange calibration check exceeds ±10 percent. All monitors shall be maintained as specified by the manufacturer.

(d) All temperature and pressure monitors must be calibrated using the procedures and frequencies specified by the manufacturer. All equipment (temperature and pressure monitors) shall be maintained as specified by the manufacturer.

(e) For digesters with gas collection systems, install, operate, maintain, and calibrate a gas flow meter capable of measuring the volumetric flow rate to provide data for the GHG emissions calculations using the applicable methods specified in paragraphs (e)(1) through (e)(6) of this section as specified by the manufacturer.

(f) If applicable, the owner or operator shall document the procedures used to ensure the accuracy of gas flow rate, gas composition, temperature, and pressure measurements. These procedures include, but are not limited to, calibration of fuel flow meters and other measurement devices. The estimated accuracy of measurements made with these devices shall also be recorded, and the technical basis for these estimates shall be provided.

(g) Each gas flow meter shall be calibrated prior to the first reporting year and recalibrated either annually or at the minimum frequency specified by the manufacturer, whichever is more frequent. Each gas flow meter must have a rated accuracy of ±5 percent or lower and be capable of correcting for the temperature and pressure and, if the gas composition monitor determines CH$_4$ concentration on a dry basis, moisture content.

§ 98.365 Procedures for estimating missing data.

(a) A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable (e.g., if a meter malfunctions during unit operation or if a required fuel sample is not taken), a substitute data value for the missing parameter shall be used in the calculations, according to the requirements in paragraph (b) of this section.

§ 98.366  Data reporting requirements.

(a) In addition to the information required by §98.3(c), each annual report must contain the following information:

(1) List of manure management system components at the facility.

(2) Fraction of manure from each animal type that is handled in each manure management system component.

(3) Average annual animal population (for each animal type) for static populations or the results of Equation JJ–4 for growing populations.

(4) Average number of days that growing animals are kept at the facility (for each animal type).

(5) The number of animals produced annually for growing populations (for each animal type).

(6) Typical animal mass (for each animal type).

(7) Total facility emissions (results of Equation JJ–15).

(8) CH₄ emissions from manure management system components listed in §98.360(b), except digesters (results of Equation JJ–2).

(9) VS value used (for each animal type).

(10) B₀ value used (for each animal type).

(11) Methane conversion factor used for each MMS component.

(12) Average ambient temperature used to select each methane conversion factor.

(13) N₂O emissions (results of Equation JJ–13).

(14) N value used for each animal type.

(15) N₂O emission factor selected for each MMS component.

(b) Facilities with anaerobic digesters must also report:

(1) CH₄ emissions from anaerobic digesters (results of Equation JJ–5).

(2) CH₄ flow to the digester combustion device for each digester (results of Equation JJ–6, or value from fully integrated monitoring system as described in 98.363(b)).

(3) CH₄ destruction for each digester (results of Equation JJ–11).

(4) CH₄ leakage for each digester (results of Equation JJ–12).

(5) Total annual volumetric biogas flow for each digester (results of Equation JJ–7).

(6) Average annual CH₄ concentration for each digester (results of Equation JJ–8).

(7) Average annual temperature at which gas flow is measured for each digester (results of Equation JJ–9).

(8) Average annual gas flow pressure at which gas flow is measured for each digester (results of Equation JJ–10).

(9) Destruction efficiency used for each digester.

(10) Number of days per year that each digester was operating.

(11) Collection efficiency used for each digester.

§ 98.367  Records that must be retained.

In addition to the information required by §98.3(g), you must retain the calibration records for all monitoring equipment, including the method or manufacturer's specification used for calibration.

§ 98.368  Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

TABLE JJ–1 TO SUBPART JJ OF PART 98—ANIMAL POPULATION THRESHOLD LEVEL BELOW WHICH FACILITIES ARE NOT REQUIRED TO REPORT EMISSIONS UNDER SUBPART JJ

<table>
<thead>
<tr>
<th>Animal group</th>
<th>Average annual animal population (Head)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beef</td>
<td>29,300</td>
</tr>
</tbody>
</table>
Environmental Protection Agency

Pt. 98, Subpt. JJ, Table JJ–3

Animal group | Average annual animal population (Head)
---|---
Dairy | 3,200
Swine | 34,100
Poultry: Layers | 723,600
Broilers | 38,160,000
Turkeys | 7,710,000

1 The threshold head populations in this table were calculated using the most conservative assumptions (high VS and N values, maximum ambient temperatures, and the application of an uncertainty factor) to ensure that facilities at or near the 25,000 metric ton CO₂-e threshold level were not excluded from reporting.

2 For facilities with more than one animal group present refer to § 98.360 (2) to estimate the combined animal group factor (CAGF), which is used to determine if a facility may be required to report.

3 For all animal groups except dairy, the average annual animal population represents the total number of animals present at the facility. For dairy facilities, the average annual animal population represents the number of mature dairy cows present at the facility (note that heifers and calves were included in the emission estimates for dairy facilities using the assumption that the average annual animal population of heifers and calves at dairy facilities are equal to 30 percent of the mature dairy cow average annual animal population, therefore the average annual population for dairy facilities should not include heifers and calves, only dairy cows).

### Table JJ–2 to Subpart JJ of Part 98—Waste Characteristics Data

<table>
<thead>
<tr>
<th>Animal type</th>
<th>Typical animal mass (kg)</th>
<th>Volatile solids excretion rate (kg VS/day/1000 kg animal mass)</th>
<th>Nitrogen excretion rate (kg N/day/1000 kg animal mass)</th>
<th>Maximum methane generation potential, B₄ (m² CH₄/kg VS added)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dairy Cows</td>
<td>604</td>
<td>See Table JJ–3</td>
<td>See Table JJ–3</td>
<td>0.24</td>
</tr>
<tr>
<td>Dairy Heifers</td>
<td>476</td>
<td>See Table JJ–3</td>
<td>See Table JJ–3</td>
<td>0.17</td>
</tr>
<tr>
<td>Dairy Calves</td>
<td>118</td>
<td>6.41</td>
<td>0.30</td>
<td>0.17</td>
</tr>
<tr>
<td>Feedlot Steers</td>
<td>420</td>
<td>See Table JJ–3</td>
<td>See Table JJ–3</td>
<td>0.33</td>
</tr>
<tr>
<td>Feedlot heifers</td>
<td>420</td>
<td>See Table JJ–3</td>
<td>See Table JJ–3</td>
<td>0.33</td>
</tr>
<tr>
<td>Market Swine &lt;60 lbs</td>
<td>16</td>
<td>8.80</td>
<td>0.60</td>
<td>0.48</td>
</tr>
<tr>
<td>Market Swine 60–119 lbs</td>
<td>41</td>
<td>5.40</td>
<td>0.42</td>
<td>0.48</td>
</tr>
<tr>
<td>Market Swine 120–179 lbs</td>
<td>68</td>
<td>5.40</td>
<td>0.42</td>
<td>0.48</td>
</tr>
<tr>
<td>Market Swine &gt;180 lbs</td>
<td>91</td>
<td>5.40</td>
<td>0.42</td>
<td>0.48</td>
</tr>
<tr>
<td>Breeding Swine</td>
<td>198</td>
<td>2.60</td>
<td>0.24</td>
<td>0.48</td>
</tr>
<tr>
<td>Feedlot Sheep</td>
<td>25</td>
<td>9.20</td>
<td>0.42</td>
<td>0.36</td>
</tr>
<tr>
<td>Goats</td>
<td>64</td>
<td>9.50</td>
<td>0.45</td>
<td>0.34</td>
</tr>
<tr>
<td>Hens &gt;= 1 yr</td>
<td>450</td>
<td>10.00</td>
<td>0.30</td>
<td>0.33</td>
</tr>
<tr>
<td>Hens 18–24 mo</td>
<td>1.8</td>
<td>10.09</td>
<td>0.83</td>
<td>0.39</td>
</tr>
<tr>
<td>Pullets</td>
<td>1.8</td>
<td>10.09</td>
<td>0.83</td>
<td>0.39</td>
</tr>
<tr>
<td>Other Chickens</td>
<td>1.8</td>
<td>10.80</td>
<td>0.83</td>
<td>0.39</td>
</tr>
<tr>
<td>Broilers</td>
<td>0.9</td>
<td>15.00</td>
<td>1.10</td>
<td>0.36</td>
</tr>
<tr>
<td>Turkeys</td>
<td>6.8</td>
<td>9.70</td>
<td>0.74</td>
<td>0.36</td>
</tr>
</tbody>
</table>

### Table JJ–3 to Subpart JJ of Part 98—State-Specific Volatile Solids (VS) and Nitrogen (N) Excretion Rates for Cattle

<table>
<thead>
<tr>
<th>State</th>
<th>Volatile solids excretion rate (kg VS/day/1000 kg animal mass)</th>
<th>Nitrogen excretion rate (kg N/day/1000 kg animal mass)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>8.40</td>
<td>0.50</td>
</tr>
<tr>
<td>Alaska</td>
<td>7.30</td>
<td>0.45</td>
</tr>
<tr>
<td>Arizona</td>
<td>10.37</td>
<td>0.58</td>
</tr>
<tr>
<td>Arkansas</td>
<td>7.59</td>
<td>0.46</td>
</tr>
<tr>
<td>California</td>
<td>10.02</td>
<td>0.56</td>
</tr>
<tr>
<td>Colorado</td>
<td>10.25</td>
<td>0.58</td>
</tr>
<tr>
<td>Connecticut</td>
<td>9.22</td>
<td>0.53</td>
</tr>
<tr>
<td>Delaware</td>
<td>8.63</td>
<td>0.51</td>
</tr>
<tr>
<td>Florida</td>
<td>8.90</td>
<td>0.52</td>
</tr>
<tr>
<td>Georgia</td>
<td>9.07</td>
<td>0.53</td>
</tr>
<tr>
<td>Idaho</td>
<td>10.02</td>
<td>0.54</td>
</tr>
<tr>
<td>Illinois</td>
<td>9.07</td>
<td>0.52</td>
</tr>
<tr>
<td>Indiana</td>
<td>9.58</td>
<td>0.54</td>
</tr>
<tr>
<td>Iowa</td>
<td>9.46</td>
<td>0.54</td>
</tr>
<tr>
<td>Kansas</td>
<td>9.63</td>
<td>0.55</td>
</tr>
<tr>
<td>Kentucky</td>
<td>7.89</td>
<td>0.48</td>
</tr>
</tbody>
</table>
## Table JJ–4 to Subpart JJ of Part 98—Volatile Solids and Nitrogen Removal Through Solids Separation

<table>
<thead>
<tr>
<th>State</th>
<th>Volatile solids excretion rate (kg VS/day/1000 kg animal mass)</th>
<th>Nitrogen excretion rate (kg VS/day/1000 kg animal mass)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Dairy cows</td>
<td>Dairy heifers</td>
</tr>
<tr>
<td>Louisiana</td>
<td>7.39</td>
<td>8.35</td>
</tr>
<tr>
<td>Maine</td>
<td>8.59</td>
<td>8.35</td>
</tr>
<tr>
<td>Maryland</td>
<td>9.02</td>
<td>8.35</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>8.63</td>
<td>8.35</td>
</tr>
<tr>
<td>Michigan</td>
<td>10.05</td>
<td>8.35</td>
</tr>
<tr>
<td>Minnesota</td>
<td>9.17</td>
<td>8.35</td>
</tr>
<tr>
<td>Mississippi</td>
<td>8.19</td>
<td>8.35</td>
</tr>
<tr>
<td>Missouri</td>
<td>8.02</td>
<td>8.35</td>
</tr>
<tr>
<td>Montana</td>
<td>9.03</td>
<td>8.35</td>
</tr>
<tr>
<td>Nebraska</td>
<td>9.09</td>
<td>8.35</td>
</tr>
<tr>
<td>Nevada</td>
<td>9.65</td>
<td>8.35</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>9.44</td>
<td>8.35</td>
</tr>
<tr>
<td>New Jersey</td>
<td>8.51</td>
<td>8.35</td>
</tr>
<tr>
<td>New Mexico</td>
<td>10.34</td>
<td>8.35</td>
</tr>
<tr>
<td>New York</td>
<td>9.42</td>
<td>8.35</td>
</tr>
<tr>
<td>North Carolina</td>
<td>9.38</td>
<td>8.35</td>
</tr>
<tr>
<td>North Dakota</td>
<td>8.40</td>
<td>8.35</td>
</tr>
<tr>
<td>Ohio</td>
<td>9.01</td>
<td>8.35</td>
</tr>
<tr>
<td>Oklahoma</td>
<td>8.58</td>
<td>8.35</td>
</tr>
<tr>
<td>Oregon</td>
<td>9.40</td>
<td>8.35</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>9.26</td>
<td>8.35</td>
</tr>
<tr>
<td>Rhode Island</td>
<td>8.94</td>
<td>8.35</td>
</tr>
<tr>
<td>South Carolina</td>
<td>9.05</td>
<td>8.35</td>
</tr>
<tr>
<td>South Dakota</td>
<td>9.45</td>
<td>8.35</td>
</tr>
<tr>
<td>Tennessee</td>
<td>8.60</td>
<td>8.35</td>
</tr>
<tr>
<td>Texas</td>
<td>9.51</td>
<td>8.35</td>
</tr>
<tr>
<td>Utah</td>
<td>9.70</td>
<td>8.35</td>
</tr>
<tr>
<td>Vermont</td>
<td>9.03</td>
<td>8.35</td>
</tr>
<tr>
<td>Virginia</td>
<td>9.02</td>
<td>8.35</td>
</tr>
<tr>
<td>Washington</td>
<td>10.36</td>
<td>8.35</td>
</tr>
<tr>
<td>West Virginia</td>
<td>8.13</td>
<td>8.35</td>
</tr>
<tr>
<td>Wisconsin</td>
<td>9.34</td>
<td>8.35</td>
</tr>
<tr>
<td>Wyoming</td>
<td>9.29</td>
<td>8.35</td>
</tr>
</tbody>
</table>

## Table JJ–4 to Subpart JJ of Part 98—Volatile Solids and Nitrogen Removal Through Solids Separation

<table>
<thead>
<tr>
<th>Type of solids separation</th>
<th>Volatile solids removal (decimal)</th>
<th>Nitrogen removal (decimal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gravity</td>
<td>0.60</td>
<td>0.60</td>
</tr>
<tr>
<td>Mechanical</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stationary Screen</td>
<td>0.20</td>
<td>0.10</td>
</tr>
<tr>
<td>Vibrating Screen</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>Screw Press</td>
<td>0.25</td>
<td>0.15</td>
</tr>
<tr>
<td>Centrifuge</td>
<td>0.50</td>
<td>0.25</td>
</tr>
<tr>
<td>Roller drum</td>
<td>0.25</td>
<td>0.15</td>
</tr>
<tr>
<td>Belt press/screen</td>
<td>0.50</td>
<td>0.30</td>
</tr>
</tbody>
</table>

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**Table JJ–6 to Subpart JJ of Part 98—Collection Efficiencies of Anaerobic Digesters**

<table>
<thead>
<tr>
<th>Anaerobic digester type</th>
<th>Cover type</th>
<th>Methane collection efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Covered anaerobic lagoon (biogas capture)</td>
<td>Bank to bank, impermeable</td>
<td>0.975</td>
</tr>
<tr>
<td>Complete mix, fixed film, or plug flow digester</td>
<td>Modular, impermeable</td>
<td>0.70</td>
</tr>
<tr>
<td></td>
<td>Enclosed Vessel</td>
<td>0.99</td>
</tr>
</tbody>
</table>
TABLE JJ–7 TO SUBPART JJ OF PART 98—
NITROUS OXIDE EMISSION FACTORS (KG N₂O–N/KG KJDL N)

<table>
<thead>
<tr>
<th>Manure management system component</th>
<th>N₂O emission factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncovered anaerobic lagoon</td>
<td>0</td>
</tr>
<tr>
<td>Liquid/Slurry (with crust cover)</td>
<td>0.005</td>
</tr>
<tr>
<td>Liquid/Slurry (without crust cover)</td>
<td>0</td>
</tr>
<tr>
<td>Storage pits</td>
<td>0.002</td>
</tr>
<tr>
<td>Digesters</td>
<td>0</td>
</tr>
<tr>
<td>Solid manure storage</td>
<td>0.006</td>
</tr>
<tr>
<td>Dry lots (including feedlots)</td>
<td>0.02</td>
</tr>
<tr>
<td>High-rise house for poultry (poultry without litter)</td>
<td>0.001</td>
</tr>
<tr>
<td>Poultry production with litter</td>
<td>0.001</td>
</tr>
<tr>
<td>Deep bedding for cattle and swine (active mix)</td>
<td>0.07</td>
</tr>
<tr>
<td>Deep bedding for cattle and swine (no mix)</td>
<td>0.01</td>
</tr>
<tr>
<td>Manure Composting (in vessel)</td>
<td>0.006</td>
</tr>
<tr>
<td>Manure Composting (intensive)</td>
<td>0.1</td>
</tr>
<tr>
<td>Manure Composting (passive)</td>
<td>0.01</td>
</tr>
<tr>
<td>Manure Composting (static)</td>
<td>0.006</td>
</tr>
<tr>
<td>Aerobic Treatment (forced aeration)</td>
<td>0.005</td>
</tr>
<tr>
<td>Aerobic Treatment (natural aeration)</td>
<td>0.01</td>
</tr>
</tbody>
</table>

Subpart KK [Reserved]

Subpart LL—Suppliers of Coal-based Liquid Fuels

§ 98.380 Definition of the source category.

This source category consists of producers, importers, and exporters of products listed in Table MM–1 of subpart MM that are coal-based (coal-to-liquid products).

(a) A producer is the owner or operator of a coal-to-liquids facility. A coal-to-liquids facility is any facility engaged in converting coal into liquid products using a process involving conversion of coal into gas and then into liquids (e.g., Fischer-Tropsch) or conversion of coal directly into liquids (i.e., direct liquefaction).

(b) An importer or exporter shall have the same meaning given in §98.6.

§ 98.381 Reporting threshold.

Any supplier of coal-to-liquid products who meets the requirements of §98.2(a)(4) must report GHG emissions.

§ 98.382 GHGs to report.

You must report the CO₂ emissions that would result from the complete combustion or oxidation of any biomass co-processed with fossil fuel-based feedstocks.

§ 98.383 Calculating GHG emissions.

You must follow the calculation methodologies of §98.393 as if they applied to the appropriate coal-to-liquid product supplier (i.e., calculation methodologies for refiners apply to producers of coal-to-liquid products and calculation methodologies for importers and exporters of petroleum products apply to importers and exporters of coal-to-liquid products).

(a) In calculation methodologies in §98.393 for petroleum products or petroleum-based products, suppliers of coal-to-liquid products shall also include coal-to-liquid products.

(b) In calculation methodologies in §98.393 for non-crude feedstocks or non-crude petroleum feedstocks, producers of coal-to-liquid products shall also include coal-to-liquid products that enter the facility to be further processed or otherwise used on site.

(c) In calculation methodologies in §98.393 for petroleum feedstocks, suppliers of coal-to-liquid products shall also include coal and coal-to-liquid products that enter the facility to be further processed or otherwise used on site.

§ 98.384 Monitoring and QA/QC requirements.

You must follow the monitoring and QA/QC requirements in §98.394 as if they applied to the appropriate coal-to-liquid product supplier. Any monitoring and QA/QC requirement for petroleum products in §98.394 also applies to coal-to-liquid products.

§ 98.385 Procedures for estimating missing data.

You must follow the procedures for estimating missing data in §98.395 as if they applied to the appropriate coal-to-liquid product supplier. Any procedure for estimating missing data for petroleum products in §98.395 also applies to coal-to-liquid products.
§ 98.386 Data reporting requirements.

In addition to the information required by §98.3(c), the following requirements apply:

(a) Producers shall report the following information for each coal-to-liquid facility:

(1) For each product listed in Table MM–1 of subpart MM of this part that enters the coal-to-liquid facility to be further processed or otherwise used on site, report the annual quantity in metric tons or barrels by each quantity measurement standard method or other industry standard practice used. For natural gas liquids, quantity shall reflect the individual components of the product.

(2) For each product listed in Table MM–1 of subpart MM of this part that enters the coal-to-liquid facility to be further processed or otherwise used on site, report the total annual quantity in metric tons or barrels. For natural gas liquids, quantity shall reflect the individual components of the product.

(3) For each feedstock reported in paragraph (a)(2) of this section that was produced by blending a fossil fuel-based product with a biomass-based product, report the percent of the volume reported in paragraph (a)(2) of this section that is fossil fuel-based (excluding any denaturant that may be present in any ethanol product).

(4) Each standard method or other industry standard practice used to measure each quantity reported in paragraph (a)(5) of this section.

(b) For each product (leaving the coal-to-liquid facility) listed in Table MM–1 of subpart MM of this part, report the annual quantity in metric tons or barrels by each quantity measurement standard method or other industry standard practice used. For natural gas liquids, quantity shall reflect the individual components of the product.

(6) For each product (leaving the coal-to-liquid facility) listed in Table MM–1 of subpart MM of this part, report the total annual quantity in metric tons or barrels. For natural gas liquids, quantity shall reflect the individual components of the product.

(7) For each product reported in paragraph (a)(6) of this section that was produced by blending a fossil fuel-based product with a biomass-based product, report the percent of the volume reported in paragraph (a)(6) of this section that is fossil fuel-based (excluding any denaturant that may be present in any ethanol product).

(8) Each standard method or other industry standard practice used to measure each quantity reported in paragraph (a)(5) of this section.

(9) For every feedstock reported in paragraph (a)(2) of this section for which Calculation Methodology 2 of subpart MM of this part was used to determine an emissions factor, report:

(i) The number of samples collected according to §98.394(c).

(ii) The sampling standard method used.

(iii) The carbon share test results in percent mass.

(iv) The standard method used to test carbon share.

(v) The calculated CO₂ emissions factor.

(10) For every non-solid feedstock reported in paragraph (a)(2) of this section for which Calculation Methodology 2 of subpart MM of this part was used to determine an emissions factor, report:

(i) The density test results in metric tons per barrel.

(ii) The standard method used to test density.

(iii) The carbon share test results in percent mass.

(iv) The standard method used to test carbon share.

(v) The calculated CO₂ emissions factor.

Those products that enter the facility, but are not reported in (a)(2), shall not be reported under this paragraph.
(12) For every non-solid product reported in paragraph (a)(6) of this section for which Calculation Methodology 2 of subpart MM of this part was used to determine an emissions factor, report:
(i) The density test results in metric tons per barrel.
(ii) The standard method used to test density.
(13) For each specific type of biomass that enters the coal-to-liquid facility to be co-processed with fossil fuel-based feedstock to produce a product reported in paragraph (a)(6) of this section, report the total annual quantity in metric tons or barrels by each quantity measurement standard method or other industry standard practice used.
(14) For each specific type of biomass that enters the coal-to-liquid facility to be co-processed with fossil fuel-based feedstock to produce a product reported in paragraph (a)(6) of this section, report the total annual quantity in metric tons or barrels.
(15) Each standard method or other industry standard practice used to measure each quantity reported in paragraph (a)(3) of this section.
(16) The CO₂ emissions in metric tons that would result from the complete combustion or oxidation of each feedstock reported in paragraph (a)(2) of this section that were calculated according to §98.393(b) or (h).
(17) The CO₂ emissions in metric tons that would result from the complete combustion or oxidation of each product (leaving the coal-to-liquid facility) reported in paragraph (a)(6) of this section that were calculated according to §98.393(a) or (h).
(18) Annual CO₂ emissions in metric tons that would result from the complete combustion or oxidation of each type of biomass feedstock co-processed with fossil fuel-based feedstocks reported in paragraph (a)(3) of this section, calculated according to §98.393(c).
(19) Annual CO₂ emissions that would result from the complete combustion or oxidation of all products, calculated according to §98.393(d).
(20) Annual quantity of bulk NGLs in metric tons or barrels received for processing during the reporting year.
(b) In addition to the information required by §98.3(c), each importer shall report all of the following information at the corporate level:
(1) For each product listed in Table MM–1 of subpart MM of this part, report the annual quantity in metric tons or barrels by each quantity measurement standard method or other industry standard practice used. For natural gas liquids, quantity shall reflect the individual components of the product.
(2) For each product listed in Table MM–1 of subpart MM of this part, report the total annual quantity in metric tons or barrels. For natural gas liquids, quantity shall reflect the individual components of the product as listed in Table MM–1 of subpart MM of this part.
(3) For each product reported in paragraph (b)(2) of this section that was produced by blending a fossil fuel-based product with a biomass-based product, report the percent of the volume reported in paragraph (b)(2) of this section that is fossil fuel-based (excluding any denaturant that may be present in any ethanol product).
(4) Each standard method or other industry standard practice used to measure each quantity reported in paragraph (b)(1) of this section.
(5) For each product reported in paragraph (b)(2) of this section for which Calculation Methodology 2 of this subpart used was used to determine an emissions factor, report:
(i) The number of samples collected according to §98.394(c)
(ii) The sampling standard method used.
(iii) The carbon share test results in percent mass.
(iv) The standard method used to test carbon share.
(v) The calculated CO₂ emissions factor in metric tons.
(6) For each non-solid product reported in paragraph (b)(2) of this section for which Calculation Methodology 2 of this subpart used was used to determine an emissions factor, report:
(i) The density test results in metric tons per barrel.
(ii) The standard method used to test density.
(7) The CO₂ emissions in metric tons that would result from the complete
combustion or oxidation of each imported product reported in paragraph (b)(2) of this section, calculated according to §98.393(a).

(8) The total sum of CO₂ emissions that would result from the complete combustion or oxidation of all imported products, calculated according to §98.393(e).

(c) In addition to the information required by §98.3(c), each exporter shall report all of the following information at the corporate level:

(1) For each product listed in Table MM–1 of subpart MM of this part, report the annual quantity in metric tons or barrels by each quantity measurement standard method or other industry standard practice used. For natural gas liquids, quantity shall reflect the individual components of the product.

(2) For each product listed in Table MM–1 of subpart MM of this part, report the total annual quantity in metric tons or barrels. For natural gas liquids, quantity shall reflect the individual components of the product.

(3) For each product reported in paragraph (c)(2) of this section that was produced by blending a fossil fuel-based product with a biomass-based product, report the percent of the volume reported in paragraph (c)(2) of this section that is fossil fuel-based (excluding any denaturant that may be present in any ethanol product).

(4) Each standard method or other industry standard practice used to measure each quantity reported in paragraph (c)(1) of this section.

(5) For each product reported in paragraph (c)(2) of this section for which Calculation Methodology 2 of this subpart was used to determine an emissions factor, report:

(i) The number of samples collected according to §98.394(c).

(ii) The sampling standard method used.

(iii) The carbon share test results in percent mass.

(iv) The standard method used to test carbon share.

(v) The calculated CO₂ emissions factor in metric tons.

(6) For each non-solid product reported in paragraph (c)(2) of this section for which Calculation Methodology 2 of this subpart used was used to determine an emissions factor, report:

(i) The density test results in metric tons per barrel.

(ii) The standard method used to test density.

(7) The CO₂ emissions in metric tons that would result from the complete combustion or oxidation of each exported product reported in paragraph (c)(2) of this section, calculated according to §98.393(a).

(d) Blended feedstock and products. (1) Producers, exporters, and importers must report the following information for each blended product and feedstock where emissions were calculated according to §98.393(i):

(i) Volume or mass of each blending component.

(ii) The CO₂ emissions in metric tons that would result from the complete combustion or oxidation of each blended feedstock or product, using Equation MM–12 or Equation MM–13 of §98.393.

(iii) Whether it is a blended feedstock or a blended product.

(2) For a product that enters the facility to be further refined or otherwise used on site that is a blended feedstock, producers must meet the reporting requirements of paragraphs (a)(1) and (a)(2) of this section by reflecting the individual components of the blended feedstock.

(3) For a product that is produced, imported, or exported that is a blended product, producers, importers, and exporters must meet the reporting requirements of paragraphs (a)(5), (a)(6), (b)(1), (b)(2), (c)(1), and (c)(2) of this section, as applicable, by reflecting the individual components of the blended product.

§98.397 Records that must be retained.

You must retain records according to the requirements in §98.397 as if they applied to the appropriate coal-to-liquor product supplier (e.g., retaining...
copies of all reports submitted to EPA under §98.386 and records to support information contained in those reports. Any records for petroleum products that are required to be retained in §98.397 are also required for coal-to-liquid products.

§ 98.388 Definitions.
All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart MM—Suppliers of Petroleum Products

§ 98.390 Definition of the source category.
This source category consists of petroleum refineries and importers and exporters of petroleum products and natural gas liquids as listed in Table MM-1 of this subpart.

(a) A petroleum refinery for the purpose of this subpart is any facility engaged in producing petroleum products through the distillation of crude oil.

(b) A refiner is the owner or operator of a petroleum refinery.

(c) Importer has the same meaning given in §98.6 and includes any entity that imports petroleum products or natural gas liquids as listed in Table MM-1 of this subpart. Any blender or refiner of refined or semi-refined petroleum products shall be considered an importer if it otherwise satisfies the aforementioned definition.

(d) Exporter has the same meaning given in §98.6 and includes any entity that exports petroleum products or natural gas liquids as listed in Table MM-1 of this subpart. Any blender or refiner of refined or semi-refined petroleum products shall be considered an exporter if it otherwise satisfies the aforementioned definition.

§ 98.391 Reporting threshold.
Any supplier of petroleum products who meets the requirements of §98.2(a)(4) must report GHG emissions.

§ 98.392 GHGs To report.
Suppliers of petroleum products must report the CO₂ emissions that would result from the complete combustion or oxidation of each petroleum product and natural gas liquid produced, used as feedstock, imported, or exported during the calendar year. Additionally, refiners must report CO₂ emissions that would result from the complete combustion or oxidation of any biomass co-processed with petroleum feedstocks.

§ 98.393 Calculating GHG emissions.
(a) Calculation for individual products produced, imported, or exported.
(1) Except as provided in paragraphs (h) and (i) of this section, any refiner, importer, or exporter shall calculate CO₂ emissions from each individual petroleum product and natural gas liquid using Equation MM-1 of this section.

\[ \text{CO}_2 = \text{Product}_i \times \text{EF}_i \] (Eq. MM-1)

Where:
\[ \text{CO}_2 = \text{Annual CO}_2 \text{ emissions that would result from the complete combustion or oxidation of each petroleum product ''i'' (metric tons).} \]
\[ \text{Product}_i = \text{Annual volume of product ''i'’ produced, imported, or exported by the reporting party (barrels). For refiners, this volume only includes products ex refinery gate, and excludes products that entered the refinery but are not reported under §98.396(a)(1). For natural gas liquids, volumes shall reflect the individual components of the product as listed in Table MM-1 to subpart MM.} \]
\[ \text{EF}_i = \text{Product-specific CO}_2 \text{ emission factor (metric tons CO}_2 \text{ per barrel).} \]

(2) In the event that an individual petroleum product is produced as a solid rather than liquid any refiner, importer, or exporter shall calculate CO₂ emissions using Equation MM-1 of this section.

\[ \text{CO}_2 = \text{Product}_i \times \text{EF}_i \] (Eq. MM-1)

Where:
\[ \text{CO}_2 = \text{Annual CO}_2 \text{ emissions that would result from the complete combustion or oxidation of each petroleum product ''i'' (metric tons).} \]
\[ \text{Product}_i = \text{Annual mass of product ''i’’ produced, imported, or exported by the reporting party (metric tons). For refiners, this mass only includes products ex refinery gate.} \]
\[ \text{EF}_i = \text{Product-specific CO}_2 \text{ emission factor (metric tons CO}_2 \text{ per metric ton of product).} \]
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each non-crude feedstock using Equation MM-2 of this section.

\[ \text{CO}_2^j = \text{Feedstock}_j \times \text{EF}_j \quad \text{(Eq. MM-2)} \]

Where:

- \( \text{CO}_2^j \): Annual \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of each non-crude feedstock “\( j \)” (metric tons).
- \( \text{Feedstock}_j \): Annual volume of a petroleum product or natural gas liquid “\( j \)” that enters the refinery to be further refined or otherwise used on site (barrels). For natural gas liquids, volumes shall reflect the individual components of the product as listed in table MM-1 of this subpart.
- \( \text{EF}_j \): Feedstock-specific \( \text{CO}_2 \) emission factor (metric tons \( \text{CO}_2 \) per barrel).

(2) In the event that a non-crude feedstock enters a refinery as a solid rather than liquid, the refiner shall calculate \( \text{CO}_2 \) emissions using Equation MM-2 of this section.

Where:

- \( \text{CO}_2^j \): Annual \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of each non-crude feedstock “\( j \)” (metric tons).
- \( \text{Feedstock}_j \): Annual mass of a petroleum product “\( j \)” that enters the refinery to be further refined or otherwise used on site (metric tons).
- \( \text{EF}_j \): Feedstock-specific \( \text{CO}_2 \) emission factor (metric tons \( \text{CO}_2 \) per metric ton of feedstock).

(c) Calculation for biomass co-processed with petroleum feedstocks.

(1) Refiners shall calculate \( \text{CO}_2 \) emissions from each type of biomass that enters a refinery and is co-processed with petroleum feedstocks using Equation MM-3 of this section.

Where:

- \( \text{CO}_2^m \): Annual \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of each type of biomass “\( m \)” (metric tons).
- \( \text{Biomass}_m \): Annual volume of a specific type of biomass that enters the refinery and is co-processed with petroleum feedstocks to produce a petroleum product reported under paragraph (a) of this section (barrels).
- \( \text{EF}_m \): Biomass-specific \( \text{CO}_2 \) emission factor (metric tons \( \text{CO}_2 \) per barrel).

(2) In the event that biomass enters a refinery as a solid rather than liquid and is co-processed with petroleum feedstocks, the refiner shall calculate \( \text{CO}_2 \) emissions from each type of biomass using Equation MM-3 of this section.

Where:

- \( \text{CO}_2^m \): Annual \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of each type of biomass “\( m \)” (metric tons).
- \( \text{Biomass}_m \): Total annual mass of a specific type of biomass that enters the refinery to be co-processed with petroleum feedstocks to produce a petroleum product reported under paragraph (a) of this section (metric tons).
- \( \text{EF}_m \): Biomass-specific \( \text{CO}_2 \) emission factor (metric tons \( \text{CO}_2 \) per metric ton of biomass).

(d) Summary calculation for refinery products.

Refiners shall calculate annual \( \text{CO}_2 \) emissions from all products using Equation MM-4 of this section.

\[ \text{CO}_2 = \sum (\text{CO}_2^i) - \sum (\text{CO}_2^j) - \sum (\text{CO}_2^m) \quad \text{(Eq. MM-4)} \]

Where:

- \( \text{CO}_2^i \): Annual \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of each petroleum product or natural gas liquid “\( i \)” (metric tons).
- \( \text{CO}_2^j \): Annual \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of each non-crude feedstock “\( j \)” (metric tons).
- \( \text{CO}_2^m \): Annual \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of each type of biomass “\( m \)” (metric tons).

(e) Summary calculation for importer and exporter products.

Importers and exporters shall calculate annual \( \text{CO}_2 \) emissions from all products using Equation MM-5 of this section.

\[ \text{CO}_2 = \sum (\text{CO}_2^i) - \sum (\text{CO}_2^j) - \sum (\text{CO}_2^m) \quad \text{(Eq. MM-5)} \]

Where:

- \( \text{CO}_2^i \): Annual \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of each petroleum product or natural gas liquid “\( i \)” (metric tons).
- \( \text{CO}_2^j \): Annual \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of each non-crude feedstock “\( j \)” (metric tons).
- \( \text{CO}_2^m \): Annual \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of each type of biomass “\( m \)” (metric tons).

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emissions from all petroleum products and natural gas liquids imported or exported, respectively, using Equations MM–1 and MM–5 of this section.

\[ \text{CO}_2 = \sum (\text{CO}_2) \]  (Eq. MM-5)

Where:
- \( \text{CO}_2 \) = Annual \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of each petroleum product or natural gas liquid "i" (metric tons).
- \( \text{CO}_2x \) = Annual \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of all petroleum products and natural gas liquids.

(f) Emission factors for petroleum products and natural gas liquids. The emission factor (EF\(_{i,j}\)) for each petroleum product and natural gas liquid shall be determined using either of the calculation methods described in paragraphs (f)(1) or (f)(2) of this section. The same calculation method must be used for the entire quantity of the product for the reporting year. For refiners, the quantity of a product that enters a refinery (i.e., a non-crude feedstock) is considered separate from the quantity of a product ex-refinery gate.

(1) Calculation Method 1. To determine the emission factor (i.e., EF\(_{i}\) in Equation MM-1) for solid products, multiply the default carbon share factor (i.e., percent carbon by mass) in column B of Table MM-1 to this subpart for the appropriate product by \( \frac{44}{12} \). For all other products, use the default CO\(_2\) emission factor listed in column C of Table MM-1 of this subpart for the appropriate product.

(2) Calculation Method 2.
   (i) For solid products, develop emission factors according to Equation MM–6 of this section using a value of 1 for density and direct measurements of carbon share according to methods set forth in §98.394(c). For all other products, develop emission factors according to Equation MM–6 of this section using direct measurements of density and carbon share according to methods set forth in §98.394(c).

\[ \text{EF}_{i,j} = \text{Density} \times \text{Carbon Share} \times \left( \frac{44}{12} \right) \]  (Eq. MM-6)

Where:
- \( \text{EF}_{i,j} \) = Emission factor of the petroleum product or natural gas liquid (metric tons \( \text{CO}_2 \) per barrel or per metric ton of product).
- Density = Density of the petroleum product or natural gas liquid (metric tons per barrel for non-solid products, 1 for solid products).
- Carbon share = Percent of total mass that carbon represents in the petroleum product or natural gas liquid, expressed as a fraction (e.g., 75% would be expressed as 0.75 in the above equation).
- \( \frac{44}{12} \) = Conversion factor for carbon to carbon dioxide.

(ii) If you use a standard method that involves gas chromatography to determine the percent mass of each component in a product, calculate the product’s carbon share using Equation MM–7 of this section.

\[ \text{Carbon Share} = \sum (\%\text{Composition}_{1..n} \times \%\text{Mass}_{1..n}) \]  (Eq. MM-7)

Where:
- Carbon Share = Percent of total mass that carbon represents in the petroleum product or natural gas liquid.
- \( \%\text{Composition}_{1..n} \) = Percent of total mass that each molecular component in the petroleum product or natural gas liquid represents as determined by the procedures in the selected standard method.
- \( \%\text{Mass}_{1..n} \) = Percent of total mass that carbon represents in each molecular component of the petroleum product or natural gas liquid.

(g) Emission factors for biomass co-processed with petroleum feedstocks. Refiners shall use the most appropriate default CO\(_2\) emission factor (EF\(_m\)) for biomass...
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in Table MM–2 of this subpart to calculate CO₂ emissions in paragraph (c) of this section.

(h) Special procedures for blended biomass-based fuels. In the event that some portion of a petroleum product is biomass-based and was not derived by co-processing biomass and petroleum feedstocks together (i.e., the petroleum product was produced by blending a petroleum-based product with a biomass-based fuel), the reporting party shall calculate emissions for the petroleum product according to one of the methods in paragraphs (h)(1) through (h)(4) of this section, as appropriate.

(1) A reporter using Calculation Methodology 1 to determine the emission factor of a petroleum product shall calculate the CO₂ emissions associated with that product using Equation MM–8 of this section in place of Equation MM–1 of this section.

\[ CO_{2i} = \text{Product}_i \times \text{EF}_i \times \%\text{Vol}_i \]  
(Eq. MM-8)

Where:
- \( CO_{2i} \) = Annual CO₂ emissions that would result from the complete combustion or oxidation of each petroleum product “i” (metric tons).
- \( \text{Product}_i \) = Annual volume of each petroleum product “i” produced, imported, or exported by the reporting party (barrels). For refiners, this volume only includes products ex refinery gate.
- \( \text{EF}_i \) = Petroleum product-specific CO₂ emission factor (metric tons CO₂ per barrel) from Table MM–1 of this subpart.
- \( \%\text{Vol}_i \) = Percent volume of product “i” that is petroleum-based, not including any denaturant that may be present in any ethanol product, expressed as a fraction (e.g., 75% would be expressed as 0.75 in the above equation).

(2) A refinery using Calculation Methodology 1 of this subpart to determine the emission factor of a non-crude petroleum feedstock shall calculate the CO₂ emissions associated with that feedstock using Equation MM–9 of this section in place of Equation MM–2 of this section.

\[ CO_{2j} = \text{Feedstock}_j \times \text{EF}_j \times \%\text{Vol}_j \]  
(Eq. MM-9)

Where:
- \( CO_{2j} \) = Annual CO₂ emissions that would result from the complete combustion or oxidation of each non-crude feedstock “j” (metric tons).
- \( \text{Feedstock}_j \) = Annual volume of each petroleum product “j” that enters the refinery as a feedstock to be further refined or otherwise used on site (barrels).
- \( \text{EF}_j \) = Non-crude petroleum feedstock-specific CO₂ emission factor (metric tons CO₂ per barrel).
- \( \%\text{Vol}_j \) = Percent volume of feedstock “j” that is petroleum-based, not including any denaturant that may be present in any ethanol product, expressed as a fraction (e.g., 75% would be expressed as 0.75 in the above equation).

(3) Calculation Method 2 procedures for products.

(1) A reporter using Calculation Method 2 of this subpart to determine the emission factor of a petroleum product that does not contain denatured ethanol must calculate the CO₂ emissions associated with that product using Equation MM–10 of this section in place of Equation MM–1 of this section.

\[ CO_{2i} = (\text{Product}_i \times \text{EF}_i) - (\text{Product}_i \times \text{EF}_m \times \%\text{Vol}_m) \]  
(Eq. MM-10)
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Where:

\[ \text{CO}_2i = \text{Annual CO}_2 \text{ emissions that would result from the complete combustion or oxidation of each product \text{\textquotedblright}i\text{\textquotedblright} (metric tons).} \]

\[ \text{Product}_i = \text{Annual volume of each petroleum product \text{\textquotedblright}i\text{\textquotedblright} produced, imported, or exported by the reporting party (barrels).} \]

For refiners, this volume only includes products ex refinery gate.

\[ \text{EF}_i = \text{Product-specific CO}_2 \text{ emission factor (metric tons CO}_2 \text{ per barrel).} \]

\[ \text{EF}_m = \text{Default CO}_2 \text{ emission factor from Table MM-2 to subpart MM that most closely represents the component of product \text{\textquotedblright}i\text{\textquotedblright} that is biomass-based.} \]

\[ \%\text{Vol}_m = \text{Percent volume of petroleum product \text{\textquotedblright}i\text{\textquotedblright} that is biomass-based, expressed as a fraction (e.g., 75% would be expressed as 0.75 in the above equation).} \]

(ii) In the event that a petroleum product contains denatured ethanol, importers and exporters must follow Calculation Method 1 procedures in paragraph (h)(1) of this section; and refiners must sample the petroleum portion of the blended biomass-based fuel prior to blending and calculate CO\(_2\) emissions using Equation MM–10a of this section.

\[ \text{CO}_2i = \text{Product}_p \times \text{EF}_i \] (Eq. MM-10a)

Where:

\[ \text{CO}_2i = \text{Annual CO}_2 \text{ emissions that would result from the complete combustion or oxidation of each biomass-blended fuel \text{\textquotedblright}i\text{\textquotedblright} (metric tons).} \]

\[ \text{Product}_p = \text{Annual volume of the petroleum-based portion of each biomass blended fuel \text{\textquotedblright}i\text{\textquotedblright} produced by the refiner (barrels).} \]

\[ \text{EF}_i = \text{Petroleum product-specific CO}_2 \text{ emission factor (metric tons CO}_2 \text{ per barrel).} \]

(4) Calculation Method 2 procedures for non-crude feedstocks.

(i) A refiner using Calculation Method 2 of this subpart to determine the emission factor of a non-crude petroleum feedstock that does not contain denatured ethanol must calculate the CO\(_2\) emissions associated with that feedstock using Equation MM–11 of this section in place of Equation MM–2 of this section.

\[ \text{CO}_2j = (\text{Feedstock}_j \times \text{EF}_j) - (\text{Feedstock}_j \times \text{EF}_m \times \%\text{Vol}_m) \] (Eq. MM-11)

Where:

\[ \text{CO}_2j = \text{Annual CO}_2 \text{ emissions that would result from the complete combustion or oxidation of each non-crude feedstock \text{\textquotedblright}j\text{\textquotedblright} (metric tons).} \]

\[ \text{Feedstock}_j = \text{Annual volume of each petroleum product \text{\textquotedblright}j\text{\textquotedblright} that enters the refinery to be further refined or otherwise used on site (barrels).} \]

\[ \text{EF}_j = \text{Feedstock-specific CO}_2 \text{ emission factor (metric tons CO}_2 \text{ per barrel).} \]

\[ \text{EF}_m = \text{Default CO}_2 \text{ emission factor from Table MM-2 to subpart MM that most closely represents the component of petroleum product \text{\textquotedblright}j\text{\textquotedblright} that is biomass-based.} \]

\[ \%\text{Vol}_m = \text{Percent volume of non-crude feedstock \text{\textquotedblright}j\text{\textquotedblright} that is biomass-based, expressed as a fraction (e.g., 75% would be expressed as 0.75 in the above equation).} \]

(ii) In the event that a non-crude feedstock contains denatured ethanol, refiners must follow Calculation Method 1 procedures in paragraph (h)(2) of this section.

(i) Optional procedures for blended products that do not contain biomass.

(1) In the event that a reporter produces, imports, or exports a blended product that does not include biomass, the reporter may calculate emissions for the blended product according to the method in paragraph (i)(2) of this section. In the event that a refiner receives a blended non-crude feedstock that does not include biomass, the refiner may calculate emission for the blended non-crude feedstock according to the method in paragraph (i)(3) of this section. The procedures in this section may be used only if all of the following criteria are met:

(i) The reporter knows the relative proportion of each component of the blend (i.e., the mass or volume percentage).

(ii) Each component of blended product “i” or blended non-crude feedstock “j” meets the strict definition of a product listed in Table MM–1 to subpart MM.
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§ 98.394 Monitoring and QA/QC requirements.

(a) Determination of quantity.

(1) The quantity of petroleum products, natural gas liquids, and biomass, as well as the quantity of crude oil measured on site at a refinery, shall be determined as follows:

(i) The emissions that would result from the complete combustion or oxidation of non-crude feedstock "k" must still be calculated separately using Equation MM-2 of this section and applied in Equation MM-4 of this section.

(ii) The quantity of blending component "k" applied in Equation MM-12 of this section and the quantity of non-crude feedstock "k" applied in Equation MM-2 of this section must be determined using the same method or practice.


EDITORIAL NOTE: At 75 FR 66475, October 28, 2010, § 98.393 was amended by definition of “Product” in Equation MM-2 of paragraph (a)(2); however, the amendment could not be incorporated as instructed.

§ 98.394 Monitoring and QA/QC requirements.

(a) Determination of quantity.

(1) The quantity of petroleum products, natural gas liquids, and biomass, as well as the quantity of crude oil measured on site at a refinery, shall be determined as follows:

(i) The emissions that would result from the complete combustion or oxidation of a blended product “i” (metric tons).

Blending Component$_{i...n}$ = Annual volume or mass of each blending component that is blended (barrels or metric tons).

EF$_{i...n}$ = CO$_2$ emission factors specific to each blending component (metric tons CO$_2$ per barrel or per metric ton of product).

n = Number of blending components blended into blended product “i”.

(3) For refineries, the reporter must calculate emissions for the blended non-crude feedstock using Equation MM-13 of this section in place of Equation MM-2 of this section.

$$CO_2 = \sum [Blending \ Component_{i...n} \ast EF_{i...n}] \quad (\text{Eq. MM-12})$$

Where:

CO$_2$ = Annual CO$_2$ emissions that would result from the complete combustion or oxidation of a blended non-crude feedstock “j” (metric tons).

Blending Component$_{i...n}$ = Annual volume or mass of each blending component that is blended (barrels or metric tons).

EF$_{i...n}$ = CO$_2$ emission factors specific to each blending component (metric tons CO$_2$ per barrel or per metric ton of product).

n = Number of blending components blended into blended non-crude feedstock “j”.

(4) For refineries, if a blending component “k” used in paragraph (i)(2) of this section enters the refinery before blending as non-crude feedstock:

(i) The emissions that would result from the complete combustion or oxidation of non-crude feedstock “k” must still be calculated separately using Equation MM-2 of this section and applied in Equation MM-4 of this section.

(ii) The quantity of blending component “k” applied in Equation MM-12 of this section and the quantity of non-crude feedstock “k” applied in Equation MM-2 of this section must be determined using the same method or practice.
American Society of Mechanical Engineers (ASME), the American Petroleum Institute (API), and the North American Energy Standards Board (NAESB).

(ii) Where no appropriate standard method developed by a consensus-based standards organization exists, industry standard practices shall be followed.

(iii) For products that are liquid at 60 degrees Fahrenheit and one standard atmosphere, all measurements of quantity shall be temperature-adjusted and pressure-adjusted to these conditions. For all other products, reporters shall use appropriate standard conditions specified in the standard method; if temperature and pressure conditions are not specified in the standard method or if a reporter uses an industry standard practice to determine quantity, the reporter shall use appropriate standard conditions according to established industry practices.

(2) All measurement equipment (including, but not limited to, flow meters and tank gauges) used for compliance with this subpart shall be appropriate for the standard method or industry standard practice followed under paragraph (a)(1)(i) or (a)(1)(ii) of this section.

(3) The quantity of crude oil not measured on site at a refinery shall be determined according to one of the following methods. You may use an appropriate standard method published by a consensus-based standards organization or you may use an industry standard practice.

(b) Equipment Calibration.

(1) All measurement equipment shall be calibrated prior to its first use for reporting under this subpart, using an appropriate standard method published by a consensus-based standards organization or according to the equipment manufacturer’s directions.

(2) Measurement equipment shall be recalibrated at the minimum frequency specified by the standard method used or by the equipment manufacturer’s directions.

(c) Procedures for Calculation Methodology 2 of this subpart.

(i) Reporting parties shall collect one sample of each petroleum product or natural gas liquid on any day of each calendar month of the reporting year in which the quantity of that product was measured in accordance with the requirements of this subpart. For example, if a given product was measured as entering the refinery continuously throughout the reporting year, twelve samples of that product shall be collected over the reporting year, one on any day of each calendar month of that year. If a given product was only measured from April 15 through June 10 of the reporting year, a refiner would collect three samples during that year, one during each of the calendar months of April, May and June on a day when the product was measured as either entering or exiting the refinery. Each sample shall be collected using an appropriate standard method published by a consensus-based standards organization.

(2) Mixing and handling of samples shall be performed using an appropriate standard method published by a consensus-based standards organization.

(3) Density measurement.

(i) For all products that are not solid, reporters shall test for density using an appropriate standard method published by a consensus-based standards organization.

(ii) The density value for a given petroleum product shall be generated by either making a physical composite of all of the samples collected for the reporting year and testing that single sample or by measuring the individual samples throughout the year and defining the representative density value for the sample set by numerical means, i.e., a mathematical composite. If a physical composite is chosen as the option to obtain the density value, the reporter shall submit each of the individual samples collected during the reporting year to the laboratory responsible for generating the composite sample.

(iii) For physical composites, the reporter shall handle the individual samples and the laboratory shall mix them in accordance with an appropriate standard method published by a consensus-based standards organization.

(iv) All measurements of density shall be temperature-adjusted and pressure-adjusted to the conditions assumed for determining the quantities
of the product reported under this subpart.

(4) Carbon share measurement.

(i) Reporters shall test for carbon share using an appropriate standard method published by a consensus-based standards organization.

(ii) If a standard method that involves gas chromatography is used to determine the percent mass of each component in a product, the molecular formula for each component shall be obtained from the information provided in the standard method and the atomic mass of each element in a given molecular component shall be obtained from the periodic table of the elements.

(iii) The carbon share value for a given petroleum product shall be generated by either making a physical composite of all of the samples collected for the reporting year and testing that single sample or by measuring the individual samples throughout the year and defining the representative carbon share value for the sample set by numerical means, i.e., a mathematical composite. If a physical composite is chosen as the option to obtain the carbon share value, the reporter shall submit each of the individual samples collected during the reporting year to the laboratory responsible for generating the composite sample.

(iv) For physical composites, the reporter shall handle the individual samples and the laboratory shall mix them in accordance with an appropriate standard method published by a consensus-based standards organization.

(d) Measurement of API gravity and sulfur content of crude oil.

(1) A representative sample or multiple representative samples of each batch of crude oil shall be taken according to one of the following methods. You may use an appropriate standard method published by a consensus-based standards organization or you may use an industry standard practice. The weighted average API gravity for each batch shall be calculated by multiplying the volume associated with each representative sample by the API gravity, adding these values for all the samples, and then dividing that total value by the volume of the batch.

(2) Sulfur content shall be measured according to one of the following methods. You may use an appropriate standard method published by a consensus-based standards organization or you may use an industry standard practice. The weighted average sulfur content for each batch shall be calculated by multiplying the volume associated with each representative sample by the sulfur content, adding these values for all the samples, and then dividing that total value by the volume of the batch.

(5) All measurements shall be temperature-adjusted and pressure-adjusted to the conditions assumed for determining the quantities of crude oil reported under this subpart.


§ 98.395 Procedures for estimating missing data.

(a) Determination of quantity. Whenever the quality assurance procedures in §98.394(a) cannot be followed to measure the quantity of one or more petroleum products, natural gas liquids, types of biomass, feedstocks, or crude oil batches during any period (e.g., if a meter malfunctions), the following missing data procedures shall be used:

(1) For quantities of a product that are purchased or sold, a period of missing data shall be substituted using a reporter’s established procedures for billing purposes in that period as agreed to by the party selling or purchasing the product.

(2) For quantities of a product that are not purchased or sold but of which the custody is transferred, a period of missing data shall be substituted using a reporter’s established procedures for tracking purposes in that period as agreed to by the party involved in custody transfer of the product.
§ 98.396 Determination of emission factor.
Whenever any of the procedures in §98.394(c) cannot be followed to develop an emission factor for any reason, Calculation Methodology 1 of this subpart must be used in place of Calculation Methodology 2 of this subpart for the entire reporting year.

(b) Determination of API gravity and sulfur content of crude oil. For missing data on sulfur content or API gravity, the substitute data value shall be the arithmetic average of the quality-assured values of API gravity or sulfur content in the batch preceding and the batch immediately following the missing data incident. If no quality-assured data are available prior to the missing data incident, the substitute data value shall be the first quality-assured values for API gravity and sulfur content obtained from the batch after the missing data period.

§ 98.396 Data reporting requirements.
In addition to the information required by §98.3(c), the following requirements apply:

(a) Refiners shall report the following information for each facility:

(1) For each petroleum product or natural gas liquid listed in table MM–1 of this subpart that enters the refinery to be further refined or otherwise used on site, report the annual quantity in metric tons or barrels by each quantity measurement standard method or other industry standard practice used. For natural gas liquids, quantity shall reflect the individual components of the product.

(2) For each petroleum product or natural gas liquid listed in Table MM–1 of this subpart that enters the refinery to be further refined or otherwise used on site, report the annual quantity in metric tons or barrels. For natural gas liquids, quantity shall reflect the individual components of the product.

(3) For each feedstock reported in paragraph (a)(2) of this section that was produced by blending a petroleum-based product with a biomass-based product, report the percent of the volume reported in paragraph (a)(2) of this section that is petroleum-based (excluding any denaturant that may be present in any ethanol product).

(4) Each standard method or other industry standard practice used to measure each quantity reported in paragraph (a)(1) of this section.

(5) For each petroleum product and natural gas liquid (ex refinery gate) listed in Table MM–1 of this subpart, report the annual quantity in metric tons or barrels by each quantity measurement standard method or other industry standard practice used. For natural gas liquids, quantity shall reflect the individual components of the product. Petroleum products and natural gas liquids that enter the refinery, but are not reported in (a)(1), shall not be reported under this paragraph.

(6) For each petroleum product and natural gas liquid (ex refinery gate) listed in Table MM–1 of this subpart, report the annual quantity in metric tons or barrels. For natural gas liquids, quantity shall reflect the individual components of the product. Petroleum products and natural gas liquids that enter the refinery, but are not reported in (a)(2), shall not be reported under this paragraph.

(7) For each product reported in paragraph (a)(6) of this section that was produced by blending a petroleum-based product with a biomass-based product, report the percent of the volume reported in paragraph (a)(6) of this section that is petroleum-based (excluding any denaturant that may be present in any ethanol product).

(8) Each standard method or other industry standard practice used to measure each quantity reported in paragraph (a)(5) of this section.

(9) For every feedstock reported in paragraph (a)(2) of this section for which Calculation Methodology 2 of this subpart was used to determine an emissions factor, report:

(i) The number of samples collected according to §98.394(c)

(ii) The sampling standard method used.

(iii) The carbon share test results in percent mass.

(iv) The standard method used to test carbon share.

(v) The calculated CO₂ emissions factor in metric tons.
(10) For every non-solid feedstock reported in paragraph (a)(2) of this section for which Calculation Methodology 2 of this subpart was used to determine an emissions factor, report:
   (i) The density test results in metric tons per barrel.
   (ii) The standard method used to test density.

(11) For every petroleum product and natural gas liquid reported in paragraph (a)(6) of this section for which Calculation Methodology 2 of this subpart was used to determine an emissions factor, report:
   (i) The number of samples collected according to §98.394(c).
   (ii) The sampling standard method used.
   (iii) The carbon share test results in percent mass.
   (iv) The standard method used to test carbon share.
   (v) The calculated CO\textsubscript{2} emissions factor in metric tons CO\textsubscript{2} per barrel or per metric ton of product.

(12) For every non-solid petroleum product and natural gas liquid reported in paragraph (a)(6) for which Calculation Methodology 2 was used to determine an emissions factor, report:
   (i) The density test results in metric tons per barrel.
   (ii) The standard method used to test density.

(13) For each specific type of biomass that enters the refinery to be co-processed with petroleum feedstocks to produce a petroleum product reported in paragraph (a)(6) of this section, report the annual quantity in metric tons or barrels by each quantity measurement standard method or other industry standard practice used.

(14) For each specific type of biomass that enters the refinery to be co-processed with petroleum feedstocks to produce a petroleum product reported in paragraph (a)(6) of this section, report the annual quantity in metric tons or barrels.

(15) Each standard method or other industry standard practice used to measure each quantity reported in paragraph (a)(13) of this section.

(16) The CO\textsubscript{2} emissions in metric tons that would result from the complete combustion or oxidation of each petroleum product and natural gas liquid (ex refinery gate) reported in paragraph (a)(6) of this section that were calculated according to §98.393(a) or (h).

(17) The CO\textsubscript{2} emissions in metric tons that would result from the complete combustion or oxidation of each feedstock reported in paragraph (a)(2) of this section that were calculated according to §98.393(b) or (h).

(18) The CO\textsubscript{2} emissions in metric tons that would result from the complete combustion or oxidation of each type of biomass feedstock co-processed with petroleum feedstocks reported in paragraph (a)(13) of this section, calculated according to §98.393(c).

(19) The sum of CO\textsubscript{2} emissions that would result from the complete combustion or oxidation of all products, calculated according to §98.393(d).

(20) All of the following information for all crude oil feedstocks used at the refinery:
   (i) Batch volume in barrels.
   (ii) Weighted average API gravity representing the batch at the point of entry at the refinery.
   (iii) Weighted average sulfur content representing the batch at the point of entry at the refinery.
   (iv) Country of origin, of the batch, if known and data in paragraphs (a)(20)(v) and (a)(20)(vi) of this section are unknown.
   (v) EIA crude stream code and crude stream name of the batch, if known.
   (vi) Generic name for the crude stream and the appropriate EIA two-letter country or state and production area code of the batch, if known and no appropriate EIA crude stream code exists.

(21) The quantity of bulk NGLs in metric tons or barrels received for processing during the reporting year.

(22) Volume of crude oil in barrels that you injected into a crude oil supply or reservoir. A volume of crude oil that entered the refinery, but was not reported in paragraphs (a)(2) or (a)(20), shall not be reported under this paragraph.

(23) Special provisions for 2010. For reporting year 2010 only, a refiner that knows the information under a specific tier of the batch definition in 40 CFR 98.398, but does not have the necessary data collection and management in
(b) In addition to the information required by §98.3(c), each importer shall report all of the following information at the corporate level:

1. For each petroleum product and natural gas liquid listed in Table MM–1 of this subpart, report the annual quantity in metric tons or barrels by each quantity measurement standard method or other industry standard practice used. For natural gas liquids, quantity shall reflect the individual components of the product.

2. For each petroleum product and natural gas liquid listed in Table MM–1 of this subpart, report the annual quantity in metric tons or barrels by each quantity measurement standard method or other industry standard practice used. For natural gas liquids, quantity shall reflect the individual components of the product.

3. For each product reported in paragraph (b)(2) of this section that was produced by blending a petroleum-based product with a biomass-based product, report the percent of the volume reported in paragraph (b)(2) of this section that is petroleum-based (excluding any denaturant that may be present in any ethanol product).

4. Each standard method or other industry standard practice used to measure each quantity reported in paragraph (b)(1) of this section.

5. For each product reported in paragraph (b)(2) of this section for which Calculation Methodology 2 of this subpart was used to determine an emissions factor, report:
   (i) The number of samples collected according to §98.394(c).
   (ii) The sampling standard method used.
   (iii) The carbon share test results in percent mass.
   (iv) The standard method used to test carbon share.
   (v) The calculated CO₂ emissions factor in metric tons CO₂ per barrel or per metric ton of product.

6. For each non-solid product reported in paragraph (b)(2) of this section for which Calculation Methodology 2 of this subpart was used to determine an emissions factor, report:
   (i) The density test results in metric tons per barrel.
   (ii) The standard method used to test density.

(7) The CO₂ emissions in metric tons that would result from the complete combustion or oxidation of each imported petroleum product and natural gas liquid reported in paragraph (b)(2) of this section, calculated according to §98.393(a).

(c) In addition to the information required by §98.3(c), each exporter shall report all of the following information at the corporate level:

1. For each petroleum product and natural gas liquid listed in Table MM–1 of this subpart, report the annual quantity in metric tons or barrels by each quantity measurement standard method or other industry standard practice used. For natural gas liquids, quantity shall reflect the individual components of the product.

2. For each petroleum product and natural gas liquid listed in Table MM–1 of this subpart, report the annual quantity in metric tons or barrels by each quantity measurement standard method or other industry standard practice used. For natural gas liquids, quantity shall reflect the individual components of the product.

3. For each product reported in paragraph (c)(2) of this section that was produced by blending a petroleum-based product with a biomass-based product, report the percent of the volume reported in paragraph (c)(2) of this section that is petroleum-based (excluding any denaturant that may be present in any ethanol product).

4. Each standard method or other industry standard practice used to measure each quantity reported in paragraph (c)(1) of this section.

5. For each product reported in paragraph (c)(2) of this section for which Calculation Methodology 2 of this subpart was used to determine an emissions factor, report:
   (i) The number of samples collected according to §98.394(c).
   (ii) The sampling standard method used.
(iii) The carbon share test results in percent mass.
(iv) The standard method used to test carbon share.
(v) The calculated CO₂ emissions factor in metric tons CO₂ per barrel or per metric ton of product.
(6) For each non-solid product reported in paragraph (c)(2) of this section for which Calculation Methodology 2 of this subpart was used to determine an emissions factor, report:
   (i) The density test results in metric tons per barrel.
   (ii) The standard method used to test density.
(7) The CO₂ emissions in metric tons that would result from the complete combustion or oxidation of each exported petroleum product and natural gas liquid reported in paragraph (c)(2) of this section, calculated according to § 98.393(a).
(8) The sum of CO₂ emissions that would result from the complete combustion or oxidation of all exported products, calculated according to § 98.393(e).
(d) Blended non-crude feedstock and products. (1) Refineries, exporters, and importers must report the following information for each blended product and non-crude feedstock where emissions were calculated according to § 98.393(i):
   (i) Volume or mass of each blending component.
   (ii) The CO₂ emissions in metric tons that would result from the complete combustion or oxidation of each blended non-crude feedstock or product, using Equation MM–12 or Equation MM–13 of this section.
   (iii) Whether it is a blended non-crude feedstock or a blended product.
(2) For a product that enters the refinery to be further refined or otherwise used on site that is a blended non-crude feedstock, refiners must meet the reporting requirements of paragraphs (a)(1) and (a)(2) of this section by reflecting the individual components of the blended non-crude feedstock.
(3) For a product that is produced, imported, or exported that is a blended product, refiners, importers, and exporters must meet the reporting requirements of paragraphs (a)(5), (a)(6), (b)(1), (b)(2), (c)(1), and (c)(2) of this section, as applicable, by reflecting the individual components of the blended product.
§ 98.397 Records that must be retained.
(a) All reporters shall retain copies of all reports submitted to EPA under § 98.396. In addition, all reporters shall maintain sufficient records to support information contained in those reports, including but not limited to information on the characteristics of their feedstocks and products.
(b) Reporters shall maintain records to support quantities that are reported under this subpart, including records documenting any estimations of missing data and the number of calendar days in the reporting year for which substitute data procedures were followed. For all reported quantities of petroleum products, natural gas liquids, and biomass, as well as crude oil quantities measured on site at a refinery, reporters shall maintain metering, gauging, and other records normally maintained in the course of business to document product and feedstock flows including the date of initial calibration and the frequency of recalibration for the measurement equipment used.
(c) Reporters shall retain laboratory reports, calculations and worksheets used to estimate the CO₂ emissions of the quantities of petroleum products, natural gas liquids, biomass, and feedstocks reported under this subpart.
(d) Reporters shall maintain laboratory reports, calculations and worksheets used in the measurement of density and carbon share for any petroleum products or natural gas liquid for which CO₂ emissions were calculated using Calculation Methodology 2.
(e) Estimates of missing data shall be documented and records maintained showing the calculations.
(f) Reporters described in this subpart shall also retain all records described in § 98.3(g).
§ 98.398 Definitions.

Except as specified in this section, all terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Batch means either a volume of crude oil that enters a refinery or the components of such volume (e.g., the volumes of different crude streams that are blended together and then delivered to a refinery). The batch volume is the first appropriate tier in the following list:

(1) Up to an annual volume of a type of crude oil identified by an EIA crude stream code, if the EIA crude stream code is known.

(2) Up to an annual volume of a type of crude oil identified by a generic name for the crude stream and an appropriate EIA two-letter country or state and production area code, if the generic name and EIA two-letter code are known but no appropriate EIA crude stream code exists.

(3) Up to a calendar month of crude oil volume from a single known foreign country of origin if the crude stream name is unknown.

(4) Up to a calendar month of crude oil volume from the United States if the crude stream name and production area are unknown.

(5) Up to a calendar month of crude oil volume if the country of origin is unknown.

[75 FR 66478, Oct. 28, 2010]

| TABLE MM–1 TO SUBPART MM OF PART 98—DEFAULT FACTORS FOR PETROLEUM PRODUCTS AND NATURAL GAS LIQUIDS

<table>
<thead>
<tr>
<th>Products</th>
<th>Column A: carbon density (metric tons/bbl)</th>
<th>Column B: carbon share (% of mass)</th>
<th>Column C: emission factor (metric tons CO₂/bbl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finished Motor Gasoline</td>
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<tr>
<td>Conventional—Summer</td>
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### Table MM-2 to Subpart MM of Part 98—Default Factors for Biomass-Based Fuels and Biomass

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<tr>
<th>Biomass-based fuel and biomass</th>
<th>Column A: Density (metric tons/ bbl)</th>
<th>Column B: Carbon share (% of mass)</th>
<th>Column C: Emission factor (metric tons CO₂/bbl)</th>
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<tbody>
<tr>
<td>Ethanol (100%)</td>
<td>0.1268</td>
<td>52.14</td>
<td>0.3422</td>
</tr>
<tr>
<td>Biodiesel (100%, methyl ester)</td>
<td>0.1396</td>
<td>77.30</td>
<td>0.3957</td>
</tr>
</tbody>
</table>

1 In the case of products blended with some portion of biomass-based fuel, the carbon share in Table MM-1 of this subpart represents only the petroleum-based components.
2 Products that are derived entirely from biomass should not be reported, but products that were derived from both biomass and a petroleum product (i.e., co-processed) should be reported as the petroleum product that it most closely represents.
### Subpart NN—Suppliers of Natural Gas and Natural Gas Liquids

**§ 98.400** Definition of the source category.

This supplier category consists of natural gas liquids fractionators and local natural gas distribution companies.

(a) Natural gas liquids fractionators are installations that fractionate natural gas liquids (NGLs) into their constituent liquid products (ethane, propane, normal butane, isobutane or pentanes plus) for supply to downstream facilities.

(b) Local Distribution Companies (LDCs) are companies that own or operate distribution pipelines, not interstate pipelines or intrastate pipelines, that physically deliver natural gas to end users and that are regulated as separate operating companies by State public utility commissions or that operate as independent municipally-owned distribution systems.

(c) This supply category does not consist of the following facilities:

(1) Field gathering and boosting stations.

(2) Natural gas processing plants that separate NGLs from natural gas and produce bulk or y-grade NGLs but do not fractionate these NGLs into their constituent products.

(3) Facilities that meet the definition of refineries and report under subpart MM of this part.

(4) Facilities that meet the definition of petrochemical plants and report under subpart X of this part.

**§ 98.401** Reporting threshold.

Any supplier of natural gas and natural gas liquids that meets the requirements of §98.2(a)(4) must report GHG emissions.

**§ 98.402** GHGs to report.

(a) NGL fractionators must report the CO₂ emissions that would result from the complete combustion or oxidation of the annual quantity of ethane, propane, normal butane, isobutane, and pentanes plus that is produced and sold or delivered to others.

(b) LDCs must report the CO₂ emissions that would result from the complete combustion or oxidation of the annual volumes of natural gas provided to end-users on their distribution systems.

**§ 98.403** Calculating GHG emissions.

(a) LDCs and fractionators shall, for each individual product reported under this part, calculate the estimated CO₂ emissions that would result from the complete combustion or oxidation of the products supplied using either of Calculation Methodology 1 or 2 of this subpart:

1. **Calculation Methodology 1.** NGL fractionators shall estimate CO₂ emissions that would result from the complete combustion or oxidation of the product(s) supplied using Equation NN–1 of this section. LDCs shall estimate CO₂ emissions that would result from the complete combustion or oxidation of the product received at the city gate using Equation NN–1. For each product, use the default value for higher heating value and CO₂ emission factor in Table NN–1 of this subpart. Alternatively, for each product, a reporter-specific higher heating value and CO₂ emission factor may be used, in place of one or both defaults provided they are developed using methods outlined in §98.404. For each product, you must use the same volume unit throughout the equation.
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\[ \text{CO}_2 = 1 \times 10^{-3} \times \sum \text{Fuel}_h \times \text{HHV}_h \times \text{EF}_h \]  
(Eq. NN-1)

Where:

- \( \text{CO}_2 \) = Annual \( \text{CO}_2 \) mass emissions that would result from the combustion or oxidation of each product “\( h \)” for redelivery to all recipients (metric tons).
- \( \text{Fuel}_h \) = Total annual volume of product “\( h \)” supplied (volume per year, in thousand standard cubic feet (Mscf) for natural gas and bbl for NGLs).
- \( \text{HHV}_h \) = Higher heating value of product “\( h \)” supplied (MMBtu/Mscf or MMBtu/bbl).
- \( \text{EF}_h \) = \( \text{CO}_2 \) emission factor of product “\( h \)” (kg \( \text{CO}_2 \)/MMBtu).
- \( 1 \times 10^{-3} \) = Conversion factor from kilograms to metric tons (MT/kg).

(2) Calculation Methodology 2. NGL fractionators shall estimate \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of the product(s) supplied using Equation NN-2 of this section. LDCs shall estimate \( \text{CO}_2 \) emissions that would result from the complete combustion or oxidation of the product received at the city gate using Equation NN-2. For each product, use the default \( \text{CO}_2 \) emission factor found in Table NN-2 of this subpart. Alternatively, reporter-specific \( \text{CO}_2 \) emission factors may be used, provided they are developed using methods outlined in § 98.404.

\[ \text{CO}_2 = \text{Fuel} \times \text{EF} \]  
(Eq. NN-3)

Where:

- \( \text{CO}_2 \) = Annual \( \text{CO}_2 \) mass emissions that would result from the combustion or oxidation of natural gas for redelivery to transmission pipelines or other LDCs (metric tons).
- \( \text{Fuel} \) = Total annual volume of natural gas supplied (Mscf per year).
- \( \text{EF} \) = Fuel-specific \( \text{CO}_2 \) emission factor (MT \( \text{CO}_2 \)/Mscf).

(2) For natural gas delivered to each meter registering a supply equal to or greater than 460,000 Mscf per year, use Equation NN-4 of this section and the default values for the \( \text{CO}_2 \) emission factors found in Table NN-2 of this subpart. Alternatively, reporter-specific \( \text{CO}_2 \) emission factors may be used, provided they are developed using methods outlined in § 98.404.

\[ \text{CO}_2 = \text{Fuel} \times \text{EF} \]  
(Eq. NN-4)

Where:

- \( \text{CO}_2 \) = Annual \( \text{CO}_2 \) mass emissions that would result from the combustion or oxidation of natural gas received by end-users that receive a supply equal to or greater than 460,000 Mscf per year (metric tons).
- \( \text{Fuel} \) = Total annual volume of natural gas supplied (Mscf per year).
- \( \text{EF} \) = Fuel-specific \( \text{CO}_2 \) emission factor (MT \( \text{CO}_2 \)/Mscf).

(3) For natural gas received by the LDC at the city gate that is injected into on-system storage, and/or liquefied and stored, use Equation NN-5 of this section and the default value for the \( \text{CO}_2 \) emission factors found in Table NN-2 of this subpart. Alternatively, a reporter-specific \( \text{CO}_2 \) emission factor may be used, provided it is developed using methods outlined in § 98.404.
Where:

- CO\textsubscript{2l} = Annual CO\textsubscript{2} mass emissions that would result from the combustion or oxidation of the net natural gas that is liquefied and/or stored and not used for deliveries by the LDC within the reported year (metric tons).
- Fuel\textsubscript{l} = Total annual volume of natural gas received by the LDC at the city gate and stored on-system or liquefied and stored in the reporting year (Mscf per year).
- Fuel\textsubscript{1} = Total annual volume of natural gas that is used for deliveries in the reporting year that was not otherwise accounted for in Equation NN–1 or NN–2 of this section (Mscf per year). This primarily includes natural gas previously stored on-system or liquefied and stored that is removed from storage and used for deliveries to customers or other LDCs by the LDC within the reporting year. This also includes natural gas that bypassed the city gate and was delivered directly to LDC systems from producers or natural gas processing plants from local production.
- EF = Fuel-specific CO\textsubscript{2} emission factor (MT CO\textsubscript{2}/Mscf).

(4) Calculate the total CO\textsubscript{2} emissions that would result from the complete combustion or oxidation of the annual supply of natural gas to end-users using Equation NN–6 of this section.

\[
\text{CO}_2 = \sum \text{CO}_2 \text{~l} - \sum \text{CO}_2 \text{~j} - \sum \text{CO}_2 \text{~k} - \sum \text{CO}_2 \text{~l} \quad (\text{Eq. NN-6})
\]

Where:

- CO\textsubscript{2l} = Annual CO\textsubscript{2} mass emissions that would result from the combustion or oxidation of natural gas delivered to end-users using Equation NN–7 of this section and the default values for the CO\textsubscript{2} emission factors found in Table NN–2 of this subpart.
- CO\textsubscript{2m} = Annual CO\textsubscript{2} mass emissions that would result from the combustion or oxidation of each fractionated NGL product “g” received from other fractionators (metric tons).
- Fuel\textsubscript{g} = Total annual volume of each NGL product “g” received (bbls).
- EF\textsubscript{g} = Fuel-specific CO\textsubscript{2} emission factor of NGL product “g” (MT CO\textsubscript{2}/bbl).

(ii) Alternatively, reporter-specific CO\textsubscript{2} emission factors may be used, provided they are developed using methods outlined in §98.404.

\[
\text{CO}_2 \text{~m} = \sum \text{Fuel}_g \times \text{EF}_g \quad (\text{Eq. NN-7})
\]

(2) Calculate the total CO\textsubscript{2} equivalent emissions that would result from the combustion or oxidation of fractionated NGLs supplied less the quantity received by other fractionators using Equation NN–8 of this section.

\[
\text{CO}_2 = \text{CO}_2 \text{~l} - \text{CO}_2 \text{~m} \quad (\text{Eq. NN-8})
\]

Where:

- CO\textsubscript{2l} = Annual CO\textsubscript{2} mass emissions that would result from the combustion or oxidation of
fractionated NGLs delivered to customers or on behalf of customers (metric tons).

\( \text{CO}_2 = \) Annual \( \text{CO}_2 \) mass emissions that would result from the combustion or oxidation of fractionated NGLs delivered to all customers or on behalf of customers as calculated in paragraph (a)(1) or (a)(2) of this section (metric tons).

\( \text{CO}_2 = \) Annual \( \text{CO}_2 \) mass emissions that would result from the combustion or oxidation of fractionated NGLs received from other fractionators and calculated in paragraph (c)(1) of this section (metric tons).

[$74 \text{ FR } 56374, \text{ Oct. 30, 2009, as amended at } 75 \text{ FR } 66478, \text{ Oct. 28, 2010}$]

\( \text{§ 98.404 Monitoring and QA/QC requirements.} \)

(a) Determination of quantity.

(1) NGL fractionators and LDCs shall determine the quantity of NGLs and natural gas using methods in common use in the industry for billing purposes as audited under existing Sarbanes Oxley regulations.

(i) Where an appropriate standard method published by a consensus-based standards organization exists, such a method shall be used. Consensus-based standards organizations include, but are not limited to, the following: ASTM International, the American National Standards Institute (ANSI), the American Gas Association (AGA), the American Society of Mechanical Engineers (ASME), the American Petroleum Institute (API), and the North American Energy Standards Board (NAESB).

(ii) Where no appropriate standard method developed by a consensus-based standards organization exists, industry standard practices shall be followed.

(2) NGL fractionators and LDCs shall base the minimum frequency of the product quantity measurements, to be summed to the annual quantity reported, on the reporter’s standard practices for commercial operations.

(i) For NGL fractionators the minimum frequency of measurements shall be the measurements taken at custody transfers summed to the annual reportable volume.

(ii) For natural gas the minimum frequency of measurement shall be based on the LDC’s standard measurement schedules used for billing purposes and summed to the annual reportable volume.

(3) NGL fractionators shall use measurement for NGLs at custody transfer meters or at such meters that are used to determine the NGL product slate delivered from the fractionation facility.

(4) If a NGL fractionator supplies a product not listed in Table NN–1 of this subpart that is a mixture or blend of two or more products listed in Tables NN–1 and NN–2 of this subpart, the NGL fractionator shall report the quantities of the constituents of the mixtures or blends separately.

(5) For an LDC using Equation NN–1 or NN–2 of this subpart, the point(s) of measurement for the natural gas volume supplied shall be the LDC city gate meter(s).

(i) If the LDC makes its own quantity measurements according to established business practices, its own measurements shall be used.

(ii) If the LDC does not make its own quantity measurements according to established business practices, it shall use its delivering pipeline invoiced measurements for natural gas deliveries to the LDC city gate, used in determining daily system sendout.

(6) An LDC using Equation NN–3 of this subpart shall measure natural gas at the custody transfer meters.

(7) An LDC using Equation NN–4 of this subpart shall measure natural gas at the customer meters. The reporter shall consider the volume delivered through a single particular meter at a single particular location as the volume delivered to an individual end-user.

(8) An LDC using Equation NN–5 of this subpart shall measure natural gas as follows:

(i) Fuel\(_1\) shall be measured at the on-system storage injection and/or natural gas deliveries sent out at the meters measuring natural gas to be liquefied.

(ii) Fuel\(_2\) shall be measured at the meters used for measuring on-system storage withdrawals and/or LNG vaporization injection. If Fuel\(_2\) is from a source other than storage, the appropriate meter shall be used to measure the quantity.

(9) An LDC shall measure all natural gas under the following standard industry temperature and pressure conditions: Cubic foot of gas at a temperature of 60 degrees Fahrenheit and at an...
§ 98.405 Procedures for estimating missing data.

(a) Whenever a quality-assured value of the quantity of natural gas liquids or natural gas supplied during any period is unavailable (e.g., if a flow meter malfunctions), a substitute data value for the missing quantity measurement must be used in the calculations according to paragraphs (b) and (c) of this section.

(b) Determination of quantity.

(1) NGL fractionators shall substitute meter records provided by pipeline(s) for all pipeline receipts of NGLs; by manifests for deliveries made to trucks or rail cars; or metered quantities accepted by the entities purchasing the output from the fractionator whether by pipeline or by truck or rail car. In cases where the metered data from the receiving pipeline(s) or purchasing entities are not available, fractionators may substitute estimates based on contract quantities required to be delivered under purchase or delivery contracts with other parties.

(2) LDCs shall either substitute their delivering pipeline metered deliveries at the city gate or substitute nominations and scheduled delivery quantities for the period when metered values of actual deliveries are not available.

(c) Determination of HHV and EF.

(1) Whenever an LDC that makes its own HHV measurements according to established business practices cannot follow the quality assurance procedures for developing a reporter-specific HHV, as specified in §98.404, during any period for any reason, the reporter shall use either its delivering pipeline measurements or the default HHV provided in Table NN–1 of this part for that period.

(2) Whenever an LDC that does not make its own HHV measurements according to established business practices or an NGL fractionator cannot follow the quality assurance procedures for developing a reporter-specific
HHV, as specified in §98.404, during any period for any reason, the reporter shall use the default HHV provided in Table NN–1 of this part for that period.

(3) Whenever a NGL fractionator cannot follow the quality assurance procedures for developing a reporter-specific HHV, as specified in §98.404, during any period for any reason, the NGL fractionator shall use the default HHV provided in Table NN–1 of this part for that period.

(4) Whenever a reporter cannot follow the quality assurance procedures for developing a reporter-specific EF, as specified in §98.404, during any period for any reason, the reporter shall use the default EF provided in §98.408 for that period.

§ 98.406 Data reporting requirements.

(a) In addition to the information required by §98.3(c), the annual report for each NGL fractionator covered by this rule shall contain the following information:

(1) Annual quantity (in barrels) of each NGL product supplied to downstream facilities in the following product categories: ethane, propane, normal butane, isobutane, and pentanes plus.

(2) Annual quantity (in barrels) of each NGL product received from other NGL fractionators in the following product categories: ethane, propane, normal butane, isobutane, and pentanes plus.

(3) Annual volumes in Mscf of natural gas received for processing.

(4) Annual quantity (in barrels) of y-grade, bulk NGLs received from others for fractionation.

(5) Annual quantity (in barrels) of propane that the NGL fractionator odorizes at the facility and delivers to others.

(6) Annual CO₂ emissions (metric tons) that would result from the complete combustion or oxidation of the quantities in paragraphs (a)(1) and (a)(2) of this section, calculated in accordance with §98.403(a) and (c)(1).

(7) Annual CO₂ mass emissions (metric tons) that would result from the combustion or oxidation of fractionated NGLs supplied less the quantity received by other fractionators, calculated in accordance with §98.403(c)(2).

(b) In addition to the information required by §98.3(c), the annual report for each LDC shall contain the following information:

(1) Annual volume in Mscf of natural gas received by the LDC at its city gate stations for redelivery on the LDC’s distribution system, including for use by the LDC.

(2) Annual volume in Mscf of natural gas placed into storage.

(3) Annual volume in Mscf of vaporized liquefied natural gas (LNG) produced at on-system vaporization facilities for delivery on the distribution system that is not accounted for in paragraph (b)(1) of this section.

(4) Annual volume in Mscf of natural gas withdrawn from on-system storage (that is not delivered to the city gate) for delivery on the distribution system.

(5) Annual volume in Mscf of natural gas delivered directly to LDC systems from producers or natural gas processing plants from local production.

(6) Annual volume in Mscf of natural gas delivered to downstream gas transmission pipelines and other local distribution companies.

(7) Annual volume in Mscf of natural gas delivered by LDC to each meter registering supply equal to or greater than 460,000 Mcsf during the calendar year.

(8) The total annual CO₂ mass emissions (metric tons) associated with the volumes in paragraphs (b)(1) through (b)(7) of this section, calculated in accordance with §98.403(a) and (b)(1) through (b)(3).

(9) Annual CO₂ emissions (metric tons) that would result from the complete combustion or oxidation of the
§ 98.407 Records that must be retained.

In addition to the information required by §98.3(g), each annual report must contain the following information:

(a) Records of all meter readings and documentation to support volumes of natural gas and NGLs that are reported under this part.

(b) Records documenting any estimates of missing metered data and showing the calculations of the values used for the missing data.

(c) Calculations and worksheets used to estimate CO\(_2\) emissions for the volumes reported under this part.

(d) Records related to the large end-users identified in §98.406(b)(7).

(e) Records relating to measured Btu content or carbon content showing specific industry standards used to develop reporter-specific higher heating values and emission factors.

(f) Records of such audits as required by Sarbanes Oxley regulations on the accuracy of measurements of volumes of natural gas and NGLs delivered to customers or on behalf of customers.

§ 98.408 Definitions.

All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Default high heating value factor</th>
<th>Default CO(_2) emission factor (kg CO(_2)/MMBtu)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td>1.028 MMBtu/MMcf</td>
<td>53.02</td>
</tr>
<tr>
<td>Propane</td>
<td>3.822 MMBtu/bbl</td>
<td>61.46</td>
</tr>
<tr>
<td>Normal butane</td>
<td>4.242 MMBtu/bbl</td>
<td>65.15</td>
</tr>
<tr>
<td>Ethane</td>
<td>4.032 MMBtu/bbl</td>
<td>62.64</td>
</tr>
<tr>
<td>Isobutane</td>
<td>4.074 MMBtu/bbl</td>
<td>64.91</td>
</tr>
<tr>
<td>Pentanes plus</td>
<td>4.620 MMBtu/bbl</td>
<td>70.02</td>
</tr>
</tbody>
</table>
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§ 98.413

TABLE NN–2 TO SUBPART HH OF PART 98—LOOKUP DEFAULT VALUES FOR CALCULATION METHODOLOGY 2 OF THIS SUBPART

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Unit</th>
<th>Default CO₂ emission value (MT CO₂/Unit)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td>Mcf</td>
<td>0.055</td>
</tr>
<tr>
<td>Propane</td>
<td>Barrel</td>
<td>0.235</td>
</tr>
<tr>
<td>Normal butane</td>
<td>Barrel</td>
<td>0.276</td>
</tr>
<tr>
<td>Ethane</td>
<td>Barrel</td>
<td>0.253</td>
</tr>
<tr>
<td>Isobutane</td>
<td>Barrel</td>
<td>0.266</td>
</tr>
<tr>
<td>Pentanes plus</td>
<td>Barrel</td>
<td>0.324</td>
</tr>
</tbody>
</table>

Subpart OO—Suppliers of Industrial Greenhouse Gases

§ 98.410 Definition of the source category.

(a) The industrial gas supplier source category consists of any facility that produces a fluorinated GHG or nitrous oxide, any bulk importer of fluorinated GHGs or nitrous oxide, and any bulk exporter of fluorinated GHGs or nitrous oxide.

(b) To produce a fluorinated GHG means to manufacture a fluorinated GHG from any raw material or feedstock chemical. Producing a fluorinated GHG includes the manufacture of a fluorinated GHG as an isolated intermediate for use in a process that will result in its transformation either at or outside of the production facility. Producing a fluorinated GHG also includes the creation of a fluorinated GHG (with the exception of HFC–23) that is captured and shipped off site for any reason, including destruction. Producing a fluorinated GHG does not include the reuse or recycling of a fluorinated GHG, the creation of HFC–23 during the production of HCFC–22, the creation of intermediates that are created and transformed in a single process with no storage of the intermediates, or the creation of fluorinated GHGs that are released or destroyed at the production facility before the production measurement at § 98.414(a).

(c) To produce nitrous oxide means to produce nitrous oxide by thermally decomposing ammonium nitrate (NH₄NO₃). Producing nitrous oxide does not include the reuse or recycling of nitrous oxide or the creation of by-products that are released or destroyed at the production facility.

§ 98.411 Reporting threshold.

Any supplier of industrial greenhouse gases who meets the requirements of § 98.2(a)(4) must report GHG emissions.

§ 98.412 GHGs to report.

You must report the GHG emissions that would result from the release of the nitrous oxide and each fluorinated GHG that you produce, import, export, transform, or destroy during the calendar year.

§ 98.413 Calculating GHG emissions.

(a) Calculate the total mass of each fluorinated GHG or nitrous oxide produced annually, except for amounts that are captured solely to be shipped off site for destruction, by using Equation OO-1 of this section:

\[
P = \sum_{p=1}^{n} P_p \quad \text{(Eq. OO-1)}
\]

P = Mass of fluorinated GHG or nitrous oxide produced annually.

Pₚ = Mass of fluorinated GHG or nitrous oxide produced over the period “p”.

(b) Calculate the total mass of each fluorinated GHG or nitrous oxide produced over the period “p” by using Equation OO-2 of this section:
§ 98.414 Monitoring and QA/QC requirements.

(a) The mass of fluorinated GHGs or nitrous oxide coming out of the production process shall be measured using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of one percent of full scale or better. If the measured mass includes more than one fluorinated GHG, the concentrations of each of the fluorinated GHGs, other than low-concentration constituents, shall be measured as set forth in paragraph (n) of this section. For each fluorinated GHG, the mean of the concentrations of that fluorinated GHG (mass fraction) measured under paragraph (n) of this section shall be multiplied by the mass measurement to obtain the mass of that fluorinated GHG coming out of the production process.

(b) The mass of any used fluorinated GHGs or used nitrous oxide added back into the production process upstream of the output measurement in paragraph (a) of this section shall be measured using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of one percent of full scale or better. If the mass in paragraph (a) of this section is measured by weighing containers that include returned heels as well as newly produced fluorinated GHGs, the returned heels shall be considered used fluorinated GHGs for purposes of this paragraph (b) of this section and §98.413(b).

(c) The mass of fluorinated GHGs or nitrous oxide fed into the transformation process shall be measured using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of one percent of full scale or better.

(d) The fraction of the fluorinated GHGs or nitrous oxide fed into the transformation process that is actually transformed shall be estimated considering yield calculations or quantities of unreacted fluorinated GHGs or nitrous oxide permanently removed from the process and recovered, destroyed, or emitted.

(e) The mass of fluorinated GHG or nitrous oxide sent to another facility for transformation shall be measured using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of one percent of full scale or better.

(f) The mass of fluorinated GHG sent to another facility for destruction shall be measured using flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of one percent of full scale or better. If the measured mass includes more than trace concentrations of materials other than the
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fluorinated GHG, the concentration of the fluorinated GHG shall be estimated considering current or previous representative concentration measurements and other relevant process information. This concentration (mass fraction) shall be multiplied by the mass measurement to obtain the mass of the fluorinated GHG sent to another facility for destruction.

(g) You must estimate the share of the mass of fluorinated GHGs in paragraph (f) of this section that is comprised of fluorinated GHGs that are not included in the mass produced in §98.413(a) because they are removed from the production process as by-products or other wastes.

(h) You must measure the mass of each fluorinated GHG that is fed into the destruction device and that was previously produced as defined at §98.410(b). Such fluorinated GHGs include but are not limited to quantities that are shipped to the facility by another facility for destruction and quantities that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore destroyed. You must use flowmeters, weigh scales, or a combination of volumetric and density measurements with an accuracy and precision of one percent of full scale or better. If the measured mass includes more than trace concentrations of materials other than the fluorinated GHG being destroyed, you must estimate the concentrations of the fluorinated GHG being destroyed considering current or previous representative concentration measurements and other relevant process information. You must multiply this concentration (mass fraction) by the mass measurement to obtain the mass of the fluorinated GHG fed into the destruction device.

(i) Very small quantities of fluorinated GHGs that are difficult to measure because they are entrained in other media such as destroyed filters and destroyed sample containers are exempt from paragraphs (f) and (h) of this section.

(j) [Reserved]

(k) For purposes of Equation OO–4 of this subpart, the destruction efficiency can be equated to the destruction efficiency determined during a previous performance test of the destruction device or, if no performance test has been done, the destruction efficiency provided by the manufacturer of the destruction device.

(l) In their estimates of the mass of fluorinated GHGs destroyed, fluorinated GHG production facilities that destroy fluorinated GHG shall account for any temporary reductions in the destruction efficiency that result from any startups, shutdowns, or malfunctions of the destruction device, including departures from the operating conditions defined in state or local permitting requirements and/or oxidizer manufacturer specifications.

(m) Calibrate all flow meters, weigh scales, and combinations of volumetric and density measures that are used to measure or calculate quantities that are to be reported under this subpart prior to the first year for which GHG emissions are reported under this part. Calibrations performed prior to the effective date of this rule satisfy this requirement. Recalibrate all flow meters, weigh scales, and combinations of volumetric and density measures at the minimum frequency specified by the manufacturer. Use NIST-traceable standards and suitable methods published by a consensus standards organization (e.g., ASTM, ASME, ISO, or others).

(n) If the mass coming out of the production process includes more than one fluorinated GHG, you shall measure the concentrations of all of the fluorinated GHGs, other than low-concentration constituents, as follows:

(1) Analytical Methods. Use a quality-assured analytical measurement technology capable of detecting the analyte of interest at the concentration of interest and use a procedure validated with the analyte of interest at the concentration of interest. Where standards for the analyte are not available, a chemically similar surrogate may be used. Acceptable analytical measurement technologies include but are not limited to gas chromatography (GC) with an appropriate detector, infrared (IR), fourier transform infrared (FTIR), and nuclear magnetic resonance (NMR). Acceptable methods include EPA Method 18 in appendix A–1 of 40
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CFR part 60; EPA Method 320 in appendix A of 40 CFR part 63; the Protocol for Measuring Destruction or Removal Efficiency (DRE) of Fluorinated Greenhouse Gas Abatement Equipment in Electronics Manufacturing, Version 1, EPA-430-R-10-003, (March 2010) (incorporated by reference, see §98.7); ASTM D6348-03 Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy (incorporated by reference, see §98.7); or other analytical methods validated using EPA Method 301 in appendix A of 40 CFR part 63 or some other scientifically sound validation protocol. The validation protocol may include analytical technology manufacturer specifications or recommendations.

(2) Documentation in GHG Monitoring Plan. Describe the analytical method(s) used under paragraph (n)(1) of this section in the site GHG Monitoring Plan as required under §98.3(g)(5). At a minimum, include in the description of the method a description of the analytical measurement equipment and procedures, quantitative estimates of the method’s accuracy and precision for the analytes of interest at the concentrations of interest, as well as a description of how these accuracies and precisions were estimated, including the validation protocol used.

(3) Frequency of measurement. Perform the measurements at least once by February 15, 2011 if the fluorinated GHG product is being produced on December 17, 2010. Perform the measurements within 60 days of commencing production of any fluorinated GHG product that was not being produced on December 17, 2010. Repeat the measurements if an operational or process change occurs that could change the identities or significantly change the concentrations of the fluorinated GHG constituents of the fluorinated GHG product. Complete the repeat measurements within 60 days of the operational or process change.

(4) Measure all product grades. Where a fluorinated GHG is produced at more than one purity level (e.g., pharmaceutical grade and refrigerant grade), perform the measurements for each purity level.

(5) Number of samples. Analyze a minimum of three samples of the fluorinated GHG product that have been drawn under conditions that are representative of the process producing the fluorinated GHG product. If the relative standard deviation of the measured concentrations of any of the fluorinated GHG constituents (other than low-concentration constituents) is greater than or equal to 15 percent, draw and analyze enough additional samples to achieve a total of at least six samples of the fluorinated GHG product.

(o) All analytical equipment used to determine the concentration of fluorinated GHGs, including but not limited to gas chromatographs and associated detectors, IR, FTIR and NMR devices, shall be calibrated at a frequency needed to support the type of analysis specified in the site GHG Monitoring Plan as required under §§98.414(n) and 98.3(g)(5) of this part. Quality assurance samples at the concentrations of concern shall be used for the calibration. Such quality assurance samples shall consist of or be prepared from certified standards of the analytes of concern where available; if not available, calibration shall be performed by a method specified in the GHG Monitoring Plan.

(p) Isolated intermediates that are produced and transformed at the same facility are exempt from the monitoring requirements of this section.

(q) Low-concentration constituents are exempt from the monitoring and QA/QC requirements of this section.


§98.415 Procedures for estimating missing data.

(a) A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable (e.g., if a meter malfunctions), a substitute data value for the missing parameter shall be used in the calculations, according to paragraph (b) of this section.

(b) For each missing value of the mass produced, fed into the production...
process (for used material being reclaimed), fed into the transformation process, fed into destruction devices, sent to another facility for transformation, or sent to another facility for destruction, the substitute value of that parameter shall be a secondary mass measurement where such a measurement is available. For example, if the mass produced is usually measured with a flowmeter at the inlet to the day tank and that flowmeter fails to meet an accuracy or precision test, malfunctions, or is rendered inoperable, then the mass produced may be estimated by calculating the change in volume in the day tank and multiplying it by the density of the product. Where a secondary mass measurement is not available, the substitute value of the parameter shall be an estimate based on a related parameter. For example, if a flowmeter measuring the mass fed into a destruction device is rendered inoperable, then the mass fed into the destruction device may be estimated using the production rate and the previously observed relationship between the production rate and the mass flow rate into the destruction device.

§ 98.416 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the following information:

(a) Each fluorinated GHG or nitrous oxide production facility shall report the following information:

(1) Mass in metric tons of each fluorinated GHG or nitrous oxide produced at that facility by process, except for amounts that are captured solely to be shipped off site for destruction.

(2) Mass in metric tons of each fluorinated GHG or nitrous oxide transformed at that facility by process.

(3) Mass in metric tons of each fluorinated GHG that is destroyed at that facility and that was previously produced as defined at §98.410(b). Quantities to be reported under this paragraph (a)(3) of this section include but are not limited to quantities that are shipped to the facility by another facility for destruction and quantities that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore destroyed.

(4) [Reserved]

(5) Total mass in metric tons of each fluorinated GHG or nitrous oxide sent to another facility for transformation.

(6) Total mass in metric tons of each fluorinated GHG sent to another facility for destruction, except fluorinated GHGs that are not included in the mass produced in §98.413(a) because they are removed from the production process as by-products or other wastes. Quantities to be reported under this paragraph (a)(6) could include, for example, fluorinated GHGs that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore sent to another facility for destruction.

(7) Total mass in metric tons of each fluorinated GHG that is sent to another facility for destruction and that is not included in the mass produced in §98.413(a) because it is removed from the production process as a byproduct or other waste.

(8) Total mass in metric tons of each reactant fed into the F-GHG or nitrous oxide production process, by process.

(9) Total mass in metric tons of the reactants, by-products, and other wastes permanently removed from the F-GHG or nitrous oxide production process, by process.

(10) For transformation processes that do not produce an F-GHG or nitrous oxide, mass in metric tons of any fluorinated GHG or nitrous oxide fed into the transformation process, by process.

(11) Mass in metric tons of each fluorinated GHG that is fed into the destruction device and that was previously produced as defined at §98.410(b). Quantities to be reported under this paragraph (a)(11) of this section include but are not limited to quantities that are shipped to the facility by another facility for destruction and quantities that are returned to the facility for reclamation but are found to be irretrievably contaminated and are therefore destroyed.

(12) Mass in metric tons of each fluorinated GHG or nitrous oxide that
is measured coming out of the production process, by process.

(13) Mass in metric tons of each used fluorinated GHGs or nitrous oxide added back into the production process (e.g., for reclamation), including returned heels in containers that are weighed to measure the mass in §98.414(a), by process.

(14) Names and addresses of facilities to which any nitrous oxide or fluorinated GHGs were sent for transformation, and the quantities (metric tons) of nitrous oxide and of each fluorinated GHG that were sent to each for transformation.

(15) Names and addresses of facilities to which any fluorinated GHGs were sent for destruction, and the quantities (metric tons) of each fluorinated GHG that were sent to each for destruction.

(16) Where missing data have been estimated pursuant to §98.415, the reason the data were missing, the length of time the data were missing, the method used to estimate the missing data, and the estimates of those data.

(b) By March 31, 2011 or within 60 days of commencing fluorinated GHG destruction, whichever is later, a fluorinated GHG production facility or importer that destroys fluorinated GHGs shall submit a one-time report containing the following information for each destruction process:

(1) Destruction efficiency (DE).

(2) Methods used to determine the destruction efficiency.

(3) Methods used to record the mass of fluorinated GHG destroyed.

(4) Chemical identity of the fluorinated GHG(s) used in the performance test conducted to determine DE.

(5) Name of all applicable federal or state regulations that may apply to the destruction process.

(6) If any process changes affect unit destruction efficiency or the methods used to record mass of fluorinated GHG destroyed, then a revised report must be submitted to reflect the changes. The revised report must be submitted to EPA within 60 days of the change.

(c) Each bulk importer of fluorinated GHGs or nitrous oxide shall submit an annual report that summarizes its imports at the corporate level, except for shipments including less than twenty-five kilograms of fluorinated GHGs or nitrous oxide, transshipments, and heels that meet the conditions set forth at §98.417(e). The report shall contain the following information for each import:

(1) Total mass in metric tons of nitrous oxide and each fluorinated GHG imported in bulk, including each fluorinated GHG constituent of the fluorinated GHG product that makes up between 0.5 percent and 100 percent of the product by mass.

(2) Total mass in metric tons of nitrous oxide and each fluorinated GHG imported in bulk and sold or transferred to persons other than the importer for use in processes resulting in the transformation or destruction of the chemical.

(3) Date on which the fluorinated GHGs or nitrous oxide were imported.

(4) Port of entry through which the fluorinated GHGs or nitrous oxide passed.

(5) Country from which the imported fluorinated GHGs or nitrous oxide were imported.

(6) Commodity code of the fluorinated GHGs or nitrous oxide shipped.

(7) Importer number for the shipment.

(8) Total mass in metric tons of each fluorinated GHG destroyed by the importer.

(9) If applicable, the names and addresses of the persons and facilities to which the nitrous oxide or fluorinated GHGs were sold or transferred for transformation, and the quantities (metric tons) of nitrous oxide and of each fluorinated GHG that were sold or transferred to each facility for transformation.

(10) If applicable, the names and addresses of the persons and facilities to which the fluorinated GHGs were sold or transferred for destruction, and the quantities (metric tons) of each fluorinated GHG that were sold or transferred to each facility for destruction.

(d) Each bulk exporter of fluorinated GHGs or nitrous oxide shall submit an annual report that summarizes its exports at the corporate level, except for shipments including less than twenty-five kilograms of fluorinated GHGs or
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nitrous oxide, transshipments, and heels. The report shall contain the following information for each export:

(1) Total mass in metric tons of nitrous oxide and each fluorinated GHG exported in bulk.

(2) Names and addresses of the exporter and the recipient of the exports.

(3) Exporter’s Employee Identification Number.

(4) Commodity code of the fluorinated GHGs and nitrous oxide shipped.

(5) Date on which, and the port from which, fluorinated GHGs and nitrous oxide were exported from the United States or its territories.

(6) Country to which the fluorinated GHGs or nitrous oxide were exported.

(e) By March 31, 2011, or within 60 days of commencing fluorinated GHG production, whichever is later, a fluorinated GHG production facility shall submit a one-time report describing the following information:

(1) The method(s) by which the producer in practice measures the mass of fluorinated GHGs produced, including the instrumentation used (Coriolis flowmeter, other flowmeter, weigh scale, etc.) and its accuracy and precision.

(2) The method(s) by which the producer in practice estimates the mass of fluorinated GHGs fed into the transformation process, including the instrumentation used (Coriolis flowmeter, other flowmeter, weigh scale, etc.) and its accuracy and precision.

(3) The method(s) by which the producer in practice estimates the fraction of fluorinated GHGs fed into the transformation process that is actually transformed, and the estimated precision and accuracy of this estimate.

(g) Isolated intermediates that are produced and transformed at the same facility are exempt from the reporting requirements of this section.

(h) Low-concentration constituents are exempt from the reporting requirements of this section.


§ 98.417 Records that must be retained.

(a) In addition to the data required by §98.3(g), the fluorinated GHG production facility shall retain the following records:

(1) Dated records of the data used to estimate the data reported under §98.416.

(2) Records documenting the initial and periodic calibration of the analytical equipment (including but not limited to GC, IR, FTIR, or NMR), weigh scales, flowmeters, and volumetric and density measures used to measure the quantities reported under this subpart, including the manufacturer directions or industry standards used for calibration pursuant to §98.414(m) and (o).

(b) In addition to the data required by paragraph (a) of this section, any fluorinated GHG production facility that destroys fluorinated GHGs shall keep records of test reports and other information documenting the facility’s one-time destruction efficiency report in §98.416(b).
(c) In addition to the data required by §98.3(g), the bulk importer shall retain the following records substantiating each of the imports that they report:

(1) A copy of the bill of lading for the import.
(2) The invoice for the import.
(3) The U.S. Customs entry form.

(d) In addition to the data required by §98.3(g), the bulk exporter shall retain the following records substantiating each of the exports that they report:

(1) A copy of the bill of lading for the export and
(2) The invoice for the export.

(e) Every person who imports a container with a heel that is not reported under §98.416(c) shall keep records of the amount brought into the United States that document that the residual amount in each shipment is less than 10 percent of the volume of the container and will:

(1) Remain in the container and be included in a future shipment.
(2) Be recovered and transformed.
(3) Be recovered and destroyed.
(4) Be recovered and included in a future shipment.

(f) Isolated intermediates that are produced and transformed at the same facility are exempt from the recordkeeping requirements of this section.

(g) Low-concentration constituents are exempt from the recordkeeping requirements of this section.

Low-concentration constituent means, for purposes of fluorinated GHG production and export, a fluorinated GHG constituent of a fluorinated GHG product that occurs in the product in concentrations below 0.1 percent by mass. For purposes of fluorinated GHG import, low-concentration constituent means a fluorinated GHG constituent of a fluorinated GHG product that occurs in the product in concentrations below 0.5 percent by mass. Low-concentration constituents do not include fluorinated GHGs that are deliberately combined with the product (e.g., to affect the performance characteristics of the product).

[75 FR 79169, Dec. 17, 2010]

Subpart PP—Suppliers of Carbon Dioxide

§98.420 Definition of the source category.

(a) The carbon dioxide (CO₂) supplier source category consists of the following:

(1) Facilities with production process units that capture a CO₂ stream for purposes of supplying CO₂ for commercial applications or that capture and maintain custody of a CO₂ stream in order to sequester or otherwise inject it underground. Capture refers to the initial separation and removal of CO₂ from a manufacturing process or any other process.
(2) Facilities with CO₂ production wells that extract or produce a CO₂ stream for purposes of supplying CO₂ for commercial applications or that extract and maintain custody of a CO₂ stream in order to sequester or otherwise inject it underground.
(3) Importers or exporters of bulk CO₂.

(b) This source category is focused on upstream supply. It does not cover:
(1) Storage of CO₂ above ground or in geologic formations.
(2) Use of CO₂ in enhanced oil and gas recovery.
(3) Transportation or distribution of CO₂.
(4) Purification, compression, or processing of CO₂.

§98.418 Definitions.

Except as provided below, all of the terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part. If a conflict exists between a definition provided in this subpart and a definition provided in subpart A, the definition in this subpart shall take precedence for the reporting requirements in this subpart.

Isolated intermediate means a product of a process that is stored before subsequent processing. An isolated intermediate is usually a product of chemical synthesis. Storage of an isolated intermediate marks the end of a process. Storage occurs at any time the intermediate is placed in equipment used solely for storage.
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(5) On-site use of CO₂ captured on site.

(c) This source category does not include CO₂ imported or exported in equipment, such as fire extinguishers.

§ 98.421 Reporting threshold.

Any supplier of CO₂ who meets the requirements of §98.2(a)(4) of subpart A of this part must report the mass of CO₂ captured, extracted, imported, or exported.

§ 98.422 GHGs to report.

(a) Mass of CO₂ captured from production process units.

(b) Mass of CO₂ extracted from CO₂ production wells.

(c) Mass of CO₂ imported.

(d) Mass of CO₂ exported.


§ 98.423 Calculating CO₂ supply.

(a) Except as allowed in paragraph (b) of this section, calculate the annual mass of CO₂ captured, extracted, imported, or exported through each flow meter in accordance with the procedures specified in either paragraph (a)(1) or (a)(2) of this section. If multiple flow meters are used, you shall calculate the annual mass of CO₂ for all flow meters according to the procedures specified in paragraph (a)(3) of this section.

(1) For each mass flow meter, you shall calculate quarterly the mass of CO₂ in a CO₂ stream in metric tons by multiplying the mass flow by the composition data, according to Equation PP–1 of this section. Mass flow and composition data measurements shall be made in accordance with §98.424 of this subpart.

\[
CO_{2,u} = \sum_{p=1}^{4} Q_{p,u} \times C_{CO_{2,p,u}}
\]  
(Eq. PP-1)

Where:

- \( CO_{2,u} \) = Annual mass of CO₂ (metric tons) through flow meter \( u \).
- \( C_{CO_{2,p,u}} \) = Quarterly CO₂ concentration measurement in flow for flow meter \( u \) in quarter \( p \) (wt. %CO₂).
- \( Q_{p,u} \) = Quarterly mass flow rate measurement for flow meter \( u \) in quarter \( p \) (metric tons).
- \( p \) = Quarter of the year.
- \( u \) = Flow meter.

(2) For each volumetric flow meter, you shall calculate quarterly the mass of CO₂ in a CO₂ stream in metric tons by multiplying the volumetric flow by the concentration and density data, according to Equation PP–2 of this section. Volumetric flow, concentration and density data measurements shall be made in accordance with §98.424 of this section.

\[
CO_{2,u} = \sum_{p=1}^{4} Q_{p} \times D_{p} \times C_{CO_{2},p}
\]  
(Eq. PP-2)

Where:

- \( CO_{2,u} \) = Annual mass of CO₂ (metric tons) through flow meter \( u \).
- \( C_{CO_{2},p} \) = Quarterly CO₂ concentration measurement in flow for flow meter \( u \) in quarter \( p \) (measured as either volume % CO₂ or weight % CO₂).
- \( Q_{p} \) = Quarterly volumetric flow rate measurement for flow meter \( u \) in quarter \( p \) (standard cubic meters).
- \( D_{p} \) = Density of CO₂ in quarter \( p \) (metric tons CO₂ per standard cubic meter) for flow meter \( u \) if \( C_{CO_{2}} \) is measured as volume % CO₂, or density of the whole CO₂ stream for flow meter \( u \) (metric tons per standard cubic meter) if \( C_{CO_{2}} \) is measured as weight % CO₂.
- \( p \) = Quarter of the year.
- \( u \) = Flow meter.
(3) To aggregate data, use either Equation PP-3a or PP-3b in this paragraph, as appropriate.

(i) For facilities with production process units that capture a CO₂ stream and either measure it after segregation or do not segregate the flow, calculate the total CO₂ supplied in accordance with Equation PP-3a.

\[
\text{CO}_2 = \sum_{p=1}^{U} \text{CO}_2_{u,p}
\]

(Eq. PP-3a)

Where:
- \(\text{CO}_2\) = Total annual mass of CO₂ (metric tons).
- \(\text{CO}_2_{u,p}\) = Annual mass of CO₂ (metric tons) through flow meter u in quarter p (wt. % CO₂).
- \(Q_{p,u}\) = Quarterly volume of contents supplied in all containers delivered by flow meter u in quarter p (standard cubic meters).
- \(D_{p}\) = Quarterly CO₂ density determination for CO₂ stream u in quarter p (metric tons per standard cubic meter) if CO₂ is measured as volume % CO₂.
- \(C_{\text{CO}_2,p,u}\) = Quarterly CO₂ concentration measurement of CO₂ stream u that delivers CO₂ to containers in quarter p (measured as either volume % CO₂ or weight % CO₂).
- \(Q_{p,u}\) = Quarterly mass of contents supplied in all containers delivered by CO₂ stream u in quarter p (metric tons).
- \(p\) = Quarter of the year.
- \(u\) = Flow meter.
- \(v\) = Subsequent flow meter.

(ii) For facilities with production process units that capture a CO₂ stream and measure it ahead of segregation, calculate the total CO₂ supplied in accordance with Equation PP-3b.

\[
\text{CO}_2 = \sum_{p=1}^{U} \text{CO}_2_{u,p} - \sum_{p=1}^{V} \text{CO}_2_{v,p}
\]

(Eq. PP-3b)

Where:
- \(\text{CO}_2\) = Total annual mass of CO₂ (metric tons).
- \(\text{CO}_2_{u,p}\) = Annual mass of CO₂ (metric tons) through main flow meter u in quarter p.
- \(\text{CO}_2_{v,p}\) = Annual mass of CO₂ (metric tons) through subsequent flow meter v for use on site.
- \(u\) = Main flow meter.
- \(v\) = Subsequent flow meter.

(b) As an alternative to paragraphs (a)(1) through (3) of this section for CO₂ that is supplied in containers, calculate the annual mass of CO₂ supplied in containers delivered by each CO₂ stream in accordance with the procedures specified in either paragraph (b)(1) or (b)(2) of this section. If multiple CO₂ streams are used to deliver CO₂ to containers, you shall calculate the annual mass of CO₂ supplied in containers delivered by each CO₂ stream in accordance with the procedures specified in paragraph (b)(3) of this section.

(1) For each CO₂ stream that delivers CO₂ to containers, for which mass is measured, you shall calculate CO₂ supply in containers using Equation PP-1 of this section.

Where:
- \(\text{CO}_2\) = Annual mass of CO₂ (metric tons) supplied in containers delivered by CO₂ stream u.
- \(C_{\text{CO}_2,p,u}\) = Quarterly CO₂ concentration measurement of CO₂ stream u that delivers CO₂ to containers in quarter p (wt. % CO₂).
- \(Q_u\) = Quarterly mass of contents supplied in all containers delivered by CO₂ stream u in quarter p (metric tons).
- \(p\) = Quarter of the year.
- \(u\) = CO₂ stream that delivers to containers.

(2) For each CO₂ stream that delivers to containers, for which volume is measured, you shall calculate CO₂ supply in containers using Equation PP-2 of this section.
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Monitoring and QA/QC requirements.

(a) Determination of quantity.

(1) Reporters following the procedures in § 98.423(a) shall determine quantity using a flow meter or meters located in accordance with this paragraph.

(i) If the CO₂ stream is segregated such that only a portion is captured for commercial application or for injection, you must locate the flow meter according to the following:

(A) For reporters following the procedures in § 98.423(a)(3)(i), you must locate the flow meter(s) after the point of segregation.

(B) For reporters following the procedures in paragraph (a)(3)(ii) of § 98.423, you must locate the main flow meter(s) on the captured CO₂ stream(s) prior to the point of segregation and the subsequent flow meter(s) on the CO₂ stream(s) for on-site use after the point of segregation. You may only follow the procedures in paragraph (a)(3)(ii) of § 98.423 if the CO₂ stream(s) for on-site use is/are the only diversion(s) from the main captured CO₂ stream(s) after the main flow meter location(s).

(ii) Reporters that have a mass flow meter or volumetric flow meter installed to measure the flow of a CO₂ stream that meets the requirements of paragraph (a)(1)(i) of this section shall base calculations in § 98.423 of this subpart on the installed mass flow or volumetric flow meters.

(iii) Reporters that do not have a mass flow meter or volumetric flow meter installed to measure the flow of the CO₂ stream that meets the requirements of paragraph (a)(1)(i) of this section shall base calculations in § 98.423 of this subpart on the installed mass flow or volumetric flow meters.

(2) Reporters following the procedures in paragraph (b) of § 98.423 shall determine quantity in accordance with this paragraph.

(i) Reporters that supply CO₂ in containers using weigh bills, scales, or load cells shall measure the mass of contents of each CO₂ container to which the CO₂ stream is delivered, sum the mass of contents supplied in all containers to which the CO₂ stream is delivered during each quarter, sample the CO₂ stream delivering CO₂ to containers on a quarterly basis to determine the composition of the CO₂ stream, and apply Equation PP–1.

(ii) Reporters that supply CO₂ in containers using loaded container volumes shall measure the volume of contents of each CO₂ container to which the CO₂ stream is delivered, sum the volume of

Where:

\[ \text{CO}_2 = \sum_{p=1}^{t} Q \]

(Eq. PP–4)

CO₂,p = Annual mass of CO₂ (metric tons) supplied in containers delivered by CO₂ stream p.

p = Quarter of the year.

u = CO₂ stream that delivers to containers.

CO₂,u = Annual mass of CO₂ (metric tons) supplied in containers delivered by CO₂ stream u.

u = CO₂ stream that delivers to containers.
contents supplied in all containers to which the CO₂ stream is delivered during each quarter, sample the CO₂ stream on a quarterly basis to determine the composition of the CO₂ stream, determine the density quarterly, and apply Equation PP–2.

(3) Importers or exporters that import or export CO₂ in containers shall measure the mass in each CO₂ container using weigh bills, scales, or load cells and sum the mass in all containers imported or exported during the reporting year.

(4) All flow meters, scales, and load cells used to measure quantities that are reported in §98.423 of this subpart shall be operated and calibrated according to the following procedure:

(i) You shall use an appropriate standard method published by a consensus-based standards organization if such a method exists. Consensus-based standards organizations include, but are not limited to, the following: ASTM International, the American National Standards Institute (ANSI), the American Gas Association (AGA), the American Society of Mechanical Engineers (ASME), the American Petroleum Institute (API), and the North American Energy Standards Board (NAESB).

(ii) Where no appropriate standard method developed by a consensus-based standards organization exists, you shall follow industry standard practices.

(iii) You must ensure that any flow meter calibrations performed are NIST traceable.

(5) Reporters using Equation PP–2 of this subpart and measuring CO₂ concentration as weight % CO₂ shall determine the density of the CO₂ stream on a quarterly basis in order to calculate the mass of the CO₂ stream according to one of the following procedures:


(ii) You may follow an industry standard method.

(b) Determination of concentration. (1) Reporters using Equation PP–1 or PP–2 of this subpart shall sample the CO₂ stream on a quarterly basis to determine the composition of the CO₂ stream.

(2) Methods to measure the composition of the CO₂ stream must conform to applicable chemical analytical standards. Acceptable methods include, but are not limited to, the U.S. Food and Drug Administration food-grade specifications for CO₂ (see 21 CFR 184.1240) and ASTM standard E1747–95 (Re-approved 2005) Standard Guide for Purity of Carbon Dioxide Used in Supercritical Fluid Applications (ASTM International, 100 Barr Harbor Drive, P.O. Box CB700, West Conshohocken, Pennsylvania 19428–B259, (800) 262–1373, http://wwwastm.org).

(c) You shall convert the density of the CO₂ stream(s) and all measured volumes of carbon dioxide to the following standard industry temperature and pressure conditions: Standard cubic meters at a temperature of 60 degrees Fahrenheit and at an absolute pressure of 1 atmosphere. If you apply the density value for CO₂ at standard conditions, you must use 0.001868 metric tons per standard cubic meter.

§ 98.425 Procedures for estimating missing data.

(a) Whenever the quality assurance procedures in §98.424(a)(1) of this subpart cannot be followed to measure quarterly mass flow or volumetric flow of CO₂, the most appropriate of the following missing data procedures shall be followed:

(1) A quarterly CO₂ mass flow or volumetric flow value that is missing may be substituted with a quarterly value measured during another quarter of the current reporting year.

(2) A quarterly CO₂ mass flow or volumetric flow value that is missing may be substituted with a quarterly value measured during the same quarter from the past reporting year.

(3) If a mass or volumetric flow meter is installed to measure the CO₂ stream, you may substitute data from a mass or volumetric flow meter measuring the CO₂ stream transferred for any period during which the installed meter is inoperable.

(b) Whenever the quality assurance procedures in §98.424(b) of this subpart cannot be followed to measure concentration of the CO₂ stream, the most appropriate of the following missing data procedures shall be followed:

(1) A quarterly concentration value that is missing may be substituted with a quarterly value measured during another quarter of the current reporting year.

(2) A quarterly concentration value that is missing may be substituted with a quarterly value measured during the same quarter from the past reporting year.

(3) The concentration used for purposes of product tracking and billing according to the reporter's established procedures may be substituted for any period during which measurement equipment is inoperable.


§ 98.426 Data reporting requirements.

In addition to the information required by §98.3(c) of subpart A of this part, the annual report shall contain the following information, as applicable:

(a) If you use Equation PP–1 of this subpart, report the following information for each mass flow meter or CO₂ stream that delivers CO₂ to containers:

(1) Annual mass in metric tons of CO₂.

(2) Quarterly mass in metric tons of CO₂.

(3) Quarterly concentration of the CO₂ stream.

(4) The standard used to measure CO₂ concentration.

(5) The location of the flow meter in your process chain in relation to the points of CO₂ stream capture, dehydration, compression, and other processing.

(b) If you use Equation PP–2 of this subpart, report the following information for each volumetric flow meter or CO₂ stream that delivers CO₂ to containers:

(1) Annual mass in metric tons of CO₂.

(2) Quarterly volume in standard cubic meters of CO₂.
§ 98.427  Records that must be retained.

In addition to the records required by §98.3(g) of subpart A of this part, you must retain the records specified in paragraphs (a) through (c) of this section, as applicable.

(a) The owner or operator of a facility containing production process units must retain quarterly records of captured or transferred CO₂ streams and composition.

(b) The owner or operator of a CO₂ production well facility must maintain quarterly records of the mass flow or volumetric flow of the extracted or

(c) Each production process unit that captures a CO₂ stream for purposes of supplying CO₂ for commercial applications or in order to sequester or otherwise inject it underground when custody of the CO₂ is maintained shall report the percentage of that stream, if any, that is biomass-based during the reporting year.

transferred CO₂ stream and concentration and density if volumetric flow meters are used.

(c) Importers or exporters of CO₂ must retain annual records of the mass flow, volumetric flow, and mass of CO₂ imported or exported.

§ 98.428 Definitions.
All terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Subpart QQ—Importers and Exporters of Fluorinated Greenhouse Gases Contained in Pre-Charged Equipment or Closed-Cell Foams

SOURCE: 75 FR 74856, Dec. 1, 2010, unless otherwise noted.

§ 98.430 Definition of the source category.
(a) The source category, importers and exporters of fluorinated GHGs contained in pre-charged equipment or closed-cell foams, consists of any entity that imports or exports pre-charged equipment that contains a fluorinated GHG, and any entity that imports or exports closed-cell foams that contain a fluorinated GHG.

§ 98.431 Reporting threshold.
Any importer or exporter of fluorinated GHGs contained in pre-charged equipment or closed-cell foams who meets the requirements of §98.2(a)(4) must report each fluorinated GHG contained in the imported or exported pre-charged equipment or closed-cell foams.

§ 98.432 GHGs to report.
You must report the mass of each fluorinated GHG contained in pre-charged equipment or closed-cell foams that you import or export during the calendar year. For imports and exports of closed-cell foams where you do not know the identity and mass of the fluorinated GHG, you must report the mass of fluorinated GHG in CO₂e.

§ 98.433 Calculating GHG contained in pre-charged equipment or closed-cell foams.
(a) The total mass of each fluorinated GHG imported and exported inside equipment or foams must be estimated using Equation QQ–1 of this section:

\[ I = \sum_t S_t \times N_t \times 0.001 \] (Eq. QQ–1)

Where:
- \( I \) = Total mass of the fluorinated GHG imported or exported annually (metric tons).
- \( t \) = Equipment/foam type containing the fluorinated GHG.
- \( S_t \) = Mass of fluorinated GHG per unit of equipment type \( t \) or foam type \( t \) (charge per piece of equipment or cubic foot of foam, kg).
- \( N_t \) = Number of units of equipment type \( t \) or foam type \( t \) imported or exported annually (pieces of equipment or cubic feet of foam).
- 0.001 = Factor converting kg to metric tons.

(b) When the identity and mass of fluorinated GHGs in a closed-cell foam is unknown to the importer or exporter, the total mass in CO₂e for the fluorinated GHGs imported and exported inside closed-cell foams must be estimated using Equation QQ–2 of this section:

\[ I = \sum_t S_t \times N_t \times 0.001 \] (Eq. QQ–2)
§ 98.434 Monitoring and QA/QC requirements.

(a) For calendar year 2011 monitoring, you may follow the provisions of §98.3(d)(1) through (d)(2) for best available monitoring methods rather than follow the monitoring requirements of this section. For purposes of this subpart, any reference in §98.3(d)(1) through (d)(2) to the year 2010 means 2011, to March 31 means June 30, and to April 1 means July 1. Any reference to the effective date or date of promulgation in §98.3(d)(1) through (d)(2) means February 28, 2011.

(b) The inputs to the annual submission must be reviewed against the import or export transaction records to ensure that the information submitted to EPA is being accurately transcribed as the correct chemical or blend in the correct pre-charged equipment or closed-cell foam in the correct quantities (metric tons) and units (kg per piece of equipment or cubic foot of foam).

§ 98.435 Procedures for estimating missing data.

Procedures for estimating missing data are not provided for importers and exporters of fluorinated GHGs contained in pre-charged equipment or closed-cell foams. A complete record of all measured parameters used in tracking fluorinated GHGs contained in pre-charged equipment or closed-cell foams is required.

§ 98.436 Data reporting requirements.

(a) Each importer of fluorinated GHGs contained in pre-charged equipment or closed-cell foams must submit an annual report that summarizes its imports at the corporate level, except for transshipments, as specified:

1. Total mass in metric tons of each fluorinated GHG imported in pre-charged equipment or closed-cell foams.

2. For each type of pre-charged equipment with a unique combination of charge size and charge type, the identity of the fluorinated GHG used as a refrigerant or electrical insulator, charge size (holding charge, if applicable), and number imported.

3. For closed-cell foams that are imported inside of appliances, the identity of the fluorinated GHG contained in the foam in each appliance, the mass of the fluorinated GHG contained in the foam in each appliance, and the number of appliances imported with each unique combination of mass and identity of fluorinated GHG within the closed-cell foams.

4. For closed-cell foams that are not imported inside of appliances, the identity of the fluorinated GHG in the foam, the density of the fluorinated GHG in the foam (kg fluorinated GHG/cubic foot), and the volume of foam imported (cubic feet) for each type of closed-cell foam with a unique combination of fluorinated GHG density and identity.

5. Dates on which the pre-charged equipment or closed-cell foams were imported.

6. If the importer does not know the identity and mass of the fluorinated GHGs within the closed-cell foam, the importer must report the following:

(i) Total mass in metric tons of CO\textsubscript{2}e of the fluorinated GHGs imported in closed-cell foams.

(ii) For closed-cell foams that are imported inside of appliances, the mass of the fluorinated GHGs in CO\textsubscript{2}e contained in the foam in each appliance and the number of appliances imported for each type of appliance.

(iii) For closed-cell foams that are not imported inside of appliances, the mass in CO\textsubscript{2}e of the fluorinated GHGs in the foam (kg CO\textsubscript{2}e/cubic foot) and the volume of foam imported (cubic feet) for each type of closed-cell foam.

(iv) Dates on which the closed-cell foams were imported.

(v) Name of the foam manufacturer for each type of closed-cell foam where...
the identity and mass of the fluorinated GHGs is unknown.

(vi) Certification that the importer was unable to obtain information on the identity and mass of the fluorinated GHGs within the closed-cell foam from the closed-cell foam manufacturer or manufacturers.

(b) Each exporter of fluorinated GHGs contained in pre-charged equipment or closed-cell foams must submit an annual report that summarizes its exports at the corporate level, except for transshipments, as specified:

(1) Total mass in metric tons of each fluorinated GHG exported in pre-charged equipment or closed-cell foams.

(2) For each type of pre-charged equipment with a unique combination of charge size and charge type, the identity of the fluorinated GHG used as a refrigerant or electrical insulator, charge size (including holding charge, if applicable), and number exported.

(3) For closed-cell foams that are exported inside of appliances, the identity of the fluorinated GHG contained in the foam in each appliance, the mass of the fluorinated GHG contained in the foam in each appliance, and the number of appliances exported with each unique combination of mass and identity of fluorinated GHG within the closed-cell foams.

(4) For closed-cell foams that are not exported inside of appliances, the identity of the fluorinated GHG in the foam, the density of the fluorinated GHG in the foam (kg fluorinated GHG/cubic foot), and the volume of foam exported (cubic feet) for each type of closed-cell foam.

(5) Dates on which the pre-charged equipment or closed-cell foams were exported.

(6) If the exporter does not know the identity and mass of the fluorinated GHG within the closed-cell foam, the exporter must report the following:

(i) Total mass in metric tons of CO$_2$e of the fluorinated GHGs exported in closed-cell foams.

(ii) For closed-cell foams that are exported inside of appliances, the mass of the fluorinated GHGs in CO$_2$e contained in the foam in each appliance and the number of appliances imported for each type of appliance.

(iii) For closed-cell foams that are not exported inside of appliances, the mass in CO$_2$e of the fluorinated GHGs in the foam (kg CO$_2$e/cubic foot) and the volume of foam imported (cubic feet) for each type of closed-cell foam.

(iv) Dates on which the closed-cell foams were exported.

(v) Name of the foam manufacturer for each type of closed-cell foam where the identity and mass of the fluorinated GHGs is unknown.

(vi) Certification that the exporter was unable to obtain information on the identity and mass of the fluorinated GHGs within the closed-cell foam from the closed-cell foam manufacturer or manufacturers.

§ 98.437 Records that must be retained.

(a) In addition to the data required by §98.3(g), importers of fluorinated GHGs in pre-charged equipment and closed-cell foams must retain the following records substantiating each of the imports that they report:

(1) A copy of the bill of lading for the import.

(2) The invoice for the import.

(3) The U.S. Customs entry form.

(4) Ports of entry through which the pre-charged equipment or closed-cell foams passed.

(5) Countries from which the pre-charged equipment or closed-cell foams were imported.

(6) For importers that report the mass of fluorinated GHGs within closed-cell foams on a CO$_2$e basis, correspondence or other documents that show the importer was unable to obtain information on the identity and mass of fluorinated GHG within closed-cell foams from the foam manufacturer.

(b) In addition to the data required by §98.3(g), exporters of fluorinated GHGs in pre-charged equipment and closed-cell foams must retain the following records substantiating each of the exports that they report:

(1) A copy of the bill of lading for the export and

(2) The invoice for the export.
§ 98.438 Definitions.

Except as provided in this section, all of the terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part. If a conflict exists between a definition provided in this subpart and a definition provided in subpart A, the definition in this subpart must take precedence for the reporting requirements in this subpart.

Appliance means any device which contains and uses a fluorinated greenhouse gas refrigerant and which is used for household or commercial purposes, including any air conditioner, refrigerator, chiller, or freezer.

Closed-cell foam means any foam product, excluding packaging foam, that is constructed with a closed-cell structure and a blowing agent containing a fluorinated GHG. Closed-cell foams include but are not limited to polyurethane (PU) appliance foam, PU continuous and discontinuous panel foam, PU one component foam, PU spray foam, extruded polystyrene (XPS) boardstock foam, and XPS sheet foam. Packaging foam means foam used exclusively during shipment or storage to temporarily enclose items.

Electrical equipment means gas-insulated substations, circuit breakers, other switchgear, gas-insulated lines, or power transformers.

Fluorinated GHG refrigerant means, for purposes of this subpart, any substance consisting in part or whole of a fluorinated greenhouse gas and that is used for heat transfer purposes and provides a cooling effect.

Pre-charged appliance means any appliance charged with fluorinated greenhouse gas refrigerant prior to sale or distribution or offer for sale or distribution in interstate commerce. This includes both appliances that contain the full charge necessary for operation and appliances that contain a partial "holding" charge of the fluorinated greenhouse gas refrigerant (e.g., for shipment purposes).

Pre-charged appliance component means any portion of an appliance, including but not limited to condensers, compressors, line sets, and coils, that is charged with fluorinated greenhouse gas refrigerant prior to sale or distribution or offer for sale or distribution in interstate commerce.

Pre-charged equipment means any pre-charged appliance, pre-charged appliance component, pre-charged electrical equipment, or pre-charged electrical equipment component.

Pre-charged electrical equipment mean any electrical equipment, including but not limited to gas-insulated substations, circuit breakers, other switchgear, gas-insulated lines, or power transformers containing a fluorinated GHG prior to sale or distribution, or offer for sale or distribution in interstate commerce. This includes both equipment that contain the full charge necessary for operation and equipment that contain a partial "holding" charge of the fluorinated GHG (e.g., for shipment purposes).

Pre-charged electrical equipment component means any portion of electrical equipment that is charged with SF₆ or PFCs prior to sale or distribution or offer for sale or distribution in interstate commerce.
§ 98.440 Definition of the source category.

(a) The geologic sequestration of carbon dioxide (CO₂) source category comprises any well or group of wells that inject a CO₂ stream for long-term containment in subsurface geologic formations.

(b) This source category includes all wells permitted as Class VI under the Underground Injection Control program.

(c) This source category does not include a well or group of wells where a CO₂ stream is being injected in subsurface geologic formations to enhance the recovery of oil or natural gas unless one of the following applies:

(i) The owner or operator injects the CO₂ stream for long-term containment in subsurface geologic formations and has chosen to submit a proposed monitoring, reporting, and verification (MRV) plan to EPA and received an approved plan from EPA.

(ii) The well is permitted as Class VI under the Underground Injection Control program.

(d) Exemption for research and development projects. Research and development projects shall receive an exemption from reporting under this subpart for the duration of the research and development activity.

(1) Process for obtaining an exemption. If you are a research and development project, you must submit the information in paragraph (d)(2) of this section to EPA by the time you would be otherwise required to submit an MRV plan under §98.448. EPA will use this information to verify that the project is a research and development project.

(2) Content of submission. A submission in support of an exemption as a research and development project must contain the following information:

(i) The planned duration of CO₂ injection for the project.

(ii) The planned annual CO₂ injection volumes during this time period.

(iii) The research purposes of the project.

(iv) The source and type of funding for the project.

(v) The class and duration of Underground Injection Control permit or, for an offshore facility not subject to the Safe Drinking Water Act, a description of the legal instrument authorizing geologic sequestration.

(3) Determination by the Administrator.

(i) The Administrator shall determine if a project meets the definition of research and development project within 60 days of receipt of the submission of a request for exemption. In making this determination, the Administrator shall take into account any information you submit demonstrating that the planned duration of CO₂ injection for the project and the planned annual CO₂ injection volumes during the duration of the project are consistent with the purpose of the research and development project.

(ii) Any appeal of the Administrator’s determination is subject to the provisions of part 78 of this chapter.

(iii) A project that the Administrator determines is not eligible for an exemption as a research and development project must submit a proposed MRV plan to EPA within 180 days of the Administrator’s determination. You may request one extension of up to an additional 180 days in which to submit the proposed MRV plan.

§ 98.441 Reporting threshold.

(a) You must report under this subpart if any well or group of wells within your facility injects any amount of CO₂ for long-term containment in subsurface geologic formations. There is no threshold.

(b) Request for discontinuation of reporting. The requirements of §98.2(i) do not apply to this subpart. Once a well or group of wells is subject to the requirements of this subpart, the owner or operator must continue for each year thereafter to comply with all requirements of this subpart, including the requirement to submit annual reports, until the Administrator has issued a final decision on an owner or operator’s request to discontinue reporting.

(1) Timing of request. The owner or operator of a facility may submit a request to discontinue reporting any
time after the well or group of wells is plugged and abandoned in accordance with applicable requirements.

(2) Content of request. A request for discontinuation of reporting must contain either paragraph (b)(2)(i) or (b)(2)(ii) of this section.

(i) For wells permitted as Class VI under the Underground Injection Control program, a copy of the applicable Underground Injection Control program Director’s authorization of site closure.

(ii) For all other wells, and as an alternative for wells permitted as Class VI under the Underground Injection Control program, a demonstration that current monitoring and model(s) show that the injected CO$_2$ stream is not expected to migrate in the future in a manner likely to result in surface leakage.

(3) Notification. The Administrator will issue a final decision on the request to discontinue reporting within a reasonable time. Any appeal of the Administrator’s final decision is subject to the provisions of part 78 of this chapter.

§ 98.442 GHGs to report.

You must report:

(a) Mass of CO$_2$ received.

(b) Mass of CO$_2$ injected into the subsurface.

(c) Mass of CO$_2$ produced.

(d) Mass of CO$_2$ emitted by surface leakage.

(e) Mass of CO$_2$ equipment leakage and vented CO$_2$ emissions from surface equipment located between the injection flow meter and the injection wellhead.

(f) Mass of CO$_2$ equipment leakage and vented CO$_2$ emissions from surface equipment located between the production flow meter and the production wellhead.

(g) Mass of CO$_2$ sequestered in subsurface geologic formations.

(h) Cumulative mass of CO$_2$ reported as sequestered in subsurface geologic formations in all years since the facility became subject to reporting requirements under this subpart.

§ 98.443 Calculating CO$_2$ geologic sequestration.

You must calculate the mass of CO$_2$ received using CO$_2$ received equations (Equations RR–1 to RR–3 of this section), unless you follow the procedures in §98.444(a)(4). You must calculate CO$_2$ sequestered using injection equations (Equations RR–4 to RR–6 of this section), production/recycling equations (Equations RR–7 to RR–9 of this section), surface leakage equations (Equation RR–10 of this section), and sequestration equations (Equations RR–11 and RR–12 of this section). For your first year of reporting, you must calculate CO$_2$ sequestered starting from the date set forth in your approved MRV plan.

(a) You must calculate and report the annual mass of CO$_2$ received by pipeline using the procedures in paragraphs (a)(1) or (a)(2) of this section and the procedures in paragraph (a)(3) of this section, if applicable.

(1) For a mass flow meter, you must calculate the total annual mass of CO$_2$ in a CO$_2$ stream received in metric tons by multiplying the mass flow by the CO$_2$ concentration in the flow, according to Equation RR–1 of this section. You must collect these data quarterly. Mass flow and concentration data measurements must be made in accordance with §98.444.

\[
\text{CO}_2\text{T,r} = \sum_{p=1}^{4} (Q_{r,p} - S_{r,p}) \times C_{\text{CO}_2\text{r},p}
\]  

(Eq. RR–1)

Where:

- CO$_2$T,r = Net annual mass of CO$_2$ received through flow meter r (metric tons).
- Q$_{r,p}$ = Quarterly mass flow through a receiving flow meter r in quarter p (metric tons).
- S$_{r,p}$ = Quarterly mass flow through a receiving flow meter r that is redelivered to another facility without being injected into your well in quarter p (metric tons).
\( C_{\text{CO}_2,p,r} = \) Quarterly \( \text{CO}_2 \) concentration measurement in flow for flow meter \( r \) in quarter \( p \) (wt. percent \( \text{CO}_2 \), expressed as a decimal fraction).

\( p \) = Quarter of the year.
\( r \) = Receiving flow meter.

(2) For a volumetric flow meter, you must calculate the total annual mass of \( \text{CO}_2 \) in a \( \text{CO}_2 \) stream received in metric tons by multiplying the volumetric flow at standard conditions by the \( \text{CO}_2 \) concentration in the flow and the density of \( \text{CO}_2 \) at standard conditions, according to Equation RR–2 of this section. You must collect these data quarterly. Volumetric flow and concentration data measurements must be made in accordance with §98.444.

\[
\text{CO}_{2T,r} = \sum_{p=1}^{4} (Q_{r,p} - S_{r,p}) \times D \times C_{\text{CO}_2,p,r}
\]  

(Eq. RR–2)

Where:
\( \text{CO}_{2T,r} = \) Net annual mass of \( \text{CO}_2 \) received through flow meter \( r \) (metric tons).
\( Q_{r,p} = \) Quarterly volumetric flow through a receiving flow meter \( r \) in quarter \( p \) at standard conditions (standard cubic meters).
\( S_{r,p} = \) Quarterly volumetric flow through a receiving flow meter \( r \) that is redelivered to another facility without being injected into your well in quarter \( p \) (standard cubic meters).
\( D = \) Density of \( \text{CO}_2 \) at standard conditions (metric tons per standard cubic meter): 0.0018682.

(3) If you receive \( \text{CO}_2 \) through more than one flow meter, you must sum the mass of all \( \text{CO}_2 \) received in accordance with the procedure specified in Equation RR–3 of this section.

\[
\text{CO}_2 = \sum_{r=1}^{R} \text{CO}_{2T,r}
\]  

(Eq. RR–3)

Where:
\( \text{CO}_2 = \) Total net annual mass of \( \text{CO}_2 \) received (metric tons).
\( \text{CO}_{2T,r} = \) Net annual mass of \( \text{CO}_2 \) received (metric tons) as calculated in Equation RR–1 or RR–2 for flow meter \( r \).
\( r \) = Receiving flow meter.

(b) You must calculate and report the annual mass of \( \text{CO}_2 \) received in containers using the procedures in paragraphs (b)(1) or (b)(2) of this section.

(1) If you are measuring the mass of contents in a container under the provisions of §98.444(a)(2)(i), you must calculate the \( \text{CO}_2 \) received for injection in containers using Equation RR–1 of this section.

Where:
\( \text{CO}_{\text{CT},r} = \) Net annual mass of \( \text{CO}_2 \) received in containers \( r \) (metric tons).

\( \text{C}_{\text{CO}_2,p,r} = \) Quarterly \( \text{CO}_2 \) concentration measurement in flow for flow meter \( r \) in quarter \( p \) (vol. percent \( \text{CO}_2 \), expressed as a decimal fraction).

\( p \) = Quarter of the year.
\( r \) = Receiving flow meter.

(2) If you are measuring the volume of contents in a container under the provisions of §98.444(a)(2)(ii), you must calculate the \( \text{CO}_2 \) received for injection in containers using Equation RR–2 of this section.

Where:
\( \text{CO}_{\text{CT},r} = \) Net annual mass of \( \text{CO}_2 \) received in containers \( r \) (metric tons).
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(c) You must report the annual mass of CO₂ injected in accordance with the procedures specified in paragraphs (c)(1) through (c)(3) of this section.

(1) If you use a mass flow meter to measure the flow of an injected CO₂ stream, you must calculate annually the total mass of CO₂ (in metric tons) in the CO₂ stream injected each year in metric tons by multiplying the mass flow by the CO₂ concentration in the flow, according to Equation RR–4 of this section. Mass flow and concentration data measurements must be made in accordance with §98.444.

\[
CO₂,u = \sum_{p=1}^{4} Q_{p,u} \times C\text{CO}_2,p,u \quad (\text{Eq. RR–4})
\]

Where:
- \( CO₂,u \) = Annual CO₂ mass injected (metric tons) as measured by flow meter \( u \).
- \( Q_{p,u} \) = Quarterly mass flow rate measurement for flow meter \( u \) in quarter \( p \) (metric tons per quarter).
- \( C\text{CO}_2,p,u \) = Quarterly CO₂ concentration measurement in flow for flow meter \( u \) in quarter \( p \) (wt. percent CO₂, expressed as a decimal fraction).
- \( p \) = Quarter of the year.
- \( u \) = Flow meter.

(2) If you use a volumetric flow meter to measure the flow of an injected CO₂ stream, you must calculate annually the total mass of CO₂ (in metric tons) in the CO₂ stream injected each year in metric tons by multiplying the volumetric flow at standard conditions by the CO₂ concentration in the flow and the density of CO₂ at standard conditions, according to Equation RR–5 of this section. Volumetric flow and concentration data measurements must be made in accordance with §98.444.

\[
CO₂,u = \sum_{p=1}^{4} Q_{p,u} \times D \times C\text{CO}_2,p,u \quad (\text{Eq. RR–5})
\]

Where:
- \( CO₂,u \) = Annual CO₂ mass injected (metric tons) as measured by flow meter \( u \).
- \( Q_{p,u} \) = Quarterly volumetric flow rate measurement for flow meter \( u \) in quarter \( p \) at standard conditions (standard cubic meters per quarter).
- \( D \) = Density of CO₂ at standard conditions (metric tons per standard cubic meter): 0.0018682.
- \( C\text{CO}_2,p,u \) = CO₂ concentration measurement in flow for flow meter \( u \) in quarter \( p \) (vol.

percent CO₂, expressed as a decimal fraction).
- \( p \) = Quarter of the year.
- \( u \) = Flow meter.

(3) To aggregate injection data for all wells covered under this subpart, you must sum the mass of all CO₂ injected through all injection wells in accordance with the procedure specified in Equation RR–6 of this section.
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\[ \text{CO}_2 = \sum_{u=1}^{U} \text{CO}_2, u \quad (\text{Eq. RR-6}) \]

Where:
- \( \text{CO}_2 \) = Total annual \( \text{CO}_2 \) mass injected (metric tons) through all injection wells.
- \( \text{CO}_2, u \) = Annual \( \text{CO}_2 \) mass injected (metric tons) as measured by flow meter \( u \).
- \( u \) = Flow meter.

(d) You must calculate the annual mass of \( \text{CO}_2 \) produced from oil or gas production wells or from other fluid wells for each separator that sends a stream of gas into a recycle or end use system in accordance with the procedures specified in paragraphs (d)(1) through (d)(3) of this section. You must account only for wells that produce the \( \text{CO}_2 \) that was injected into the well or wells covered by this source category.

1. For each gas-liquid separator for which flow is measured using a mass flow meter, you must calculate annually the total mass of \( \text{CO}_2 \) produced from an oil or other fluid stream in metric tons that is separated from the fluid by multiplying the mass flow rate by the \( \text{CO}_2 \) concentration in the gas flow, according to Equation RR-7 of this section. You must collect these data quarterly. Mass flow and concentration data measurements must be made in accordance with §98.444.

\[ \text{CO}_2, w = \sum_{p=1}^{4} Q_{p,w} * C_{\text{CO}_2,p,w} \quad (\text{Eq. RR-7}) \]

Where:
- \( \text{CO}_2, w \) = Annual \( \text{CO}_2 \) mass produced (metric tons) through separator \( w \).
- \( Q_{p,w} \) = Quarterly gas mass flow rate measurement for separator \( w \) in quarter \( p \) (metric tons).
- \( C_{\text{CO}_2,p,w} \) = Quarterly \( \text{CO}_2 \) concentration measurement in flow for separator \( w \) in quarter \( p \) (wt. percent \( \text{CO}_2 \), expressed as a decimal fraction).
- \( p \) = Quarter of the year.
- \( w \) = Separator.

2. For each gas-liquid separator for which flow is measured using a volumetric flow meter, you must calculate annually the total mass of \( \text{CO}_2 \) produced from an oil or other fluid stream in metric tons that is separated from the fluid by multiplying the volumetric gas flow at standard conditions by the \( \text{CO}_2 \) concentration in the gas flow and the density of \( \text{CO}_2 \) at standard conditions, according to Equation RR-8 of this section. You must collect these data quarterly. Volumetric flow and concentration data measurements must be made in accordance with §98.444.

\[ \text{CO}_2, w = \sum_{p=1}^{4} Q_{p,w} * D * C_{\text{CO}_2,p,w} \quad (\text{Eq. RR-8}) \]

Where:
- \( \text{CO}_2, w \) = Annual \( \text{CO}_2 \) mass produced (metric tons) through separator \( w \).
- \( Q_{p,w} \) = Volumetric gas flow rate measurement for separator \( w \) in quarter \( p \) at standard conditions (standard cubic meters).
- \( D \) = Density of \( \text{CO}_2 \) at standard conditions (metric tons per standard cubic meter): 0.0018682.
- \( C_{\text{CO}_2,p,w} \) = \( \text{CO}_2 \) concentration measurement in flow for separator \( w \) in quarter \( p \) (vol. percent \( \text{CO}_2 \), expressed as a decimal fraction).
- \( p \) = Quarter of the year.
- \( w \) = Separator.

3. To aggregate production data, you must sum the mass of all of the \( \text{CO}_2 \) separated at each gas-liquid separator.
in accordance with the procedure specified in Equation RR-9 of this section. You must assume that the total CO₂ measured at the separator(s) represents a percentage of the total CO₂ produced. In order to account for the percentage of CO₂ produced that is estimated to remain with the produced oil or other fluid, you must multiply the quarterly mass of CO₂ measured at the separator(s) by a percentage estimated using a methodology in your approved MRV plan.

\[ CO₂_{2p} = (1+X) \times \sum_{w=1}^{W} CO₂_{2,w} \quad (\text{Eq. RR-9}) \]

Where:
- \( CO₂_{2p} \) = Total annual CO₂ mass produced (metric tons) through all separators in the reporting year.
- \( CO₂_{2,w} \) = Annual CO₂ mass produced (metric tons) through separator \( w \) in the reporting year.
- \( X \) = Entrained CO₂ in produced oil or other fluid divided by the CO₂ separated through all separators in the reporting year (weight percent CO₂, expressed as a decimal fraction).

\( w \) = Separator.

(e) You must report the annual mass of CO₂ that is emitted by surface leakage in accordance with your approved MRV plan. You must calculate the total annual mass of CO₂ emitted from all leakage pathways in accordance with the procedure specified in Equation RR-10 of this section.

\[ CO₂_{2E} = \sum_{x=1}^{X} CO₂_{2,x} \quad (\text{Eq. RR-10}) \]

Where:
- \( CO₂_{2E} \) = Total annual CO₂ mass emitted by surface leakage (metric tons) in the reporting year.
- \( CO₂_{2,x} \) = Annual CO₂ mass emitted (metric tons) at leakage pathway \( x \) in the reporting year.
- \( x \) = Leakage pathway.

(f) You must report the annual mass of CO₂ that is sequestered in subsurface geologic formations in the reporting year in accordance with the procedures specified in paragraphs (f)(1) and (f)(2) of this section.

(1) If you are actively producing oil or natural gas or if you are producing any other fluids, you must calculate the annual mass of CO₂ that is sequestered in the underground subsurface formation in the reporting year in accordance with the procedure specified in Equation RR-11 of this section.

\[ CO₂ = CO₂_{2I} - CO₂_{2P} - CO₂_{2E} - CO₂_{2FI} - CO₂_{2FP} \quad (\text{Eq. RR-11}) \]

Where:
- \( CO₂_{2I} \) = Total annual CO₂ mass sequestered in subsurface geologic formations (metric tons) at the facility in the reporting year.
- \( CO₂_{2P} \) = Total annual CO₂ mass produced (metric tons) in the reporting year.
- \( CO₂_{2E} \) = Total annual CO₂ mass emitted (metric tons) by surface leakage in the reporting year.
- \( CO₂_{2FI} \) = Total annual CO₂ mass emitted (metric tons) as equipment leakage or vented emissions from equipment located on the surface between the flow meter used to...
measure injection quantity and the injection wellhead, for which a calculation procedure is provided in subpart W of this part.

\[ \text{CO}_2 = \text{CO}_2I \times \text{CO}_2E \times \text{CO}_2FI \] 

(Eq. RR-12)

Where:

\( \text{CO}_2 = \) Total annual \( \text{CO}_2 \) mass sequestered in subsurface geologic formations (metric tons) at the facility in the reporting year.

\( \text{CO}_2I = \) Total annual \( \text{CO}_2 \) mass injected (metric tons) in the well or group of wells covered by this source category in the reporting year.

\( \text{CO}_2E = \) Total annual \( \text{CO}_2 \) mass emitted (metric tons) by surface leakage in the reporting year.

\( \text{CO}_2FI = \) Total annual \( \text{CO}_2 \) mass emitted (metric tons) as equipment leakage or vented emissions from equipment located on the surface between the flow meter used to measure production quantity, for which a calculation procedure is provided in subpart W of this part.

(2) If you are not actively producing oil or natural gas or any other fluids, you must calculate the annual mass of \( \text{CO}_2 \) that is sequestered in subsurface geologic formations in the reporting year in accordance with the procedures specified in Equation RR-12 of this section.

\[ \text{CO}_2 = \text{CO}_2I \times \text{CO}_2E \times \text{CO}_2FI \] 

§ 98.444 Monitoring and QA/QC requirements.

(a) \( \text{CO}_2 \) received.

(1) Except as provided in paragraph (a)(4) of this section, you must determine the quarterly flow rate of \( \text{CO}_2 \) received by pipeline by following the most appropriate of the following procedures:

(i) You may measure flow rate at the receiving custody transfer meter prior to any subsequent processing operations at the facility and collect the flow rate quarterly.

(ii) If you took ownership of the \( \text{CO}_2 \) in a commercial transaction, you may use the quarterly flow rate data from the sales contract or from invoices or manifests if it is a one-time transaction or from invoices or manifests if it is an ongoing commercial transaction with discrete shipments.

(iii) If you inject \( \text{CO}_2 \) received from a production process unit that is part of your facility, you may use the quarterly \( \text{CO}_2 \) flow rate that was measured at the equivalent of a custody transfer meter following procedures provided in subpart PP of this part. To be the equivalent of a custody transfer meter, a meter must measure the flow of \( \text{CO}_2 \) being transported to an injection well to the same degree of accuracy as a meter used for commercial transactions.

(2) Except as provided in paragraph (a)(4) of this section, you must determine the quarterly mass or volume of contents in all containers if you receive \( \text{CO}_2 \) in containers by following the most appropriate of the following procedures:

(i) You may measure the mass of contents of containers summed quarterly using weigh bills, scales, or load cells.

(ii) You may determine the volume of the contents of containers summed quarterly.

(iii) If you took ownership of the \( \text{CO}_2 \) in a commercial transaction, you may use the quarterly mass or volume of contents from the sales contract if it is a one-time transaction or from invoices or manifests if it is an ongoing commercial transaction with discrete shipments.

(3) Except as provided in paragraph (a)(4) of this section, you must determine a quarterly concentration of the \( \text{CO}_2 \) received that is representative of all \( \text{CO}_2 \) received in that quarter by following the most appropriate of the following procedures:

(i) You may sample the \( \text{CO}_2 \) stream at least once per quarter at the point of receipt and measure its \( \text{CO}_2 \) concentration.

(ii) If you took ownership of the \( \text{CO}_2 \) in a commercial transaction for which the sales contract was contingent on
CO$_2$ concentration, and if the supplier of the CO$_2$ sampled the CO$_2$ stream in a quarter and measured its concentration per the sales contract terms, you may use the CO$_2$ concentration data from the sales contract for that quarter.

(iii) If you inject CO$_2$ from a production process unit that is part of your facility, you may report the quarterly CO$_2$ concentration of the CO$_2$ stream supplied that was measured following the procedures provided in subpart PP of this part.

(4) If the CO$_2$ you receive is wholly injected and is not mixed with any other supply of CO$_2$, you may report the annual mass of CO$_2$ injected that you determined following the requirements under paragraph (b) of this section as the total annual mass of CO$_2$ received instead of using Equation RR–1 or RR–2 of this subpart to calculate CO$_2$ received.

(5) You must assume that the CO$_2$ you receive meets the definition of a CO$_2$ stream unless you can trace it through written records to a source other than a CO$_2$ stream.

(b) CO$_2$ injected.

(1) You must select a point or points of measurement at which the CO$_2$ stream(s) is representative of the CO$_2$ stream(s) being injected. You may use as the point or points of measurement the location(s) of the flow meter(s) used to comply with the flow monitoring and reporting provisions in your Underground Injection Control permit.

(2) You must measure flow rate of CO$_2$ injected with a flow meter and collect the flow rate quarterly.

(3) You must sample the injected CO$_2$ stream at least once per quarter immediately upstream or downstream of the flow meter used to measure flow rate of that gas stream and measure the CO$_2$ concentration of the sample.

(3) You must measure flow rate of gas produced with a flow meter and collect the flow rate quarterly.

(d) CO$_2$ equipment leakage and vented CO$_2$. If you have equipment located on the surface between the flow meter used to measure injection quantity and the injection wellhead or between the flow meter used to measure production quantity and the production wellhead, you must follow the monitoring and QA/QC requirements specified in subpart W of this part for the equipment.

(e) Measurement devices.

(1) All flow meters must be operated continuously except as necessary for maintenance and calibration.

(2) You must calibrate all flow meters used to measure quantities reported in §98.446 according to the calibration and accuracy requirements in §98.3(1).

(3) You must operate all measurement devices according to one of the following. You may use an appropriate standard method published by a consensus-based standards organization if such a method exists or an industry standard practice. Consensus-based standards organizations include, but are not limited to, the following: ASTM International, the American National Standards Institute (ANSI), the American Gas Association (AGA), the American Society of Mechanical Engineers (ASME), the American Petroleum Institute (API), and the North American Energy Standards Board (NAESB).

(4) You must ensure that any flow meter calibrations performed are National Institute of Standards and Technology (NIST) traceable.

(f) General.

(1) If you measure the concentration of any CO$_2$ quantity for reporting, you must measure according to one of the following. You may use an appropriate standard method published by a consensus-based standards organization if such a method exists or an industry standard practice.

(2) You must convert all measured volumes of CO$_2$ to the following standard industry temperature and pressure conditions for use in Equations RR–2,
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RR–5 and RR–8 of this subpart: Standard cubic meters at a temperature of 60 degrees Fahrenheit and at an absolute pressure of 1 atmosphere.

(3) For 2011, you may follow the provisions of §98.3(d)(1) through (2) for best available monitoring methods only for parameters required by paragraphs (a) and (b) of §98.443 rather than follow the monitoring requirements of paragraph (a) of this section. For purposes of this subpart, any reference to the year 2010 in §98.3(d)(1) through (2) shall mean 2011.

§ 98.445 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG quantities calculations is required. Whenever the monitoring procedures cannot be followed, you must use the following missing data procedures:

(a) A quarterly flow rate of CO$_2$ received that is missing must be estimated as follows:
   (1) Another calculation methodology listed in §98.444(a)(1) must be used if possible.
   (2) If another method listed in §98.444(a)(1) cannot be used, a quarterly flow rate value that is missing must be estimated using a representative flow rate value from the nearest previous time period.

(b) A quarterly mass or volume of contents in containers received that is missing must be estimated as follows:
   (1) Another calculation methodology listed in §98.444(a)(2) must be used if possible.
   (2) If another method listed in §98.444(a)(2) cannot be used, a quarterly mass or volume value that is missing must be estimated using a representative mass or volume value from the nearest previous time period.

(c) A quarterly CO$_2$ concentration of a CO$_2$ stream received that is missing must be estimated as follows:
   (1) Another calculation methodology listed in §98.444(a)(3) must be used if possible.
   (2) If another method listed in §98.444(a)(3) cannot be used, a quarterly concentration value that is missing must be estimated using a representative concentration value from the nearest previous time period.

(d) A quarterly quantity of CO$_2$ injected that is missing must be estimated using a representative quantity of CO$_2$ injected from the nearest previous period of time at a similar injection pressure.

(e) For any values associated with CO$_2$ equipment leakage or vented CO$_2$ emissions from surface equipment at the facility that are reported in this subpart, missing data estimation procedures should be followed in accordance with those specified in subpart W of this part.

(f) The quarterly quantity of CO$_2$ produced from subsurface geologic formations that is missing must be estimated using a representative quantity of CO$_2$ produced from the nearest previous period of time.

(g) You must estimate the mass of CO$_2$ emitted by surface leakage that is missing as required by your approved MRV plan.

(h) You must estimate other missing data as required by your approved MRV plan.

§ 98.446 Data reporting requirements.

In addition to the information required by §98.3(c), report the information listed in this section.

(a) If you receive CO$_2$ by pipeline, report the following for each receiving flow meter:
   (1) The total net mass of CO$_2$ received (metric tons) annually.
   (2) If a volumetric flow meter is used to receive CO$_2$ report the following unless you reported yes to paragraph (a)(5) of this section:
      (i) The volumetric flow through a receiving flow meter at standard conditions (in standard cubic meters) in each quarter.
      (ii) The volumetric flow through a receiving flow meter that is redelivered to another facility without being injected into your well (in standard cubic meters) in each quarter.
      (iii) The CO$_2$ concentration in the flow (volume percent CO$_2$ expressed as a decimal fraction) in each quarter.

(b) If a mass flow meter is used to receive CO$_2$ report the following unless you reported yes to paragraph (a)(5) of this section:
(i) The mass flow through a receiving flow meter (in metric tons) in each quarter.

(ii) The mass flow through a receiving flow meter that is redelivered to another facility without being injected into your well (in metric tons) in each quarter.

(iii) The CO₂ concentration in the flow (weight percent CO₂ expressed as a decimal fraction) in each quarter.

(4) If the CO₂ received is wholly injected and not mixed with any other supply of CO₂, report whether you followed the procedures in §98.444(a)(4).

(5) The standard or method used to calculate each value in paragraphs (a)(2) through (a)(3) of this section.

(6) The number of times in the reporting year for which substitute data procedures were used to calculate values reported in paragraphs (a)(2) through (a)(3) of this section.

(7) Whether the flow meter is mass or volumetric.

(8) A numerical identifier for the flow meter.

(b) If you receive CO₂ in containers, report:

(1) The mass (in metric tons) or volume at standard conditions (in standard cubic meters) of contents in containers received in each quarter.

(2) The concentration of CO₂ of contents in containers (volume or wt. percent CO₂ expressed as a decimal fraction) in each quarter.

(3) The mass (in metric tons) or volume (in standard cubic meters) of contents in containers that is redelivered to another facility without being injected into your well in each quarter.

(4) The net mass of CO₂ received (in metric tons) annually.

(5) The standard or method used to calculate each value in paragraphs (b)(1) and (b)(2) of this section.

(6) The number of times in the reporting year for which substitute data procedures were used to calculate values reported in paragraphs (b)(1) and (b)(2) of this section.

(c) If you use more than one receiving flow meter, report the total net mass of CO₂ received (metric tons) through all flow meters annually.

(d) The source of the CO₂ received according to the following categories:

(1) CO₂ production wells.

(2) Electric generating unit.

(3) Ethanol plant.

(4) Pulp and paper mill.

(5) Natural gas processing.

(6) Gasification operations.

(7) Other anthropogenic source.

(8) Discontinued enhanced oil and gas recovery project.

(9) Unknown.

(e) Whether you began data collection according to your approved MRV plan in a reporting year prior to this annual report submission.

(f) If you report yes in paragraph (e) of this section, report the following. If this is your first year of reporting, report the following starting on the date you began data collection according to your approved MRV plan.

(1) For each injection flow meter (mass or volumetric), report:

(i) The mass of CO₂ injected (metric tons) annually.

(ii) The CO₂ concentration in flow (volume or weight percent CO₂ expressed as a decimal fraction) in each quarter.

(iii) If a volumetric flow meter is used, the volumetric flow rate at standard conditions (in standard cubic meters) in each quarter.

(iv) If a mass flow meter is used, the mass flow rate (in metric tons) in each quarter.

(v) A numerical identifier for the flow meter.

(vi) Whether the flow meter is mass or volumetric.

(vii) The standard used to calculate each value in paragraphs (f)(1)(i) through (f)(1)(iv) of this section.

(viii) The number of times in the reporting year for which substitute data procedures were used to calculate values reported in paragraphs (f)(1)(i) through (f)(1)(iv) of this section.

(ix) The location of the flow meter.

(2) The total CO₂ injected (metric tons) in the reporting year as calculated in Equation RR–6 of this subpart.

(3) For CO₂ equipment leakage and vented CO₂ emissions, report the following:

(i) The mass of CO₂ emitted (in metric tons) annually as equipment leakage or vented emissions from equipment located on the surface between
(ii) The mass of CO₂ emitted (in metric tons) annually as equipment leakage or vented emissions from equipment located on the surface between the production wellhead and the flow meter used to measure production quantity.

(4) For each separator flow meter (mass or volumetric), report:
   (i) CO₂ mass produced (metric tons) annually.
   (ii) CO₂ concentration in flow (volume or weight percent CO₂ expressed as a decimal fraction) in each quarter.
   (iii) If a volumetric flow meter is used, volumetric flow rate at standard conditions (standard cubic meters) in each quarter.
   (iv) If a mass flow meter, mass flow rate (metric tons) in each quarter.
   (v) A numerical identifier for the flow meter.
   (vi) Whether the flow meter is mass or volumetric.
   (vii) The standard used to calculate each value in paragraphs (f)(4)(i) through (f)(4)(iv) of this section.
   (viii) The number of times in the reporting year for which substitute data procedures were used to calculate values reported in paragraphs (f)(4)(i) through (f)(4)(iv) of this section.

(5) The entrained CO₂ in produced oil or other fluid divided by the CO₂ separated through all separators in the reporting year (weight percent CO₂ expressed as a decimal fraction) used as the value for X in Equation RR–9 of this subpart and as determined according to your EPA-approved MRV plan.

(6) Annual CO₂ produced in the reporting year as calculated in Equation RR–9 of this subpart.

(7) For each leakage pathway through which CO₂ emissions occurred, report:
   (i) A numerical identifier for the leakage pathway.
   (ii) The CO₂ (metric tons) emitted through that pathway in the reporting year.

(8) Annual CO₂ mass emitted (metric tons) by surface leakage in the reporting year as calculated by Equation RR–10 of this subpart.

(9) Annual CO₂ (metric tons) sequestered in subsurface geologic formations in the reporting year as calculated by Equation RR–11 or RR–12 of this subpart.

(10) Cumulative mass of CO₂ (metric tons) reported as sequestered in subsurface geologic formations in all years since the well or group of wells became subject to reporting requirements under this subpart.

(11) Date that the most recent MRV plan was approved by EPA and the MRV plan approval number that was issued by EPA.

(12) An annual monitoring report that contains the following components:
   (i) A narrative history of the monitoring efforts conducted over the previous calendar year, including a listing of all monitoring equipment that was operated, its period of operation, and any relevant tests or surveys that were conducted.
   (ii) A description of any changes to the monitoring program that you concluded were not material changes warranting submission of a revised MRV plan under §98.448(d).
   (iii) A narrative history of any monitoring anomalies that were detected in the previous calendar year and how they were investigated and resolved.
   (iv) A description of any surface leakages of CO₂, including a discussion of all methodologies and technologies involved in detecting and quantifying the surface leakages and any assumptions and uncertainties involved in calculating the amount of CO₂ emitted.

(13) If a well is permitted under the Underground Injection Control program, for each injection well, report:
   (i) The well identification number used for the Underground Injection Control permit.
   (ii) The Underground Injection Control permit class.

(14) If an offshore well is not subject to the Safe Drinking Water Act, for each injection well, report any well identification number and any identification number used for the legal instrument authorizing geologic sequestration.
§ 98.447 Records that must be retained.

(a) You must follow the record retention requirements specified by §98.3(g). In addition to the records required by §98.3(g), you must retain the records specified in paragraphs (a)(1) through (7) of this section, as applicable. You must retain all required records for at least 3 years.

(1) Quarterly records of CO₂ received, including mass flow rate of contents of containers (mass or volumetric) at standard conditions and operating conditions, operating temperature and pressure, and concentration of these streams.

(2) Quarterly records of produced CO₂, including mass flow or volumetric flow at standard conditions and operating conditions, operating temperature and pressure, and concentration of these streams.

(3) Quarterly records of injected CO₂ including mass flow or volumetric flow at standard conditions and operating conditions, operating temperature and pressure, and concentration of these streams.

(4) Annual records of information used to calculate the CO₂ emitted by surface leakage from leakage pathways.

(5) Annual records of information used to calculate the CO₂ emitted as equipment leakage or vented emissions from equipment located on the surface between the flow meter used to measure injection quantity and the injection wellhead.

(6) Annual records of information used to calculate the CO₂ emitted as equipment leakage or vented emissions from equipment located on the surface between the production wellhead and the flow meter used to measure production quantity.

(7) Any other records as specified for retention in your EPA-approved MRV plan.

(b) You must complete your monitoring plans, as described in §98.3(g)(5), by April 1 of the year you begin collecting data.

§ 98.448 Geologic sequestration monitoring, reporting, and verification (MRV) plan.

(a) Contents of MRV plan. You must develop and submit to the Administrator a proposed MRV plan for monitoring, reporting, and verification of geologic sequestration at your facility. Your proposed MRV plan must contain the following components:

(1) Delineation of the maximum monitoring area and the active monitoring areas. The first period for your active monitoring area will begin from the date determined in your MRV plan through the date at which the plan calls for the first expansion of the monitoring area. The length of each monitoring period can be any time interval chosen by you that is greater than 1 year.

(2) Identification of potential surface leakage pathways for CO₂ in the maximum monitoring area and the likelihood, magnitude, and timing, of surface leakage of CO₂ through these pathways.

(3) A strategy for detecting and quantifying any surface leakage of CO₂.

(4) A strategy for establishing the expected baselines for monitoring CO₂ surface leakage.

(5) A summary of the considerations you intend to use to calculate site-specific variables for the mass balance equation. This includes, but is not limited to, considerations for calculating equipment leakage and vented emissions between the injection flow meter and injection well and/or the production flow meter and production well, and considerations for calculating CO₂ in produced fluids.

(6) If a well is permitted under the Underground Injection Control program, for each injection well, report the well identification number used for the Underground Injection Control permit and the Underground Injection Control permit class. If the well is not yet permitted, and you have applied for an Underground Injection Control permit, report the well identification numbers in the permit application. If an offshore well is not subject to the Safe Drinking Water Act, for each injection well, report any well identification number and any identification number used for the legal instrument...
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authorizing geologic sequestration. If you are submitting your Underground Injection Control permit application as part of your proposed MRV plan, you must notify EPA when the permit has been approved. If you are an offshore facility not subject to the Safe Drinking Water Act, and are submitting your application for the legal instrument authorizing geologic sequestration as part of your proposed MRV plan, you must notify EPA when the legal instrument authorizing geologic sequestration has been approved.

(7) Proposed date to begin collecting data for calculating total amount sequestered according to equation RR–11 or RR–12 of this subpart. This date must be after expected baselines as required by paragraph (a)(4) of this section are established and the leakage detection and quantification strategy as required by paragraph (a)(3) of this section is implemented in the initial AMA.

(b) Timing. You must submit a proposed MRV plan to EPA according to the following schedule:

(1) You must submit a proposed MRV plan to EPA by June 30, 2011 if you were issued a final Underground Injection Control permit authorizing the injection of CO\textsubscript{2} into the subsurface on or before December 31, 2010. You will be allowed to request one extension of up to an additional 180 days in which to submit your proposed MRV plan.

(2) You must submit a proposed MRV plan to EPA within 180 days of receiving a final Underground Injection Control permit authorizing the injection of CO\textsubscript{2} into the subsurface on or before December 31, 2010. You will be allowed to request one extension of up to an additional 180 days in which to submit your proposed MRV plan.

(c) Final MRV plan. The Administrator will issue a final MRV plan within a reasonable period of time. The Administrator’s final MRV plan is subject to the provisions of part 78 of this chapter. Once the MRV plan is final and no longer subject to administrative appeal under part 78 of this chapter, you must implement the plan starting on the day after the day on which the plan becomes final and is no longer subject to such appeal.

(d) MRV plan revisions. You must revise and submit the MRV plan within 180 days to the Administrator for approval if any of the following in paragraphs (d)(1) through (d)(4) of this section applies. You must include the reason(s) for the revisions in your submittal.

(1) A material change was made to monitoring and/or operational parameters that was not anticipated in the original MRV plan. Examples of material changes include but are not limited to: Large changes in the volume of CO\textsubscript{2} injected; the construction of new injection wells not identified in the MRV plan; failures of the monitoring system including monitoring system sensitivity, performance, location, or baseline; changes to surface land use that affects baseline or operational conditions; observed plume location that differs significantly from the predicted plume area used for developing the MRV plan; a change in the maximum monitoring area or active monitoring area; or a change in monitoring technology that would result in coverage or detection capability different from the MRV plan.

(2) A change in the permit class of your Underground Injection Control permit.

(3) If you are notified by EPA of substantive errors in your MRV plan or monitoring report.

(4) You choose to revise your MRV plan for any other reason in any reporting year.

(e) Final MRV plan. The requirements of paragraph (c) of this section apply to any submission of a revised MRV plan. You must continue reporting under your currently approved plan while
(f) Format. Each proposed MRV plan or revision and each annual report must be submitted electronically in a format specified by the Administrator.

(g) Certificate of representation. You must submit a certificate of representation according to the provisions in §98.4 at least 60 days before submission of your MRV plan, your research and development exemption request, your MRV plan submission extension request, or your initial annual report under this part, whichever is earlier.

§ 98.449 Definitions.

Except as provided below, all terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

Active monitoring area is the area that will be monitored over a specific time interval from the first year of the period (n) to the last year in the period (t). The boundary of the active monitoring area is established by superimposing two areas:

1. The area projected to contain the free phase CO\(_2\) plume at the end of year t, plus an all around buffer zone of one-half mile or greater if known leakage pathways extend laterally more than one-half mile.

2. The area projected to contain the free phase CO\(_2\) plume at the end of year t+5.

CO\(_2\) received the CO\(_2\) stream that you receive to be injected for the first time into a well on your facility that is covered by this subpart. CO\(_2\) received includes, but is not limited to, a CO\(_2\) stream from a production process unit inside your facility and a CO\(_2\) stream that was injected into a well on another facility, removed from a discontinued enhanced oil or natural gas or other production well, and transferred to your facility.

Equipment leak means those emissions that could not reasonably pass through a stack, chimney, vent, or other functionally-equivalent opening.

Expected baseline is the anticipated value of a monitored parameter that is compared to the measured monitored parameter.

Maximum monitoring area means the area that must be monitored under this regulation and is defined as equal to or greater than the area expected to contain the free phase CO\(_2\) plume until the CO\(_2\) plume has stabilized plus an all-around buffer zone of at least one-half mile.

Research and development project means a project for the purpose of investigating practices, monitoring techniques, or injection verification, or engaging in other applied research, that will enable safe and effective long-term containment of a CO\(_2\) stream in subsurface geologic formations, including research and short duration CO\(_2\) injection tests conducted as a precursor to long-term storage.

Separator means a vessel in which streams of multiple phases are gravity separated into individual streams of single phase.

Surface leakage means the movement of the injected CO\(_2\) stream from the injection zone to the surface, and into the atmosphere, indoor air, oceans, or surface water.

Underground Injection Control permit means a permit issued under the authority of Part C of the Safe Drinking Water Act at 42 U.S.C. 300h et seq.

Underground Injection Control program means the program responsible for regulating the construction, operation, permitting, and closure of injection wells that place fluids underground for storage or disposal for purposes of protecting underground sources of drinking water from endangerment pursuant to Part C of the Safe Drinking Water Act at 42 U.S.C. 300h et seq.

Vented emissions means intentional or designed releases of CH\(_4\) or CO\(_2\) containing natural gas or hydrocarbon gas (not including stationary combustion flue gas), including process designed flow to the atmosphere through seals or vent pipes, equipment blowdown for maintenance, and direct venting of gas used to power equipment (such as pneumatic devices).

Subpart SS—Electrical Equipment

Manufacture or Refurbishment

SOURCE: 75 FR 74859, Dec. 1, 2010, unless otherwise noted.
§ 98.450 Definition of the source category.

The electrical equipment manufacturing or refurbishment category consists of processes that manufacture or refurbish gas-insulated substations, circuit breakers, other switchgear, gas-insulated lines, or power transformers (including gas-containing components of such equipment) containing sulfurhexafluoride (SF$_6$) or perfluorocarbons (PFCs). The processes include equipment testing, installation, manufacturing, decommissioning and disposal, refurbishing, and storage in gas cylinders and other containers.

§ 98.451 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains an electrical equipment manufacturing or refurbishing process and the facility meets the requirements of § 98.2(a)(1). Electrical equipment manufacturing and refurbishing facilities covered by this rule are those that have total annual purchases of SF$_6$ and PFCs that exceed 23,000 pounds.

§ 98.452 GHGs to report.

(a) You must report SF$_6$ and PFC emissions at the facility level. Annual emissions from the facility must include SF$_6$ and PFC emissions from equipment that is installed at an off-site electric power transmission or distribution location whenever emissions from installation activities (e.g., filling) occur before the title to the equipment is transferred to the electric power transmission or distribution entity.

(b) You must report CO$_2$, N$_2$O and CH$_4$ emissions from each stationary combustion unit. You must calculate and report these emissions under subpart C of this part (General Stationary Fuel Combustion Sources) by following the requirements of subpart C of this part.

§ 98.453 Calculating GHG emissions.

(a) For each electrical equipment manufacturer or refurbisher, estimate the annual SF$_6$ and PFC emissions using the mass-balance approach in Equation SS–1 of this section:

\[
\text{User Emissions} = (\text{Decrease in SF}_6 \text{ Inventory}) + (\text{Acquisitions of SF}_6) - (\text{Disbursements of SF}_6) \quad \text{(Eq. SS-1)}
\]

Where:

- Decrease in SF$_6$ Inventory = (Pounds of SF$_6$ stored in containers at the beginning of the year) – (Pounds of SF$_6$ stored in containers at the end of the year).
- Acquisitions of SF$_6$ = (Pounds of SF$_6$ purchased from chemical producers or suppliers in bulk) + (Pounds of SF$_6$ returned by equipment users) + (Pounds of SF$_6$ returned to site after off-site recycling).
- Disbursements of SF$_6$ = (Pounds of SF$_6$ contained in new equipment delivered to customers) + (Pounds of SF$_6$ delivered to equipment users in containers) + (Pounds of SF$_6$ returned to suppliers) + (Pounds of SF$_6$ sent off-site for recycling) + (Pounds of SF$_6$ sent off-site for destruction).

(b) Use the mass-balance method in paragraph (a) of this section to estimate emissions of PFCs associated with the manufacture or refurbishment of power transformers, substituting the relevant PFC(s) for SF$_6$ in Equation SS–1 of this section.

(c) Estimate the disbursements of SF$_6$ or PFCs sent to customers in new equipment or cylinders or sent off-site for other purposes including for recycling, for destruction or to be returned to suppliers using Equation SS–2 of this section:

\[
D_{GHG} = \sum_{p=1}^{n} Q_p \quad \text{(Eq. SS-2)}
\]

Where:

- \(D_{GHG}\) = The annual disbursement of SF$_6$ or PFCs sent to customers in new equipment or cylinders or sent off-site for other purposes including for recycling, for destruction or to be returned to suppliers.
- \(Q_p\) = The mass of the SF$_6$ or PFCs charged into equipment or containers over the period p sent to customers or sent off-site for other purposes including for recycling, for destruction or to be returned to suppliers.
- \(n\) = The number of periods in the year.
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(d) Estimate the mass of SF\(_6\) or PFCs disbursed to customers in new equipment or cylinders over the period \(p\) by monitoring the mass flow of the SF\(_6\) or PFCs into the new equipment or cylinders using a flowmeter or by weighing containers before and after gas from containers is used to fill equipment or cylinders.

(e) If the mass of SF\(_6\) or the PFC disbursed to customers in new equipment or cylinders over the period \(p\) is estimated by weighing containers before and after gas from containers is used to fill equipment or cylinders, estimate this quantity using Equation SS–3 of this section:

\[
Q_p = M_B - M_E - E_L \quad \text{(Eq. SS–3)}
\]

Where:
- \(Q_p\) = The mass of SF\(_6\) or the PFC charged into equipment or containers over the period \(p\) sent to customers or sent off-site for other purposes including for recycling, for destruction or to be returned to suppliers.
- \(M_B\) = The mass of the contents of the containers used to fill equipment or cylinders at the beginning of period \(p\).
- \(M_E\) = The mass of the contents of the containers used to fill equipment or cylinders at the end of period \(p\).
- \(E_L\) = The mass of SF\(_6\) or the PFC emitted during the period \(p\) downstream of the containers used to fill equipment or cylinders and in cases where a flowmeter is used, downstream of the flowmeter during the period \(p\) (e.g., emissions from hoses or other flow lines that connect the container to the equipment or cylinder that is being filled).

(f) If the mass of SF\(_6\) or the PFC disbursed to customers in new equipment or cylinders over the period \(p\) is determined using a flowmeter, estimate this quantity using Equation SS–4 of this section:

\[
Q_p = M_{mr} - E_L \quad \text{(Eq. SS–4)}
\]

Where:
- \(Q_p\) = The mass of SF\(_6\) or the PFC charged into equipment or containers over the period \(p\) sent to customers or sent off-site for other purposes including for recycling, for destruction or to be returned to suppliers.
- \(M_{mr}\) = The mass of the SF\(_6\) or the PFC that has flowed through the flowmeter during the period \(p\).
- \(E_L\) = The mass of SF\(_6\) or the PFC emitted during the period \(p\) downstream of the containers used to fill equipment or cylinders and in cases where a flowmeter is used, downstream of the flowmeter during the period \(p\) (e.g., emissions from hoses or other flow lines that connect the container to the equipment or cylinder that is being filled).

(g) Estimate the mass of SF\(_6\) or the PFC emitted during the period \(p\) downstream of the containers used to fill equipment or cylinders (e.g., emissions from hoses or other flow lines that connect the container to the equipment or cylinder that is being filled) using Equation SS–5 of this section:

\[
E_L = \sum_{i=1}^{n} F_{Ci} \times EF_{Ci} \quad \text{(Eq. SS–5)}
\]

Where:
- \(E_L\) = The mass of SF\(_6\) or the PFC emitted during the period \(p\) downstream of the containers used to fill equipment or cylinders and in cases where a flowmeter is used, downstream of the flowmeter during the period \(p\) (e.g., emissions from hoses or other flow lines that connect
§ 98.454 Monitoring and QA/QC requirements.

(a) For calendar year 2011 monitoring, you may follow the provisions of §98.3(d)(1) through (d)(2) for best available monitoring methods rather than follow the monitoring requirements of this section. For purposes of this subpart, any reference in §98.3(d)(1) through (d)(2) to 2010 means 2011, March 31 means June 30, and April 1 means July 1. Any reference to the effective date in §98.3(d)(1) through (d)(2) means February 28, 2011.

(b) Ensure that all the quantities required by the equations of this subpart have been measured using either flowmeters with an accuracy and precision of ±1 percent of full scale or better or scales with an accuracy and precision of ±1 percent of the filled weight (gas plus tare) of the containers of SF₆ or PFCs that are typically weighed on the scale. For scales that are generally used to weigh cylinders containing 115 pounds of gas when full, this equates to ±1 percent of the sum of 115 pounds and approximately 120 pounds tare, or slightly more than ±2 pounds. Account for the tare weights of the containers. You may accept gas masses or weights provided by the gas supplier e.g., for the contents of cylinders containing new gas or for the heels remaining in cylinders returned to the gas supplier) if the supplier provides documentation verifying that accuracy standards are met; however, you remain responsible for the accuracy of these masses and weights under this subpart.

(c) All flow meters, weigh scales, and combinations of volumetric and density measures that are used to measure or calculate quantities under this subpart must be calibrated using calibration procedures specified by the flowmeter, scale, volumetric or density measure equipment manufacturer. Calibration must be performed prior to the first reporting year. After the initial calibration, recalibration must be performed at the minimum frequency specified by the manufacturer.

(d) For purposes of Equations SS–5 of this subpart, the emission factor for the valve-hose combination (EFᵢ) must be estimated using measurements and
or engineering assessments or calculations based on chemical engineering principles or physical or chemical laws or properties. Such assessments or calculations may be based on, as applicable, the internal volume of hose or line that is open to the atmosphere during coupling and decoupling activities, the internal pressure of the hose or line, the time the hose or line is open to the atmosphere during coupling and decoupling activities, the frequency with which the hose or line is purged and the flow rate during purges. You must develop a value for $E_F \text{ or use an industry-developed value}$ for each combination of hose and valve fitting, to use in Equation SS–5 of this subpart. The value for $E_F$ must be determined for each combination of hose and valve fitting of a given diameter or size. The calculation must be recalculated annually to account for changes to the specifications of the valves or hoses that may occur throughout the year.

(e) Electrical equipment manufacturers and refurbishers must account for SF$_6$ or PFC emissions that occur as a result of unexpected events or accidental losses, such as a malfunctioning hose or leak in the flow line, during the filling of equipment or containers for disbursement by including these losses in the estimated mass of SF$_6$ or the PFC emitted downstream of the container or flowmeter during the period $p$.

(f) If the mass of SF$_6$ or the PFC disbursement to customers in new equipment over the period $p$ is determined by assuming that it is equal to the equipment's nameplate capacity or, in cases where equipment is shipped with a partial charge, equal to its partial shipping charge, equipment samples for conducting the nameplate capacity tests must be selected using the following stratified sampling strategy in this paragraph. For each make and model, group the measurement conditions to reflect predictable variability in the facility's filling practices and conditions (e.g., temperatures at which equipment is filled). Then, independently select equipment samples at random from each make and model under each group of conditions. To account for variability, a certain number of these measurements must be performed to develop a robust and representative average nameplate capacity (or shipping charge) for each make, model, and group of conditions. A Student T distribution calculation should be conducted to determine how many samples are needed for each make, model, and group of conditions as a function of the relative standard deviation of the sample measurements. To determine a sufficiently precise estimate of the nameplate capacity, the number of measurements required must be calculated to achieve a precision of one percent of the true mean, using a 95 percent confidence interval. To estimate the nameplate capacity for a given make and model, you must use the lowest mean value among the different groups of conditions, or provide justification for the use of a different mean value for the group of conditions that represents the typical practices and conditions for that make and model. Measurements can be conducted using SF$_6$, another gas, or a liquid. Re-measurement of nameplate capacities should be conducted every five years to reflect cumulative changes in manufacturing methods and conditions over time.

(g) Ensure the following QA/QC methods are employed throughout the year:

(1) Procedures are in place and followed to track and weigh all cylinders or other containers at the beginning and end of the year.

(h) You must adhere to the following QA/QC methods for reviewing the completeness and accuracy of reporting:

(1) Review inputs to Equation SS–1 of this subpart to ensure inputs and outputs to the company's system are included.

(2) Do not enter negative inputs and confirm that negative emissions are not calculated. However, the decrease in SF$_6$ inventory may be calculated as negative.

(3) Ensure that beginning-of-year inventory matches end-of-year inventory from the previous year.

(4) Ensure that in addition to SF$_6$ purchased from bulk gas distributors, SF$_6$ returned from equipment users with or inside equipment and SF$_6$ returned from off-site recycling are also accounted for among the total additions.
§ 98.455 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG emissions calculations is required. Replace missing data, if needed, based on data from similar manufacturing operations, and from similar equipment testing and decommissioning activities for which data are available.

§ 98.456 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the following information for each chemical at the facility level:

(a) Pounds of SF₆ and PFCs stored in containers at the beginning of the year.
(b) Pounds of SF₆ and PFCs stored in containers at the end of the year.
(c) Pounds of SF₆ and PFCs purchased in bulk.
(d) Pounds of SF₆ and PFCs returned by equipment users with or inside equipment.
(e) Pounds of SF₆ and PFCs returned to site from off site after recycling.
(f) Pounds of SF₆ and PFCs inside new equipment delivered to customers.
(g) Pounds of SF₆ and PFCs delivered to equipment users in containers.
(h) Pounds of SF₆ and PFCs returned to suppliers.
(i) Pounds of SF₆ and PFCs sent off site for destruction.
(j) Pounds of SF₆ and PFCs sent off site to be recycled.
(k) The nameplate capacity of the equipment, in pounds, delivered to customers with SF₆ or PFCs inside, if different from the quantity in paragraph (f) of this section.
(l) A description of the engineering methods and calculations used to determine emissions from hoses or other flow lines that connect the container to the equipment that is being filled.
(m) The values for EFc for each hose and valve combination and the associated valve fitting sizes and hose diameters.
(n) The total number of fill operations for each hose and valve combination, or, Fc of Equation SS–5 of this subpart.
(o) The mean value for each make, model, and group of conditions if the mass of SF₆ or the PFC disbursted to customers in new equipment over the period p is determined by assuming that it is equal to the equipment’s nameplate capacity or, in cases where equipment is shipped with a partial charge, equal to its partial shipping charge.
(p) The number of samples and the upper and lower bounds on the 95 percent confidence interval for each make, model, and group of conditions if the mass of SF₆ or the PFC disbursted to customers in new equipment over the period p is determined by assuming that it is equal to the equipment’s nameplate capacity or, in cases where equipment is shipped with a partial charge, equal to its partial shipping charge.
(q) Pounds of SF₆ and PFCs used to fill equipment at off-site electric power transmission or distribution locations, or Mc of Equation SS–6 of this subpart.
(r) Pounds of SF₆ and PFCs used to charge the equipment prior to leaving the electrical equipment manufacturer or refurbishment facility, or Mc of Equation SS–6 of this subpart.
(s) The nameplate capacity of the equipment, in pounds, installed at off-site electric power transmission or distribution locations used to determine emissions from installation, or Ni, of Equation SS–6 of this subpart.
(t) For any missing data, you must report the reason the data were missing, the parameters for which the data were missing, the substitute parameters used to estimate emissions in their absence, and the quantity of emissions thereby estimated.

§ 98.457 Records that must be retained.

In addition to the information required by §98.3(g), you must retain the following records:

(a) All information reported and listed in §98.456.
(b) Accuracy certifications and calibration records for all scales and monitoring equipment, including the method or manufacturer’s specification used for calibration.
(c) Certifications of the quantity of gas, in pounds, charged into equipment at the electrical equipment manufacturer or refurbishment facility as well
as the actual quantity of gas, in pounds, charged into equipment at installation.

(d) Check-out and weigh-in sheets and procedures for cylinders.

(e) Residual gas amounts, in pounds, in cylinders sent back to suppliers.

(f) Invoices for gas purchases and sales.

(g) GHG Monitoring Plans, as described in §98.3(g)(5), must be completed by April 1, 2011.

§ 98.458 Definitions.

All terms used in this subpart have the same meaning given in the CAA and subpart A of this part.

Subpart TT—Industrial Waste Landfills

Source: 75 FR 39773, July 12, 2010, unless otherwise noted.

§ 98.460 Definition of the source category.

(a) This source category applies to industrial waste landfills that accepted waste on or after January 1, 1980, and that are located at a facility whose total landfill design capacity is greater than or equal to 300,000 metric tons.

(b) An industrial waste landfill is a landfill other than a municipal solid waste landfill, a RCRA Subtitle C hazardous waste landfill, or a TSCA hazardous waste landfill, in which industrial solid waste, such as RCRA Subtitle D wastes (non-hazardous industrial solid waste, defined in 40 CFR 257.2), commercial solid wastes, or conditionally exempt small quantity generator wastes, is placed. An industrial waste landfill includes all disposal areas at the facility.

(c) This source category does not include:

(1) Dedicated construction and demolition waste landfills. A dedicated construction and demolition waste landfill receives materials generated from the construction or destruction of structures such as buildings, roads, and bridges.

(2) Industrial waste landfills that only receive one or more of the following inert waste materials:

(i) Coal combustion residue (e.g., fly ash).

(ii) Cement kiln dust.

(iii) Rocks and/or soil from excavation and construction and similar activities.

(iv) Glass.

(v) Non-chemically bound sand (e.g., green foundry sand).

(vi) Clay, gypsum, or pottery cull.

(vii) Bricks, mortar, or cement.

(viii) Furnace slag.

(ix) Materials used as refractory (e.g., alumina, silicon, fire clay, fire brick).

(x) Plastics (e.g., polyethylene, polypropylene, polyethylene terephthalate, polystyrene, polyvinyl chloride).

(xi) Other waste material that has a volatile solids concentration of 0.5 weight percent (on a dry basis) or less.

(d) This source category consists of the following sources at industrial waste landfills: Landfills, gas collection systems at landfills, and destruction devices for landfill gases (including flares).

§ 98.461 Reporting threshold.

You must report GHG emissions under this subpart if your facility contains an industrial waste landfill meeting the criteria in §98.460 and the facility meets the requirements of §98.2(a)(2). For the purposes of §98.2(a)(2), the emissions from the industrial waste landfill are to be determined using the methane generation corrected for oxidation as determined using Equation TT–6 of this subpart times the global warming potential for methane in Table A–1 of subpart A of this part.

§ 98.462 GHGs to report.

(a) You must report CH₄ generation and CH₄ emissions from industrial waste landfills.

(b) You must report CH₄ destruction resulting from landfill gas collection and destruction devices, if present.

(c) You must report under subpart C of this part (General Stationary Fuel Combustion Sources) the emissions of CO₂, CH₄, and N₂O from each stationary combustion unit associated with the landfill gas destruction device, if present, by following the requirements of subpart C of this part.
§ 98.463 Calculating GHG emissions.

(a) For each industrial waste landfill subject to the reporting requirements of this subpart, calculate annual modeled \(\text{CH}_4\) generation according to the applicable requirements in paragraphs (a)(1) through (a)(3) of this section. Apply Equation TT–1 of this section for each waste stream disposed of in the landfill and sum the \(\text{CH}_4\) generation rates for all waste streams disposed of in the landfill to calculate the total annual modeled \(\text{CH}_4\) generation rate for the landfill.

(1) Calculate annual modeled \(\text{CH}_4\) generation using Equation TT–1 of this section.

\[
G_{\text{CH}_4} = \left[ \sum_{x=5}^{T} W_x \times \text{DOC}_x \times \text{MCF} \times \text{DOC}_F \times F_x \times \frac{16}{12} \right] \left( e^{-k(T-x-1)} - e^{-k(T-x)} \right) \quad \text{(Eq. TT–1)}
\]

Where:

- \(G_{\text{CH}_4}\) = Modeled methane generation rate in reporting year \(T\) (metric tons \(\text{CH}_4\)).
- \(X\) = Year in which waste was disposed.
- \(S\) = Start year of calculation. Use the year 1960 or the opening year of the landfill, whichever is more recent.
- \(T\) = Reporting year for which emissions are calculated.
- \(W_x\) = Quantity of waste disposed in the industrial waste landfill in year \(X\) from measurement data and/or other company records (metric tons, as received (wet weight)).
- \(\text{DOC}_x\) = Degradable organic carbon for year \(X\) from Table TT–1 of this subpart or from measurement data (as specified in paragraph (a)(3) of this section), if available [fraction (metric tons C/metric ton waste)].
- \(\text{DOC}_F\) = Fraction of DOC dissimilated (fraction); use the default value of 0.5.
- \(\text{MCF}\) = Methane correction factor (fraction); use the default value of 1.
- \(F_x\) = Fraction by volume of \(\text{CH}_4\) in landfill gas (fraction, dry basis). If you have a gas collection system, use the annual average \(\text{CH}_4\) concentration from measurement data for the given year; otherwise, use the default value of 0.5.
- \(k\) = Decay rate constant from Table TT–1 of this subpart (yr\(^{-1}\)). Select the most applicable \(k\) value for the majority of the past 10 years (or operating life, whichever is shorter).

(2) Waste stream quantities. Determine annual waste quantities as specified in paragraphs (a)(2)(i) through (ii) of this section for each year starting with January 1, 1980 or the year the landfills first accepted waste if after January 1, 1980, up until the most recent reporting year. The choice of method for determining waste quantities will vary according to the availability of historical data. Beginning in the first emissions monitoring year (2011 or later) and for each year thereafter, use the procedures in paragraph (a)(2)(i) of this section to determine waste stream quantities. These procedures should also be used for any year prior to the first emissions monitoring year for which the data are available. For other historical years, use paragraph (a)(2)(i) of this section, where waste disposal records are available, and use the procedures outlined in paragraph (a)(2)(ii) of this section when waste disposal records are unavailable, to determine waste stream quantities. Historical disposal quantities deposited (i.e., prior to the first year in which monitoring begins) should only be determined once, as part of the first annual report, and the same values should be used for all subsequent annual reports, supplemented by the next year’s data on new waste disposal.

(i) Determine the quantity of waste (in metric tons as received, i.e., wet weight) disposed of in the landfill separately for each waste stream by any one or a combination of the following methods.

(A) Direct mass measurements.
(B) Direct volume measurements multiplied by waste stream density determined from periodic density measurement data or process knowledge.
(C) Mass balance procedures, determining the mass of waste as the difference between the mass of the process inputs and the mass of the process outputs.
(D) The number of loads (e.g., trucks) multiplied by the mass of waste per
(ii) Determine the historical disposal quantities for landfills using the Waste Disposal Factor approach in paragraphs (a)(2)(ii)(A) and (B) of this section when historical production or processing data are available. If production or processing data are available for a given year, you must use Equation TT–3 of this section for that year. Determine historical disposal quantities using the method specified in paragraph (a)(2)(ii)(C) of this section when historical production or processing data are not available, and for waste streams received from an off-site facility when historical disposal quantities cannot be determined using the methods specified in paragraph (a)(2)(i) of this section.

(A) Determining Waste Disposal Factor: For each waste stream disposed of in the landfill, calculate the average waste disposal rate per unit of production or unit throughput using all available waste quantity data and corresponding production or processing rates for the process generating that waste or, if appropriate, the facility, using Equation TT–2 of this section.

\[
WDF = \left( \frac{\sum_{x=Y_1}^{Y_2} \left( \frac{W_x}{N \times P_x} \right)}{N} \right) \quad (\text{Eq. TT-2})
\]

Where:
- \(WDF\) = Average waste disposal factor as determined for the first annual report required for this industrial waste landfill (metric tons per production unit).
- \(X\) = Year in which waste was disposed. Include only those years for which disposal and production data are both available; the years do not need to be sequential.
- \(Y_1\) = First year in which disposal and production/throughput data are both available.
- \(Y_2\) = First year for which GHG emissions from this industrial waste landfill must be reported.
- \(N\) = Number of years for which disposal and production/throughput data are both available.

\(W_x\) = Quantity of waste placed in the industrial waste landfill in year \(X\) from measurement data and/or other company records (metric tons, as received (wet weight)).

\(P_x\) = Quantity of product produced or feedstock entering the process or facility in year \(X\) from measurement data and/or other company records (production units). You must use the same basis for all years in the calculation. That is, \(P_x\) must be determined based on production (quantity of product produced) for all “\(N\)” years or \(P_x\) must be determined based on throughput (quantity of feedstock) for all “\(N\)” years.

(B) Calculate waste: For each waste stream disposed of in the landfill, calculate the waste disposal quantities for historic years in which direct waste disposal measurements are not available using historical production data and Equation TT–3 of this section.

\[
W_x = WDF \times P_x \quad (\text{Eq. TT-3})
\]

Where:
- \(X\) = Historic year in which waste was disposed.
- \(W_x\) = Calculated quantity of waste placed in the landfill in year \(X\) (metric tons).
- \(WDF\) = Average waste disposal factor from Equation TT–2 of this section (metric tons per production unit).
- \(P_x\) = Quantity of product produced or feedstock entering the process or facility in year \(X\) from measurement data and/or other company records (production units). You must use the same basis for \(P_x\) (either production only or throughput only) as used to determine \(WDF\) in Equation TT–2 of this section.

(C) For any year in which historic production or processing data are not available such that historic waste quantities cannot be estimated using Equation TT–3 of this section, calculate an average annual bulk waste disposal quantity using fixed average annual bulk waste disposal quantity for each year for which historic disposal quantity and Equation TT–4 of this section.

\[
W_x = \frac{LFC}{(YrData - YrOpen + 1)} \quad (\text{Eq. TT-4})
\]

Where:
- \(W_x\) = Calculated average annual bulk waste disposal quantity (metric tons) for year \(X\) from historical production data and Equation TT–4 of this section.
- \(LFC\) = Load factor coefficient.
- \(YrData\) = Historic year in which waste was disposed.
- \(YrOpen\) = Historic year in which disposal and production data are first available.

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Degradable organic content (DOC).

For any year, X, in Equation TT–1 of this section, use either the applicable default DOC values provided in Table TT–1 of this subpart or determine values for DOC, as specified in paragraphs (a)(3)(i) through (iv) of this section. When developing historical waste quantity data, you may use default DOC values from Table TT–1 of this subpart for certain years and determined values for DOC, for other years. The historical values for DOC or DOC, must be developed only for the first annual report required for the industrial waste landfill; and used for all subsequent annual reports (e.g., if DOC for year x=1990 was determined to be 0.15 in the first reporting year, you must use 0.15 for the 1990 DOC value for all subsequent annual reports).

(i) For the first year in which GHG emissions from this industrial waste landfill must be reported, determine the DOC, value of each waste stream disposed of in the landfill no less frequently than once per quarter using the methods specified in §98.464(b). Calculate annual DOC, for each waste stream as the arithmetic average of all DOC, values for that waste stream that were measured during the year.

(ii) For subsequent years (after the first year in which GHG emissions from this industrial waste landfill must be reported), either use the DOC, of each waste stream calculated for the most recent reporting year for which DOC values were determined according to paragraph (a)(3)(i) of this section, or determine new DOC values for that year following the requirements in paragraph (a)(3)(i) of this section. You must determine new DOC values following the requirements in paragraph (a)(3)(i) of this section if changes in the process operations occurred during the previous reporting year that can reasonably be expected to alter the characteristics of the waste stream, such as the water content or volatile solids concentration. Should changes to the waste stream occur, you must revise the GHG Monitoring Plan as required in §98.3(g)(5)(ii) and report the new DOC, value according to the requirements of §98.466.

(iii) If DOC, measurement data for each waste stream are available according to the methods specified in §98.464(b) for years prior to the first year in which GHG emissions from this industrial waste landfill must be reported, determine DOC, for each waste stream as the arithmetic average of all DOC, values for that waste stream that were measured in Year X. A single measurement value is acceptable for determining DOC, for years prior to the first reporting year.

(iv) For historical years for which DOC, measurement data, determined according to the methods specified in §98.464(b), are not available, determine the historical values for DOC, using the applicable methods specified in paragraphs (a)(3)(iv)(A) and (B) of this section. Determine these historical values for DOC, only for the first annual report required for this industrial waste landfill; historical values for DOC, calculated for this first annual report should be used for all subsequent annual reports.

(A) For years in which waste stream-specific disposal quantities are determined (as required in paragraphs (a)(2)(ii)(A) and (B) of this section), calculate the average DOC value for a given waste stream as the arithmetic average of all DOC measurements of that waste stream that follow the methods provided in §98.464(b), including any measurement values for years prior to the first reporting year and the four measurement values required in the first reporting year. Use the resulting waste-specific average DOC value for all applicable years (i.e., years in which waste stream-specific...
disposal quantities are determined) for which direct DOC measurement data are not available.

(B) For years for which bulk waste disposal quantities are determined according to paragraphs (a)(2)(i)(C) of this section, calculate the weighted average bulk DOC value according to the following: Calculate the average DOC value for each waste stream as the arithmetic average of all DOC measurements of that waste stream that follows the methods provided in §98.464(b) (generally, this will include only the DOC values determined in the first year in which GHG emissions from this industrial waste landfill must be reported); calculate the average annual disposal quantity for each waste stream as the arithmetic average of all disposal quantities of that stream; and calculate the bulk waste DOC value using Equation TT–5 of this section. Use the bulk waste DOC value as DOC₀ for all years for which bulk waste disposal quantities are determined according to paragraphs (a)(2)(i)(C) of this section.

\[
DOC_{bulk} = \frac{\sum_{n=1}^{N} (DOC_{ave,n} \times W_{ave,n})}{\sum_{n=1}^{N} W_{ave,n}} 
\]

(Eq. TT-5)

Where:

- \(DOC_{bulk}\) = Degradable organic content value for bulk historical waste placed in the landfill (mass fraction).
- \(N\) = Number of different waste streams placed in the landfill.
- \(n\) = Index for waste stream.
- \(DOC_{ave,n}\) = Average degradable organic content value for waste stream “\(n\)” based on available measurement data (mass fraction).
- \(W_{ave,n}\) = Average annual quantity of waste stream “\(n\)” placed in the landfill for years in which waste stream-specific disposal quantities have been determined (metric tons per year, wet basis).

(b) For each landfill, calculate \(\text{CH}_4\) generation (adjusted for oxidation in cover materials) and \(\text{CH}_4\) emissions (taking into account any \(\text{CH}_4\) recovery, if applicable, and oxidation in cover materials) according to the applicable methods in paragraphs (b)(1) through (b)(3) of this section.

(b)(1) For each landfill, calculate \(\text{CH}_4\) generation, adjusted for oxidation, from the modeled \(\text{CH}_4\) (\(G_{\text{CH}_4}\) from Equation TT–1 of this section) using Equation TT–6 of this section.

\[
MG = G_{\text{CH}_4} \times (1 - OX) \quad \text{(Eq. TT-6)}
\]

Where:

- \(MG\) = Methane generation, adjusted for oxidation, from the landfill in the reporting year (metric tons \(\text{CH}_4\)).
- \(G_{\text{CH}_4}\) = Modeled methane generation rate in reporting year from Equation TT–1 of this section (metric tons \(\text{CH}_4\)).
- \(OX\) = Oxidation fraction. Use the default value of 0.1 (10 percent).

(b)(2) For landfills that do not have landfill gas collection systems operating during the reporting year, the \(\text{CH}_4\) emissions are equal to the \(\text{CH}_4\) generation (\(MG\)) calculated in Equation TT–6 of this section.

(b)(3) For landfills with landfill gas collection systems in operation during any portion of the reporting year, perform all of the calculations specified in paragraphs (b)(3)(i) through (iv) of this section.

(i) Calculate the quantity of \(\text{CH}_4\) recovered according to the requirements at §98.343(b).

(ii) Calculate \(\text{CH}_4\) emissions using the Equation HH–6 of §98.343(c)(3)(i), except use \(G_{\text{CH}_4}\) determined using Equation TT–1 of this section in Equation HH–6 of §98.343(c)(3)(i).

(iii) Calculate \(\text{CH}_4\) generation (\(MG\)) from the quantity of \(\text{CH}_4\) recovered using Equation HH–7 of §98.343(c)(3)(ii).
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§ 98.464 Monitoring and QA/QC requirements.

(a) For calendar year 2011 monitoring, the facility may submit a request to the Administrator to use one or more best available monitoring methods as listed in §98.3(d)(1)(i) through (iv). The request must be submitted no later than October 12, 2010 and must contain the information in §98.3(d)(2)(ii). To obtain approval, the request must demonstrate to the Administrator’s satisfaction that it is not reasonably feasible to acquire, install, and operate a required piece of monitoring equipment by January 1, 2011. The use of best available monitoring methods will not be approved beyond December 31, 2011.

(b) For each waste stream for which you choose to determine volatile solids concentration for the purposes of paragraph §98.460(c)(2)(xii) or choose to determine a landfill-specific DOC, for use in Equation TT-1 of this subpart, you must collect and test a representative sample of that waste stream using the methods specified in paragraphs (b)(1) through (b)(4) of this section.

(1) Develop and follow a sampling plan to collect a representative sample of each waste stream for which testing is elected.

(2) Determine the percent total solids and the percent volatile solids of each sample following Standard Method 2540G “Total, Fixed, and Volatile Solids in Solid and Semisolid Samples” (incorporated by reference; see §98.7).

(3) Calculate the volatile solids concentration (weight percent on a dry basis) using Equation TT-7 of this section.

\[
C_{VS} = \frac{\% \text{ Volatile Solids}}{\% \text{ Total Solids}} \times 100\% \quad \text{(Eq. TT-7)}
\]

Where:

- \(C_{VS}\) = Volatile solids concentration in the waste stream (weight percent, dry basis).
- \(\% \text{ Volatile Solids}\) = Percent volatile solids determined using Standard Method 2540G “Total, Fixed, and Volatile Solids in Solid and Semisolid Samples” (incorporated by reference; see §98.7).
- \(\% \text{ Total Solids}\) = Percent total solids determined using Standard Method 2540G “Total, Fixed, and Volatile Solids in Solid and Semisolid Samples” (incorporated by reference; see §98.7).

(4) Calculate the waste stream-specific DOC\(_x\) value using Equation TT-8 of this section.

\[
DOC_x = F_{DOC} \times \% \text{ Volatile Solids}_x \quad \text{(Eq. TT-8)}
\]

Where:

- \(DOC_x\) = Degradable organic content of waste stream in Year X (weight fraction, wet basis)
- \(F_{DOC}\) = Fraction of the volatile residue that is degradable organic carbon (weight fraction). Use a default value of 0.6.
- \(\% \text{ Volatile Solids}_x\) = Percent volatile solids determined using Standard Method 2540G “Total, Fixed, and Volatile Solids in Solid and Semisolid Samples” (incorporated by reference; see §98.7) for Year X.

(c) For landfills with gas collection systems, operate, maintain, and calibrate a gas composition monitor capable of measuring the concentration of \(CH_4\) according to the requirements specified at §98.344(b).

(d) For landfills with gas collection systems, install, operate, maintain, and calibrate a gas flow meter capable of measuring the volumetric flow rate of the recovered landfill gas according to the requirements specified at §98.344(c).

(e) For landfills with gas collection systems, all temperature, pressure, and...
§ 98.465 Procedures for estimating missing data.

(a) A complete record of all measured parameters used in the GHG emissions calculations is required. Therefore, whenever a quality-assured value of a required parameter is unavailable (e.g., if a meter malfunctions during operation or if a required fuel sample is not taken), a substitute data value for the missing parameter shall be used in the calculations, in accordance with paragraph (b) of this section.

(b) For industrial waste landfills with gas collection systems, follow the procedures for estimating missing data specified in §98.345(a) and (b).

§ 98.466 Data reporting requirements.

In addition to the information required by §98.3(c), each annual report must contain the following information for each landfill.

(a) Report the following general landfill information:
   (1) A classification of the landfill as “open” (actively received waste in the reporting year) or “closed” (no longer receiving waste).
   (2) The year in which the landfill first started accepting waste for disposal.
   (3) The last year the landfill accepted waste (for open landfills, enter the estimated year of landfill closure).
   (4) The capacity (in metric tons) of the landfill.
   (5) An indication of whether leachate recirculation is used during the reporting year and its typical frequency of use over the past 10 years (e.g., used several times a year for the past 10 years, used at least once a year for the past 10 years, used occasionally but not every year over the past 10 years, not used).

(b) Report the following waste characterization information:
   (1) The number of waste streams (including “Other Industrial Solid Waste (not otherwise listed)”) for which Equation TT–1 of this subpart is used to calculate modeled CH₄ generation.
   (2) A description of each waste stream (including the types of materials in each waste stream).

(c) For each waste stream identified in paragraph (b) of this section, report the following information:
   (1) The decay rate (k) value used in the calculations.
   (2) The method(s) for estimating historical waste disposal quantities and the range of years for which each method applies.
   (3) If Equation TT–2 of this subpart is used, provide:
      (i) The total number of years (N) for which disposal and production data are both available.
      (ii) The year, the waste disposal quantity and production quantity for each year Equation TT–2 of this subpart applies.
      (iii) The average waste disposal factor (WDF) calculated for the waste stream.
   (4) If Equation TT–4 of this subpart is used, provide:
      (i) The value of landfill capacity (LFC).
      (ii) YrData.
      (iii) YrOpen.
   (d) For each year of landfilling starting with the “Start Year” (S) to the current reporting year, report the following information:
      (1) The quantity of waste (Wx) disposed of in the landfill (metric tons, wet weight) for each waste stream identified in paragraph (b) of this section.
      (2) The degradable organic carbon (DOCx) value (mass fraction) and an indication as to whether this was the default value from Table TT–1 of this subpart or a value determined through sampling and calculation for each
waste stream identified in paragraph (b) of this section.

(3) The fraction of CH₄ in the landfill gas (volume fraction, dry basis) and an indication as to whether this was the default value or a value determined through measurement data.

(e) Report the following information describing the landfill cover material:

(1) The type of cover material used (as either organic cover, clay cover, sand cover, or other soil mixtures).

(2) For each type of cover material used, the surface area (in square meters) at the start of the reporting year for the landfill sections that contain waste and that are associated with the selected cover type.

(f) The modeled annual methane generation rate for the reporting year (metric tons CH₄) calculated using Equation TT–1 of this subpart.

(g) For landfills without gas collection systems, provide:

(1) The annual methane emissions (i.e., the methane generation, adjusted for oxidation, calculated using Equation TT–5 of this subpart), reported in metric tons CH₄.

(2) An indication of whether passive vents and/or passive flares (vents or flares that are not considered part of the gas collection system as defined in §98.6) are present at this landfill.

(h) For landfills with gas collection systems, in addition to the reporting requirements in paragraphs (a) through (f) of this section, you must report according to §98.346(1).

§ 98.467 Records that must be retained.

In addition to the information required by §98.3(g), you must retain the calibration records for all monitoring equipment, including the method or manufacturer’s specification used for calibration.

§ 98.468 Definitions.

Except as provided below, all terms used in this subpart have the same meaning given in the CAA and subpart A of this part.

Solid waste has the meaning established by the Administrator pursuant to the Solid Waste Disposal Act (42 U.S.C.A. 6901 et seq.).

Waste stream means industrial solid waste material that is generated by a specific manufacturing process or client. For wastes generated at the facility that includes the industrial waste landfill, a waste stream is the industrial solid waste material generated by a specific processing unit at that facility. For industrial solid wastes that are received from off-site facilities, a waste stream can be defined as each waste shipment or group of waste shipments received from a single client or group of clients that produce industrial solid wastes with similar waste properties.

### TABLE TT–1 TO SUBPART TT—DEFAULT DOC AND DECAY RATE VALUES FOR INDUSTRIAL WASTE LANDFILLS

<table>
<thead>
<tr>
<th>Industry/Waste Type</th>
<th>DOC (weight fraction, wet basis)</th>
<th>k [dry climate] [yr⁻¹]</th>
<th>k [moderate climate] [yr⁻¹]</th>
<th>k [wet climate] [yr⁻¹]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Processing</td>
<td>0.22</td>
<td>0.06</td>
<td>0.12</td>
<td>0.18</td>
</tr>
<tr>
<td>Pulp and Paper</td>
<td>0.20</td>
<td>0.02</td>
<td>0.03</td>
<td>0.04</td>
</tr>
<tr>
<td>Wood and Wood Product</td>
<td>0.43</td>
<td>0.02</td>
<td>0.03</td>
<td>0.04</td>
</tr>
<tr>
<td>Construction and Demolition</td>
<td>0.04</td>
<td>0.02</td>
<td>0.03</td>
<td>0.04</td>
</tr>
<tr>
<td>Inert Waste (i.e., wastes listed in §98.460(b)(3))</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other Industrial Solid Waste (not otherwise listed)</td>
<td>0.20</td>
<td>0.02</td>
<td>0.04</td>
<td>0.06</td>
</tr>
</tbody>
</table>

*The applicable climate classification is determined based on the annual rainfall plus the recirculated leachate application rate. Recirculated leachate application rate (in inches/year) is the total volume of leachate recirculated and applied to the landfill divided by the area of the portion of the landfill containing waste (with appropriate unit conversions).

(1) Dry climate = precipitation plus recirculated leachate less than 20 inches/year.

(2) Moderate climate = precipitation plus recirculated leachate from 20 to 40 inches/year (inclusive).

(3) Wet climate = precipitation plus recirculated leachate greater than 40 inches/year.


§ 98.470

Subpart UU—Injection of Carbon Dioxide

SOURCE: 75 FR 75086, Dec. 1, 2010, unless otherwise noted.

§ 98.470 Definition of the source category.

(a) The injection of carbon dioxide (CO₂) source category comprises any well or group of wells that inject a CO₂ stream into the subsurface.

(b) If you report under subpart RR of this part for a well or group of wells, you are not required to report under this subpart for that well or group of wells.

(c) A facility that is subject to this part only because it is subject to subpart UU of this part is not required to report emissions under subpart C of this part or any other subpart listed in §98.2(a)(1) or (a)(2).

§ 98.471 Reporting threshold.

(a) You must report under this subpart if your facility injects any amount of CO₂ into the subsurface.

(b) For purposes of this subpart, any reference to CO₂ emissions in §98.2(i) shall mean CO₂ received.

§ 98.472 GHGs to report.

You must report the mass of CO₂ received.

§ 98.473 Calculating CO₂ received.

(a) You must calculate and report the annual mass of CO₂ received by pipeline using the procedures in paragraphs (a)(1) or (a)(2) of this section and the procedures in paragraph (a)(3) of this section, if applicable.

(1) For a mass flow meter, you must calculate the total annual mass of CO₂ in a CO₂ stream received in metric tons by multiplying the mass flow by the CO₂ concentration in the flow, according to Equation UU–1 of this section. You must collect these data quarterly. Mass flow and concentration data measurements must be made in accordance with §98.474.

\[
CO_2T,r = \sum_{p=1}^{4} (Q_{r,p} - S_{r,p}) \times C_{CO_2,p,r} \quad (\text{Eq. UU-1})
\]

Where:
- \( CO_2T,r \) = Net annual mass of CO₂ received through flow meter \( r \) (metric tons).
- \( Q_{r,p} \) = Quarterly mass flow through a receiving flow meter \( r \) in quarter \( p \) (metric tons).
- \( S_{r,p} \) = Quarterly mass flow through a receiving flow meter \( r \) that is redelivered to another facility without being injected into your well in quarter \( p \) (metric tons).
- \( C_{CO_2,p,r} \) = Quarterly CO₂ concentration measurement in flow for flow meter \( r \) in quarter \( p \) (wt. percent CO₂, expressed as a decimal fraction).
- \( p \) = Quarter of the year.
- \( r \) = Receiving flow meter.

(2) For a volumetric flow meter, you must calculate the total annual mass of CO₂ in a CO₂ stream received in metric tons by multiplying the volumetric flow at standard conditions by the CO₂ concentration in the flow and the density of CO₂ at standard conditions, according to Equation UU–2 of this section. You must collect these data quarterly. Volumetric flow and concentration data measurements must be made in accordance with §98.474.

\[
CO_2T,r = \sum_{p=1}^{4} (Q_{r,p} - S_{r,p}) \times D \times C_{CO_2,p,r} \quad (\text{Eq. UU-2})
\]
Environmental Protection Agency

§ 98.474 Monitoring and QA/QC requirements.

(a) CO₂ received.

(1) You must determine the quarterly flow rate of CO₂ received by pipeline by following the most appropriate of the following procedures:

(ii) You may measure flow rate at the receiving custody transfer meter prior to any subsequent processing operations at the facility and collect the flow rate quarterly.

(ii) If you took ownership of the CO₂ in a commercial transaction, you may use the quarterly flow rate data from the sales contract if it is an ongoing commercial transaction with discrete shipments.

CO₂ = \sum_{r=1}^{p} CO₂_{T,r} \quad \text{(Eq. UU-3)}

CO₂ = \text{Total net annual mass of CO₂ received (metric tons)}.

CO₂_{T,r} = \text{Net annual mass of CO₂ received (metric tons) as calculated in Equation UU-1 or UU-2 for flow meter r.}

p = \text{Quarter of the year.}

r = \text{Receiving flow meter.}

(b) You must calculate and report the annual mass of CO₂ received in containers using the procedures specified in either paragraph (b)(1) or (b)(2) of this section.

(1) If you are measuring the mass of contents in a container under the provisions of § 98.474(a)(2)(i), you must calculate the CO₂ received in containers using Equation UU-1 of this section.

Where:

CO₂_{T,r} = \text{Annual mass of CO₂ received in containers r (metric tons)}.

CO₂_{P,r} = \text{Quarterly CO₂ concentration measurement of contents in containers r in quarter p (vol. percent CO₂, expressed as a decimal fraction).}

Q_{r,p} = \text{Quarterly volume of contents in containers r in quarter p (standard cubic meters).}

S_{r,p} = \text{Quarterly mass of contents in containers r that is redelivered to another facility without being injected into your well in quarter p (standard cubic meters).}

D = \text{Density of the CO₂ received in containers at standard conditions (metric tons per standard cubic meter): 0.0018682.}

p = \text{Quarter of the year.}

r = \text{Containers.}

§ 98.474 Monitoring and QA/QC requirements.

(a) CO₂ received.

(1) You must determine the quarterly flow rate of CO₂ received by pipeline by following the most appropriate of the following procedures:

(ii) You may measure flow rate at the receiving custody transfer meter prior to any subsequent processing operations at the facility and collect the flow rate quarterly.

(ii) If you took ownership of the CO₂ in a commercial transaction, you may use the quarterly flow rate data from the sales contract if it is an ongoing commercial transaction with discrete shipments.
(iii) If you inject CO₂ from a production process unit that is part of your facility, you may use the quarterly CO₂ flow rate that was measured at the equivalent of a custody transfer meter following procedures provided in subpart PP of this part. To be the equivalent of a custody transfer meter, a meter must measure the flow of CO₂ being transported to an injection well to the same degree of accuracy as a meter used for commercial transactions.

(2) You must determine the quarterly mass or volume of contents in all containers if you receive CO₂ in containers by the most appropriate of the following procedures:

(i) You may measure the mass of contents of containers summed quarterly using weigh bills, scales, or load cells.

(ii) You may determine the volume of the contents of containers summed quarterly.

(iii) If you took ownership of the CO₂ in a commercial transaction, you may use the quarterly mass or volume of contents from the sales contract if it is a one-time transaction or from invoices or manifests if it is an ongoing commercial transaction with discrete shipments.

(3) You must determine a quarterly concentration of the CO₂ received that is representative of all CO₂ received in that quarter by following the most appropriate of the following procedures:

(i) You may sample the CO₂ stream at least once per quarter at the point of receipt and measure its CO₂ concentration.

(ii) If you took ownership of the CO₂ in a commercial transaction for which the sales contract was contingent on CO₂ concentration, and if the supplier of the CO₂ sampled the CO₂ stream in a quarter and measured its concentration per the sales contract terms, you may use the CO₂ concentration data from the sales contract for that quarter.

(iii) If you inject CO₂ from a production process unit that is part of your facility, you may report the quarterly CO₂ concentration of the CO₂ stream supplied that was measured following procedures provided in subpart PP of this part as the quarterly CO₂ concentration of the CO₂ stream received.

(4) You must assume that the CO₂ you receive meets the definition of a CO₂ stream unless you can trace it through written records to a source other than a CO₂ stream.

(b) Measurement devices.

(1) All flow meters must be operated continuously except as necessary for maintenance and calibration.

(2) You must calibrate all flow meters used to measure quantities reported in §98.476 according to the calibration and accuracy requirements in §98.3(1).

(3) You must operate all measurement devices according to one of the following. You may use an appropriate standard method published by a consensus-based standards organization if such a method exists or an industry standard practice. Consensus-based standards organizations include, but are not limited to, the following: ASTM International, the American National Standards Institute (ANSI), the American Gas Association (AGA), the American Society of Mechanical Engineers (ASME), the American Petroleum Institute (API), and the North American Energy Standards Board (NAESB).

(4) You must ensure that any flow meter calibrations performed are National Institute of Standards and Technology (NIST) traceable.

(c) General.

(1) If you measure the concentration of any CO₂ quantity for reporting, you must measure according to one of the following. You may use an appropriate standard method published by a consensus-based standards organization if such a method exists or an industry standard practice.

(2) You must convert all measured volumes of CO₂ to the following standard industry temperature and pressure conditions for use in Equations UU–2 of this subpart: standard cubic meters at a temperature of 60 degrees Fahrenheit and at an absolute pressure of 1 atmosphere.

(3) For 2011, you may follow the provisions of §98.3(d)(1) through (2) for best available monitoring methods rather than follow the monitoring requirements of this section. For purposes of this subpart, any reference to
§ 98.475 Procedures for estimating missing data.

A complete record of all measured parameters used in the GHG quantities calculations is required.

(a) Whenever the monitoring procedures for all facilities that used flow meters covered under this subpart cannot be followed to measure flow, the following missing data procedures must be followed:

(1) Another calculation methodology listed in §98.474(a)(1) must be used if possible.

(2) If another method listed in §98.474(a)(1) cannot be used, a quarterly flow rate value that is missing must be estimated using a representative flow rate value from the nearest previous time period.

(b) Whenever the monitoring procedures of this subpart cannot be followed to measure CO₂ concentration, the following missing data procedures must be followed:

(1) Another calculation methodology listed in §98.474(a)(3) must be used if possible.

(2) If another method listed in §98.474(a)(3) cannot be used, a quarterly concentration value that is missing must be estimated using a representative concentration value from the nearest previous time period.

§ 98.476 Data reporting requirements.

If you are subject to this part and report under this subpart, you are not required to report the information in §98.3(c)(4) for this subpart. In addition to the information required by §98.3(c)(1) through §98.3(c)(3) and by §98.3(c)(5) through §98.3(c)(9), you must report the information listed in this section.

(a) If you receive CO₂ by pipeline, report the following for each receiving flow meter:

(1) The total net mass of CO₂ received (metric tons) annually.

(2) If a volumetric flow meter is used to receive CO₂:

(i) The volumetric flow through a receiving flow meter at standard conditions (in standard cubic meters) in each quarter.

(ii) The volumetric flow through a receiving flow meter that is redelivered to another facility without being injected into your well (in standard cubic meters) in each quarter.

(iii) The CO₂ concentration in the flow (volume percent CO₂ expressed as a decimal fraction) in each quarter.

(3) If a mass flow meter is used to receive CO₂:

(i) The mass flow through a receiving flow meter (in metric tons) in each quarter.

(ii) The mass flow through a receiving flow meter that is redelivered to another facility without being injected into your well (in metric tons) in each quarter.

(iii) The CO₂ concentration in the flow (weight percent CO₂ expressed as a decimal fraction) in each quarter.

(4) The standard or method used to calculate each value in paragraphs (a)(2) through (a)(3) of this section.

(5) The number of times in the reporting year for which substitute data procedures were used to calculate values reported in paragraphs (a)(2) through (a)(3) of this section.

(6) Whether the flow meter is mass or volumetric.

(b) If you receive CO₂ in containers, report:

(1) The mass (in metric tons) or volume at standard conditions (in standard cubic meters) of contents in containers in each quarter.

(2) The concentration of CO₂ of contents in containers (volume or weight percent CO₂ expressed as a decimal fraction) in each quarter.

(3) The mass (in metric tons) or volume (in standard cubic meters) of contents in containers that is redelivered
to another facility without being injected into your well in each quarter.

(4) The net total mass of CO$_2$ received (in metric tons) annually.

(5) The standard or method used to calculate each value in paragraphs (b)(1) and (b)(2) of this section.

(6) The number of times in the reporting year for which substitute data procedures were used to calculate values reported in paragraphs (b)(1) and (b)(2) of this section.

(c) If you use more than one receiving flow meter, report the net total mass of CO$_2$ received (metric tons) through all flow meters annually.

(d) The source of the CO$_2$ received according to the following categories:

(1) CO$_2$ production wells.
(2) Electric generating unit.
(3) Ethanol plant.
(4) Pulp and paper mill.
(5) Natural gas processing.
(6) Gasification operations.
(7) Other anthropogenic source.
(8) Discontinued enhanced oil and gas recovery project.
(9) Unknown.

§ 98.477 Records that must be retained.

(a) You must follow the record retention requirements specified by §98.3(g). In addition to the records required by §98.3(g), you must retain quarterly records of CO$_2$ received, including mass flow rate or contents of containers (mass or volumetric) at standard conditions and operating conditions, operating temperature and pressure, and concentration of these streams. You must retain all required records for at least 3 years.

(b) You must complete your monitoring plans, as described in §98.3(g)(5), by April 1 of the year you begin collecting data.

§ 98.478 Definitions.

Except as provided below, all terms used in this subpart have the same meaning given in the Clean Air Act and subpart A of this part.

CO$_2$ received means the CO$_2$ stream that you receive to be injected for the first time into a well on your facility that is covered by this subpart. CO$_2$ received includes, but is not limited to, a CO$_2$ stream from a production process unit inside your facility and a CO$_2$ stream that was injected into a well on another facility, removed from a discontinued enhanced oil or natural gas or other production well, and transferred to your facility.

PART 99 [RESERVED]