

PART 74—MATERIAL CONTROL AND ACCOUNTING OF SPECIAL NUCLEAR MATERIAL

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Subpart A—General Provisions

§ 74.1 Purpose.

(a) This part has been established to contain the requirements for the control and accounting of special nuclear material at fixed sites and for documenting the transfer of special nuclear materials. General reporting requirements as well as specific requirements for certain licensees possessing special nuclear material of low strategic significance and formula quantities of strategic special nuclear material are included. Requirements for the control and accounting of source material at enrichment facilities are also included. The specific control and accounting requirements for other licensees are contained in §§ 70.51, 70.57, and 70.58 of this chapter.

(b) The general conditions and procedures for the submittal of a license application for the activities covered in this part are detailed in § 70.22 of this chapter.

[50 FR 7579, Feb. 25, 1985, as amended at 56 FR 55998, Oct. 31, 1991]

§ 74.2 Scope.

(a) The general requirements of this part apply to each person licensed pursuant to part 70 or 72 of this chapter, who possesses special nuclear material in a quantity greater than 350 grams of contained uranium-235, uranium-233, or plutonium, or any combination thereof; or who transfers or receives a quantity of special nuclear material of 1 gram or more of contained uranium-235, uranium-233, or plutonium.

(b) In addition, specific control and accounting requirements are included for certain licensees who:

- (1) possess and use formula quantities of strategic special nuclear material,
- (2) possess and use special nuclear material of low strategic significance, or
- (3) possess uranium source material and equipment capable of producing enriched uranium.

(c) Specific control and accounting requirements for special nuclear material of moderate strategic significance

and for miscellaneous categories of licensees who possess special nuclear material are contained in §§ 70.51, 70.57, and 70.58 of this chapter.

(d) As provided in part 76 of this chapter, the regulations of this part establish procedures and criteria for material control and accounting for the issuance of a certificate of compliance or the approval of a compliance plan.

[50 FR 7579, Feb. 25, 1985, as amended at 56 FR 55998, Oct. 31, 1991; 59 FR 48960, Sept. 23, 1994]

§ 74.4 Definitions.

As used in this part:

Abrupt loss means a loss occurring in the time interval between consecutive sequential performances of a material control test which is designed to detect anomalies potentially indicative of a loss of strategic special nuclear material from a specific unit of SSNM (i.e., a quantity characterized by a unique measurement) introduced into a process.

Accessible location means a process location at which SSNM could be acquired without leaving evidence of the acquisition, i.e., without tools or other equipment to obviously violate the integrity of the containment.

Act means the Atomic Energy Act of 1954 (68 Stat. 919), including any amendments thereto.

Active inventory means the sum of additions to inventory, beginning inventory, ending inventory, and removals from inventory, after all common terms have been excluded. Common terms are any material values which appear in the active inventory calculation more than once and come from the same measurement.

Additions to material in process means: (1) Receipts that are opened, except for receipts opened only for sampling and subsequently maintained under tamper-safing; (2) opened sealed sources; and (3) material removed from process for nonconformance with chemical or physical specifications that is subsequently reprocessed, measured for contained SSNM, and reintroduced to process.

Alarm Threshold means a predetermined quantity of SSNM calculated from the specified probability of detection for a given loss and the standard

deviation associated with a material control test. An alarm threshold serves to trigger a response action.

Batch means a portion of source material or special nuclear material handled as a unit for accounting purposes at a key measurement point and for which the composition and quantity are defined by a single set of measurements. The source material or special nuclear material may be in bulk form or contained in a number of separate items.

Bias means the deviation of the expected value of a random variable from the corresponding correct or assigned value.

Calibration means the process of determining the numerical relationship between the observed output of a measurement system and the value, based upon reference standards, of the characteristic being measured.

Category IA material means SSNM directly useable in the manufacture of a nuclear explosive device, except if:

(1) The dimensions are large enough (at least two meters in one dimension, greater than one meter in each of two dimensions, or greater than 25cm in each of three dimensions) to preclude hiding the item on an individual;

(2) The total weight of five formula kilograms of SSNM plus its matrix (at least 50 kilograms) cannot be carried inconspicuously by one person; or

(3) The quantity of SSNM (less than 0.05 formula kilograms) in each container requires protracted diversions in order to accumulate five formula kilograms.

Category IB material means all SSNM material other than Category IA.

Commission means the Nuclear Regulatory Commission or its duly authorized representatives.

Continuous process means a unit process in which feed material must be introduced in a systematic manner in order to maintain equilibrium conditions.

Controlled access area means any temporarily or permanently established area which is clearly demarcated, access to which is controlled, and which affords isolation of the material or persons within it.

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DOE means the U.S. Department of Energy or its duly authorized representatives.

Effective kilograms of special nuclear material means:

(1) For plutonium and uranium-233 their weight in kilograms;

(2) For uranium with an enrichment in the isotope U^{235} of 0.01 (1 percent) and above, its element weight in kilograms multiplied by the square of its enrichment expressed as a decimal weight fraction; and

(3) For uranium with an enrichment in the isotope U^{235} below 0.01 (1 percent), its element weight in kilograms multiplied by 0.0001.

Element means uranium or plutonium.

Estimate means a specific numerical value arrived at by the application of an estimator.

Estimator means a function of a sample measurement used to estimate a population parameter.

Fissile isotope means: (1) Uranium U-233, or (2) uranium-235 by enrichment category, (3) plutonium-239, and (4) plutonium-241.

Formula kilogram means SSNM in any combination in a quantity of 1000 grams computed by the formula, grams=(grams contained U-235) + 2.5 (grams U-233 + grams plutonium).

Formula quantity means strategic special nuclear material in any combination in a quantity of 5,000 grams or more computed by the formula, grams=(grams contained U^{235})+2.5 (grams U^{233} +grams plutonium).

Government agency means any executive department, commission, independent establishment, corporation, wholly or partly owned by the United States of America, which is an instrumentality of the United States, or any board, bureau, division, service, office, officer, authority, administration, or other establishment in the executive branch of the Government.

High enriched uranium means uranium enriched to 20 percent or greater in the isotope uranium-235.

Inventory difference (ID) means the quantity obtained by subtracting ending inventory (EI) and removals (R) from beginning inventory (BI) and additions to inventory (A). Mathematically,

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$$ID=BI+A-EI-R$$

ID is sometimes also referred to as *material unaccounted for* (MUF) in this chapter.

Item means any discrete quantity or container of special nuclear material or source material, not undergoing processing, having a unique identity and also having an assigned element and isotope quantity.

License, except where otherwise specified, means a license issued pursuant to part 70 of this chapter.

Low enriched uranium means uranium enriched below 20 percent in the isotope uranium-235.

Material means special nuclear material.

Material access area means any location which contains special nuclear material, within a vault or a building, the roof, walls, and floor of which constitute a physical barrier.

Material balance means the determination of an inventory difference (ID).

MC&A alarm means a situation in which there is: (1) an out-of-location item or an item whose integrity has been violated, (2) an indication of a flow of SSNM where there should be none, or (3) a difference between a measured or observed amount or property of material and its corresponding predicted or property value that exceeds a threshold established to provide the detection capability required by § 74.53.

Material control test means a comparison of a pre-established alarm threshold with the results of a process difference or process yield performed on a unit process.

Material in process means any special nuclear material possessed by the licensee except in unopened receipts, sealed sources, measured waste discards, and ultimate product maintained under tamper-safing.

Measurement includes sampling and means the determination of mass, volume, quantity, composition or other property of a material where such determinations are used for special nuclear material control and accounting purposes.

Measurement system means all of the apparatus, equipment, instruments and

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procedures used in performing a measurement.

Person means:

(1) Any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, Government agency other than the Commission or the Department of Energy, except that the Department of Energy shall be considered a person within the meaning of the regulations in this part to the extent that its facilities and activities are subject to the licensing and related regulatory authority of the Commission pursuant to section 202 of the Energy Reorganization Act of 1974 (88 Stat. 1244), any state or any political subdivision of or any political entity within a state, any foreign government or nation or political subdivision of any such government or nation, or other entity; and

(2) Any legal successor, representative, agent, or agency of the foregoing.

Physical inventory means determination on a measured basis of the quantity of special nuclear material on hand at a given time. The methods of physical inventory and associated measurements will vary depending on the material to be inventoried and the process involved.

Power of detection means the probability that the critical value of a statistical test will be exceeded when there is an actual loss of a specific SSNM quantity.

Process difference (PD) means the determination of an ID on a unit process level with the additional qualification that difficult to measure components may be modeled.

Process yield means the quantity of SSNM actually removed from a unit process compared with the quantity predicted (based on a measured input) to be available for removal. Process yield differs from a process difference in that holdup and sidestreams are not measured or modeled.

Produce when used in relation to special nuclear material, means: (1) To manufacture, make, produce, or refine special nuclear material; (2) to separate special nuclear material from other substances in which such material may be contained; or (3) to make or to produce new special nuclear material.

Random error means the deviation of a random variable from its expected value.

Receipt means special nuclear material received by a licensee from an off-site source.

Reference standard means a material, device, or instrument whose assigned value is known relative to national standards or nationally accepted measurement systems. This is also commonly referred to as a traceable standard.

Removals means measured quantities of special nuclear material disposed of as discards, encapsulated as a sealed source, or in ultimate product placed under tamper-safing or shipped offsite.

Research and development means: (1) Theoretical analysis, exploration, or experimentation; or (2) the extension of investigative findings and theories of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, devices, equipment, materials, and processes.

Scrap means the various forms of special nuclear material generated during chemical and mechanical processing, other than recycle material and normal process intermediates, which are unsuitable for continued processing, but all or part of which will be converted to useable material by appropriate recovery operations.

Sealed source means any special nuclear material that is physically encased in a capsule, rod, element, etc. that prevents the leakage or escape of the special nuclear material and that prevents removal of the special nuclear material without penetration of the casing.

Source material means source material as defined in section 11z. of the Act and in the regulations contained in part 40 of this chapter.

Special nuclear material means:

(1) Plutonium, uranium-233, uranium enriched in the isotope U²³³ or in the isotope U²³⁵, and any other material which the Commission, pursuant to the provisions of section 51 of the Atomic Energy Act of 1954, as amended, determines to be special nuclear material, but does not include source material; or

(2) Any material artificially enriched by any of the foregoing, but does not include source material.

Special nuclear material of low strategic significance means:

(1) Less than an amount of special nuclear material of moderate strategic significance, but more than 15 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U^{235} isotope) or 15 grams of uranium-233 or 15 grams of plutonium or the combination of 15 grams when computed by the equation, $\text{grams} = \text{grams } U^{235} + \text{grams plutonium} + \text{grams } U^{233}$; or

(2) Less than 10,000 grams but more than 1,000 grams of uranium-235 (contained in uranium enriched to 10 percent or more, but less than 20 percent in the U^{235} isotope); or

(3) 10,000 grams or more of uranium-235 contained in uranium enriched above natural, but less than 10 percent in the U^{235} isotope.

Special nuclear material of moderate strategic significance means:

(1) Less than a formula quantity of strategic special nuclear material but more than 1,000 grams of uranium-235 (contained in uranium enriched to 20 percent or more in the U^{235} isotope) or more than 500 grams of uranium-233 or plutonium or in a combined quantity of more than 1,000 grams when computed by the equation, $\text{grams} = (\text{grams contained } U^{235}) + 2 (\text{grams } U^{233} + \text{grams plutonium})$; or

(2) 10,000 grams or more of uranium-235 (contained in uranium enriched to 10 percent or more but less than 20 percent in the U^{235} isotope).

Standard Error of the Inventory Difference (SEID) means the standard deviation of an inventory difference that takes into account all measurement error contributions to the components of the ID.

Standard Error of the Process Difference means the standard deviation of a process difference value that takes into account both measurement and nonmeasurement contributions to the components of PD.

Strategic special nuclear material means uranium-235 (contained in uranium enriched to 20 percent or more in the U^{235} isotope), uranium-233, or plutonium.

Tamper-safing means the use of devices on containers or vaults in a manner and at a time that ensures a clear indication of any violation of the integrity of previously made measurements of special nuclear material within the container or vault.

Traceability means the ability to relate individual measurement results to national standards or nationally accepted measurement systems through an unbroken chain of comparisons.

Ultimate product means any special nuclear material in the form of a product that would not be further processed at that licensed location.

Unit process means an identifiable segment or segments of processing activities for which the amounts of input and output SSNM are based on measurements.

Unopened receipts means receipts not opened by the licensee, including receipts of sealed sources, and receipts opened only for sampling and subsequently maintained under tamper-safing.

Vault means a windowless enclosure with walls, floor, roof and door(s) designed and constructed to delay penetration from forced entry.

[50 FR 7579, Feb. 25, 1985, as amended at 52 FR 10039, Mar. 30, 1987; 56 FR 55998, Oct. 31, 1991]

§ 74.5 Interpretations.

Except as specifically authorized by the Commission in writing, no interpretations of the meaning of the regulations in this part by any officer or employee of the Commission other than a written interpretation by the General Counsel will be recognized as binding on the Commission.

§ 74.6 Communications.

Any communication or report concerning the regulations in this part and any application filed under these regulations may be submitted to the Commission as follows:

(a) By mail addressed to—Director of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

(b) By delivery in person to the Commission offices at—

(1) 2120 L Street NW, Washington, DC; or

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(2) 11555 Rockville Pike, One White Flint North, Rockville, MD.

[50 FR 7579, Feb. 25, 1985, as amended at 53 FR 4112, Feb. 12, 1988; 53 FR 43422, Oct. 27, 1988]

§ 74.7 Specific exemptions.

The Commission may, upon application of any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security, and are otherwise in the public interest.

§ 74.8 Information collection requirements: OMB approval.

(a) The Commission has submitted the information collection requirements contained in this part to the Office of Management and Budget (OMB) for approval as required by the Paperwork Reduction Act (44 U.S.C. 3501 et seq.). The NRC may not conduct or sponsor, and a person is not required to respond to, a collection of information if it does not display a currently valid OMB control number. OMB has approved the information collection requirements contained in this part under control number 3150-0123.

(b) The approved information collection requirements contained in this part appear in §§ 74.11, 74.13, 74.15, 74.17, 74.31, 74.33, 74.51, 74.57, and 74.59.

(c) This part contains information collection requirements in addition to those approved under the control number specified in paragraph (a) of this section. These information collection requirements and the control numbers under which they are approved are as follows:

(1) In § 74.15, DOE/NRC Form-741 is approved under Control No. 3150-0003.

(2) In § 74.13, DOE/NRC Form-742 is approved under Control No. 3150-0004.

(3) In § 74.13, DOE/NRC Form-742C is approved under Control No. 3150-0058.

(4) In § 74.17, NRC Form 327 is approved under Control No. 3150-0139.

[50 FR 7579, Feb. 25, 1985, as amended at 52 FR 10040, Mar. 30, 1987; 52 FR 19305, May 22, 1987; 56 FR 55998, Oct. 31, 1991; 62 FR 52189, Oct. 6, 1997]

Subpart B—General Reporting

§ 74.11 Reports of loss or theft or attempted theft or unauthorized production of special nuclear material.

(a) Each licensee who possesses one gram or more of contained uranium-235, uranium-233, or plutonium shall notify the NRC Operations Center within 1 hour of discovery of any loss or theft or other unlawful diversion of special nuclear material which the licensee is licensed to possess, or any incident in which an attempt has been made to commit a theft or unlawful diversion of special nuclear material. The requirement to report within 1 hour of discovery does not pertain to measured quantities of special nuclear material disposed of as discards or inventory difference quantities. Each licensee who operates an uranium enrichment facility shall notify the NRC Operations Center within 1 hour of discovery of any unauthorized production of enriched uranium. For centrifuge enrichment facilities the requirement to report enrichment levels greater than that authorized by license within 1 hour does not apply to each cascade during its start-up process, not to exceed the first 24 hours.

(b) This notification must be made to the NRC Operations Center via the Emergency Notification System if the licensee is party to that system. If the Emergency Notification System is inoperative or unavailable, the licensee shall make the required notification via commercial telephonic service or other dedicated telephonic system or any other method that will ensure that a report is received by the NRC Operations Center within one hour. The exemption of § 73.21(g)(3) applies to all telephonic reports required by this section.

(c) Reports required under § 73.71 need not be duplicated under requirements of this section.

[52 FR 21659, June 9, 1987; 52 FR 23257, June 18, 1987, as amended at 56 FR 55998, Oct. 31, 1991]

§ 74.13 Material status reports.

(a)(1) Each licensee authorized to possess at any one time and location special nuclear material in a quantity

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totaling more than 350 grams of contained uranium-235, uranium-233, or plutonium, or any combination thereof, shall complete and submit in computer-readable format material balance reports concerning special nuclear material received, produced, possessed, transferred, consumed, disposed of, or lost by it. These prescribed computer-readable reports replace the DOE/NRC Form 742 which has been previously submitted in paper form. Each nuclear reactor licensee, as defined in §§ 50.21 and 50.22 of this chapter, also shall prepare in computer-readable format a statement of the composition of the ending inventory. The inventory composition report must be submitted with each material balance report. This prescribed computer-readable report replaces the DOE/NRC Form 742C which has been previously submitted in paper form. Each licensee shall prepare and submit the reports described in this paragraph in accordance with instructions (NUREG/BR-0007 and NMMSS Report D-24 "Personal Computer Data Input for NRC Licensees"). Copies of these instructions may be obtained from the U.S. Nuclear Regulatory Commission, Division of Fuel Cycle Safety and Safeguards, Washington, DC 20555-0001. Each licensee shall compile a report as of March 31 and September 30 of each year and file it within 30 days after the end of the period covered by the report. The Commission may permit a licensee to submit the reports at other times when good cause is shown.

(2) Any licensee who is required to submit routine material status reports pursuant to § 75.35 of this chapter (pertaining to implementation of the US/IAEA Safeguards Agreement) shall prepare and submit such reports only as provided in that section (instead of as provided in paragraph (a)(1) of this section).

(b) Each licensee subject to the requirements of § 70.51(e) of this chapter shall submit a report, in accordance with paragraph (b)(1) or (b)(2) of this section, to the Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555 within 30 calendar days after the start of each ending physical inventory required by § 70.51(e)(3) of this chapter.

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(1) If the inventory difference exceeded both

(i) Twice the standard error of the estimated measurement uncertainty associated with the inventory difference, and

(ii) 200 grams of plutonium or U^{233,300} grams of high enriched uranium or uranium-235 contained in high enriched uranium, or 9000 grams of uranium-235 contained in low enriched uranium, a statement of the probable reasons for the excessive inventory difference and corrective actions taken or planned; and

(2) If for any material twice the standard error of the estimated measurement uncertainty associated with the inventory difference exceeds any applicable limits specified in § 70.51(e)(5) or approved pursuant to § 70.51(e)(6) of this chapter, a statement of the probable reasons for the excessive standard error and the actions taken or planned with respect to controlling the standard error within applicable limits.

[50 FR 7579, Feb. 25, 1985, as amended at 51 FR 9766, Mar. 21, 1986; 52 FR 31613, Aug. 21, 1987; 54 FR 6877, Feb. 15, 1989; 55 FR 5979, Feb. 21, 1990; 59 FR 35621, July 13, 1994]

§ 74.15 Nuclear material transfer reports.

(a) Each licensee who transfers and each licensee who receives special nuclear material shall complete in computer-readable format a Nuclear Material Transaction Report. This should be done in accordance with instructions whenever the licensee transfers or receives a quantity of special nuclear material of 1 gram or more of contained uranium-235, uranium-233, or plutonium. Copies of these instructions (NUREG/BR-0006 and NMMSS Report D-24 "Personal Computer Data Input for NRC Licensees") may be obtained from the U.S. Nuclear Regulatory Commission, Division of Fuel Cycle Safety and Safeguards, Washington, DC 20555-0001. This prescribed computer-readable format replaces the DOE/NRC Form 741 which has been previously submitted in paper form.

(b) Each licensee who receives 1 gram or more of contained uranium-235, uranium-233, or plutonium from a foreign source shall:

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(1) Complete in computer-readable format both the supplier's and receiver's portion of the Nuclear Material Transaction Report;

(2) Perform independent tests to assure the accurate identification and measurement of the material received, including its weight and enrichment; and

(3) Indicate the results of these tests on the receiver's portion of the form.

(c) Any licensee who is required to submit inventory change reports pursuant to § 75.34 of this chapter (pertaining to implementation of the US/International Atomic Energy Agency (IAEA) Safeguards Agreement) shall prepare and submit these reports only as provided in that section (instead of as provided in paragraphs (a) and (b) of this section).

[59 FR 35621, July 13, 1994]

§ 74.17 Special nuclear material physical inventory summary report.

(a) Each licensee subject to the requirements of § 74.31 or § 74.33 shall submit a completed Special Nuclear Material Physical Inventory Summary Report on NRC Form 327 not later than 60 calendar days from the start of the physical inventory required by § 74.31(c)(5) or § 74.33(c)(4) of this chapter. The licensee shall report the inventory results by plant and total facility to the Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

(b) Each licensee subject to the requirements of § 70.51(e) of this chapter shall submit a completed Special Nuclear Material Physical Inventory Summary Report on NRC Form 327 not later than 30 calendar days from the start of the physical inventory required by § 70.51(e)(3) of this chapter. The licensee shall report the inventory results by plant and total facility to the Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

(c) Each licensee subject to the requirements of § 74.51 shall submit a completed Special Nuclear Material Physical Inventory Summary Report on NRC Form 327 not later than 45 calendar days from the start of the phys-

ical inventory required by § 74.59(f). The licensee shall report the inventory results by plants and total facility to the appropriate NRC regional office listed in appendix A of part 73 of this chapter.

[52 FR 19305, May 22, 1987, as amended at 54 FR 6877, Feb. 15, 1989; 55 FR 5979, Feb. 21, 1990; 56 FR 55998, Oct. 31, 1991]

Subpart C—Special Nuclear Material of Low Strategic Significance

§ 74.31 Nuclear material control and accounting for special nuclear material of low strategic significance.

(a) *General performance objectives.* Each licensee who is authorized to possess and use more than one effective kilogram of special nuclear material of low strategic significance, excluding sealed sources, at any site or contiguous sites subject to control by the licensee, other than a production or utilization facility licensed pursuant to part 50 or 70 of this chapter, or operations involved in waste disposal, shall implement and maintain a Commission approved material control and accounting system that will achieve the following objectives:

- (1) Confirm the presence of special nuclear material;
- (2) Resolve indications of missing material; and
- (3) Aid in the investigation and recovery of missing material.

(b) *Implementation dates.* Each licensee subject to the requirements of paragraph (a) of this section shall:

(1) No later than August 26, 1985, submit a fundamental nuclear material control plan describing how the requirements of paragraph (c) of this section will be met; and

(2) No later than December 23, 1985, or 60 days after the plan submitted pursuant to paragraph (b)(1) of this section is approved, whichever is later, implement the approved plan.

(c) *System capabilities.* To meet the general performance objectives of paragraph (a) of this section, the material control and accounting system must include the capabilities described in paragraph (c) (1) through (8) of this section. The licensee shall:

- (1) Establish, document, and maintain a management structure which

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assures clear overall responsibility for material control and accounting functions, independence from production responsibilities, separation of key responsibilities, and adequate review and use of critical material control and accounting procedures;

(2) Establish and maintain a measurement system which assures that all quantities in the material accounting records are based on measured values;

(3) Follow a measurement control program which assures that measurement bias is estimated and significant biases are eliminated from inventory difference values of record;

(4) In each inventory period, control total material control and accounting measurement uncertainty so that twice its standard error is less than the greater of 9 kilograms of U²³⁵ or 0.25 percent of the active inventory, and assure that any measurement performed under contract is controlled so that the licensee can satisfy this requirement;

(5) Unless otherwise required to satisfy part 75 of this chapter, perform a physical inventory at least every 12 months and, within 60 days after the start of the inventory, reconcile and adjust the book inventory to the results of the physical inventory, and resolve, or report an inability to resolve, any inventory difference which is rejected by a statistical test which has a 90 percent power of detecting a discrepancy of a quantity of uranium-235 established by NRC on a site-specific basis;

(6) Maintain current knowledge of items when the sum of the time of existence of an item, the time to make a record of the item, and the time necessary to locate the item exceeds 14 days. Store and handle, or subsequently measure, items in a manner so that unauthorized removals of substantial quantities of material from items will be detected. Exempted are items individually containing less than 500 grams of U²³⁵ up to a total of 50 kilograms of U²³⁵, solutions with a concentration of less than 5 grams of U²³⁵ per liter, and items of waste destined for burial or incineration;

(7) Resolve, on a shipment basis and when required to satisfy part 75 of this chapter, on a batch basis, shipper/receiver differences that exceed both

twice the combined measurement standard error for that shipment and 500 grams of U²³⁵; and

(8) Independently assess the effectiveness of the material control and accounting system at least every 24 months, and document management's action on prior assessment recommendations.

(d) *Recordkeeping.* (1) Each licensee shall establish records that will demonstrate that the requirements of paragraph (c) of this section have been met and maintain these records for at least 3 years, unless a longer retention time is required by part 75 of this chapter.

(2) Records which must be maintained pursuant to this part may be the original or a reproduced copy or a microform if such reproduced copy or microform is duly authenticated by authorized personnel and the microform is capable of producing a clear and legible copy after storage for the period specified by Commission regulations. The record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records such as letters, drawings, specifications, must include all pertinent information such as stamps, initials, and signatures.

The licensee shall maintain adequate safeguards against tampering with and loss of records.

[50 FR 7579, Feb. 25, 1985, as amended at 53 FR 19262, May 27, 1988; 56 FR 55998, Oct. 31, 1991]

§ 74.33 Nuclear material control and accounting for uranium enrichment facilities authorized to produce special nuclear material of low strategic significance.

(a) *General performance objectives.* Each licensee who is authorized by this chapter to possess equipment capable of enriching uranium or operate an enrichment facility, and produce, possess, or use more than one effective kilogram of special nuclear material of low strategic significance at any site or contiguous sites, subject to control by the licensee, shall establish, implement, and maintain a NRC-approved material control and accounting system that will achieve the following objectives:

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(1) Maintain accurate, current, and reliable information of and periodically confirm the quantities and locations of source material and special nuclear material in the licensee's possession;

(2) Protect against and detect production of uranium enriched to 10 percent or more in the isotope U^{235} ;

(3) Protect against and detect unauthorized production of uranium of low strategic significance;

(4) Resolve indications of missing uranium;

(5) Resolve indications of production of uranium enriched to 10 percent or more in the isotope U^{235} (for centrifuge enrichment facilities this requirement does not apply to each cascade during its start-up process, not to exceed the first 24 hours);

(6) Resolve indications of unauthorized production of uranium of low strategic significance;

(7) Provide information to aid in the investigation of missing uranium;

(8) Provide information to aid in the investigation of the production of uranium enriched to 10 percent or more in the isotope U^{235} ; and

(9) Provide information to aid in the investigation of unauthorized production of uranium of low strategic significance.

(b) *Implementation dates.* Each applicant for a license who would, upon issuance of a license pursuant to any part of this chapter, be subject to the requirements of paragraph (a) of this section shall:

(1) Submit a fundamental nuclear material control plan describing how the performance objectives of § 74.33(a), the system features and capabilities of § 74.33(c), and the recordkeeping requirements of § 74.33(d) will be met; and

(2) Implement the NRC approved plan submitted pursuant to paragraph (b)(1) of this section prior to:

(i) The cumulative receipt of 5,000 grams of U^{235} contained in any combination of natural, depleted, or enriched uranium or

(ii) NRC's issuance of a license to test or operate the enrichment facility; whichever occurs first.

(c) *System features and capabilities.* To meet the general performance objectives of paragraph (a) of this section, the Material Control and Accounting

(MC&A) system must include the features and capabilities described in paragraphs (c) (1) through (8) of this section. The licensee shall establish, document, and maintain:

(1) A management structure that ensures:

(i) Clear overall responsibility for MC&A functions;

(ii) Independence of MC&A management from production responsibilities;

(iii) Separation of key MC&A responsibilities from each other; and

(iv) Use of approved written MC&A procedures and periodic review of those procedures;

(2) A measurement program that ensures that all quantities of source material and special nuclear material in the accounting records are based on measured values;

(3) A measurement control program that ensures that:

(i) Measurement bias is estimated and minimized through the measurement control program, and any significant biases are eliminated from inventory difference values of record;

(ii) All MC&A measurement systems are controlled so that twice the standard error of the inventory difference, based on all measurement error contributions, is less than the greater of 5,000 grams of U^{235} or 0.25 percent of the U^{235} of the active inventory for each total plant material balance; and

(iii) Any measurements performed under contract are controlled so that the licensee can satisfy the requirements of paragraphs (c)(3) (i) and (ii) of this section;

(4) A physical inventory program that provides for:

(i) Performing, unless otherwise required to satisfy part 75 of this chapter, a dynamic (nonshutdown) physical inventory of in-process (e.g., in the enrichment equipment) uranium and U^{235} at least every 65 days, and performing a static physical inventory of all other uranium and total U^{235} contained in natural, depleted, and enriched uranium located outside of the enrichment processing equipment at least every 370 calendar days, with static physical inventories being conducted in conjunction with a dynamic physical inventory of in-process uranium and U^{235} so as to

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provide a total plant material balance at least every 370 calendar days; and

(ii) Reconciling and adjusting the book inventory to the results of the static physical inventory and resolving, or reporting an inability to resolve, any inventory difference that is rejected by a statistical test which has a 90 percent power of detecting a discrepancy of a quantity of U²³⁵, established by NRC on a site-specific basis, within 60 days after the start of each static physical inventory;

(5) A detection program, independent of production, that provides high assurance of detecting:

(i) Production of uranium enriched to 10 percent or more in the U²³⁵ isotope, to the extent that SNM of moderate strategic significance could be produced within any 370 calendar day period;

(ii) Production of uranium enriched to 20 percent or more in the U²³⁵ isotope; and

(iii) Unauthorized production of uranium of low strategic significance;

(6) An item control program that ensures that:

(i) Current knowledge is maintained of items with respect to identity, uranium and U²³⁵ content, and stored location; and

(ii) Items are stored and handled, or subsequently measured, in a manner so that unauthorized removal of 500 grams or more of U²³⁵, as individual items or as uranium contained in items, will be detected. Exempted from the requirements of paragraph (c)(6) (i) and (ii) of this section are licensed-identified items each containing less than 500 grams U²³⁵ up to a cumulative total of 50 kilograms of U²³⁵ and items that exist for less than 14 calendar days;

(7) A resolution program that ensures that any shipper-receiver differences are resolved that are statistically significant and exceed 500 grams U²³⁵ on:

(i) An individual batch basis; and

(ii) A total shipment basis for all source material and special nuclear material;

(8) An assessment program that:

(i) Independently assesses the effectiveness of the MC&A system at least every 24 months;

(ii) Documents the results of the above assessment;

(iii) Documents management's findings on whether the MC&A system is currently effective; and

(iv) Documents any actions taken on recommendations from prior assessments.

(d) *Recordkeeping.* (1) Each licensee shall establish records that will demonstrate that the performance objectives of paragraph (a) of this section and the system features and capabilities of paragraph (c) of this section have been met and maintain these records in an auditable form, available for inspection, for at least 3 years, unless a longer retention time is required by part 75 of this chapter.

(2) Records that must be maintained pursuant to this part may be the original or a reproduced copy or a microform if such reproduced copy or microform is duly authenticated by authorized personnel and the microform is capable of producing a clear and legible copy after storage for the period specified by Commission regulations. The record may also be stored in electronic media with the capability for producing, on demand, legible, accurate, and complete records during the required retention period. Records such as letters, drawings, and specifications must include all pertinent information such as stamps, initials, and signatures.

(3) The licensee shall maintain adequate safeguards against tampering with and loss of records.

[56 FR 55999, Oct. 31, 1991]

Subpart D—Special Nuclear Material of Moderate Strategic Significance [Reserved]

Subpart E—Formula Quantities of Strategic Special Nuclear Material

SOURCE: 52 FR 10040, Mar. 30, 1987, unless otherwise noted.

§ 74.51 Nuclear material control and accounting for strategic special nuclear material.

(a) *General performance objectives.* Each licensee who is authorized to possess five or more formula kilograms of strategic special nuclear material (SSNM) and to use such material at

any site, other than a nuclear reactor licensed pursuant to part 50 of this chapter, an irradiated fuel reprocessing plant, an operation involved with waste disposal, or an independent spent fuel storage facility licensed pursuant to part 72 of this chapter shall establish, implement, and maintain a Commission-approved material control and accounting (MC&A) system that will achieve the following objectives:

(1) Prompt investigation of anomalies potentially indicative of SSNM losses;

(2) Timely detection of the possible abrupt loss of five or more formula kilograms of SSNM from an individual unit process;

(3) Rapid determination of whether an actual loss of five or more formula kilograms occurred;

(4) Ongoing confirmation of the presence of SSNM in assigned locations; and

(5) Timely generation of information to aid in the recovery of SSNM in the event of an actual loss.

(b) *System capabilities.* To achieve the general performance objectives specified in § 74.51(a), the MC&A system must provide the capabilities described in §§ 74.53, 74.55, 74.57 and 74.59 and must incorporate checks and balances that are sufficient to detect falsification of data and reports that could conceal diversion by:

(1) An individual, including an employee in any position; or

(2) Collusion between an individual with MC&A responsibilities and another individual who has responsibility or control within both the physical protection and the MC&A systems.

(c) *Implementation dates.* Each licensee subject to the requirements of paragraph (a) of this section shall:

(1) No later than September 25, 1987, submit a fundamental nuclear material control (FNMC) plan describing how the licensee will comply with the requirements of paragraph (b) of this section; and

(2) No later than April 29, 1988, or 90 days after the plan submitted pursuant to paragraph (c)(1) of this section is approved, whichever is later, implement the approved plan. Current FNMC plans must be followed until new plans are approved by the NRC.

(d) *Exemptions.* (1) Notwithstanding paragraph (c)(2) of this section, a licensee may delay, for an additional 18 months beyond the prescribed 90 days, implementation of provisions of the plan involving process shutdown for resolution of alarms. However, during such delay, the licensee shall continue to conduct inventories at bimonthly intervals.

(2) Notwithstanding § 74.59(f)(1), licensees shall perform at least three bimonthly physical inventories after implementation of the NRC approved FNMC Plan and shall continue to perform bimonthly inventories until performance acceptable to the NRC has been demonstrated and the Commission has issued formal approval to perform semiannual inventories. Licensees who have prior experience with process monitoring and/or can demonstrate acceptable performance against all Plan commitments may request authorization to perform semiannual inventories at an earlier date.

[52 FR 10040, Mar. 30, 1987, as amended at 63 FR 26963, May 15, 1998]

§ 74.53 Process monitoring.

(a) Licensees subject to § 74.51 shall monitor internal transfers, storage, and processing of SSNM. The process monitoring must achieve the detection capabilities described in paragraph (b) of this section for all SSNM except:

(1) SSNM that is subject to the item loss detection requirements of § 74.55;

(2) Scrap in the form of small pieces, cuttings, chips, solutions, or in other forms that result from a manufacturing process, held in containers of 30 gallons or larger, with an SSNM content of less than 0.25 grams per liter;

(3) SSNM with an estimated measurement standard deviation greater than five percent that is either input or output material associated with a unit that processes less than five formula kilograms over a consecutive three-month period; and

(4) SSNM involved in research and development operations that process less than five formula kilograms during any seven-consecutive-day period.

(b) *Unit process detection capability.* For each unit process, a licensee shall establish a production quality control

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program capable of monitoring the status of material in process. The program shall include:

(1) A statistical test that has at least a 95 percent power of detecting an abrupt loss of five formula kilograms within three working days of a loss of Category IA material from any accessible process location and within seven calendar days of a loss of Category IB material from any accessible process location;

(2) A quality control test whereby process differences greater than three times the estimated standard deviation of the process difference estimator and 25 grams of SSNM are investigated; and

(3) A trend analysis for monitoring and evaluating sequences of material control test results from each unit process to determine if they indicate a pattern of losses or gains that are of safeguards significance.

(c) For research and development operations exempt from the requirements of paragraph (b) of this section, the licensee shall:

(1) Perform material balance tests on a lot or a batch basis, as appropriate, or monthly, whichever is sooner, and investigate any difference greater than 200 grams of plutonium or U-233 or 300 grams of U-235 that exceeds three times the estimated standard error of the inventory difference estimator;

(2) Evaluate material balance results generated during an inventory period for indications of measurement biases or unidentified loss streams and investigate, determine the cause(s) of, and institute corrective action for cumulative inventory differences generated during an inventory period that exceed three formula kilograms of SSNM.

§ 74.55 Item monitoring.

(a) Licensees subject to § 74.51 shall provide the detection capability described in paragraph (b) of this section for laboratory samples containing less than 0.05 formula kilograms of SSNM and any uniquely identified items of SSNM that have been quantitatively measured, the validity of that measurement independently confirmed, and that additionally have been either:

(1) Tamper-safed or placed in a vault or controlled access area that provides

protection at least equivalent to tamper-safing; or

(2) Sealed such that removal of SSNM would be readily and permanently apparent (e.g., encapsulated).

(b) The licensee shall verify on a statistical sampling basis, the presence and integrity of SSNM items. The statistical sampling plan must have at least 99 percent power of detecting item losses that total five formula kilograms or more, plant-wide, within:

(1) Thirty calendar days for Category IA items and 60 calendar days for Category IB items contained in a vault or in a permanently controlled access area isolated from the rest of the material access area (MAA);

(2) Three working days for Category IA items and seven calendar days for Category BI items located elsewhere in the MAA, except for reactor components measuring at least one meter in length and weighing in excess of 30 kilograms for which the time interval shall be 30 calendar days;

(3) Sixty calendar days for items in a permanently controlled access area outside of an MAA; or

(4) Sixty calendar days for samples in a vault or permanently controlled access area and 30 calendar days for samples elsewhere in the MAA for samples each containing less than 0.05 formula kilograms of SSNM.

(c) Items containing scrap in the form of small pieces, cuttings, chips, solutions, or in other forms that result from a manufacturing process, held in containers of 30 gallon or larger, with an SSNM concentration of less than 0.25 grams per liter are exempt from the requirements of paragraph (b) of this section.

§ 74.57 Alarm resolution.

(a) Licensees subject to § 74.51 shall provide the MC&A alarm resolution capabilities described in paragraphs (b) through (f) of this section.

(b) Licensees shall resolve the nature and cause of any MC&A alarm within approved time periods.

(c) Each licensee shall notify the Licensing Branch, Division of Industrial and Medical Nuclear Safety, Office of Nuclear Material Safety and Safeguards by telephone on (301) 415-7231 of

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any MC&A alarm that remains unresolved beyond the time period specified for its resolution in the licensee's fundamental nuclear material control plan. Notification must occur within 24 hours except when a holiday or weekend intervenes in which case the notification must occur on the next scheduled workday. The licensee may consider an alarm to be resolved if:

(1) Clerical or computational error is found that clearly was the cause for the alarm; or

(2) An assignable cause for the alarm is identified or it is substantiated that no material loss has occurred.

(d) If a material loss has occurred, the licensee shall determine the amount of SSNM lost and take corrective action to:

(1) Return out-of-place SSNM, if possible, to its appropriate place;

(2) Update and correct associated records; and

(3) Modify the MC&A system, if appropriate, to prevent similar future occurrences.

(e) The licensee shall provide an ability to rapidly assess the validity of alleged thefts.

(f) If an abrupt loss detection estimate exceeds five formula kilograms of SSNM:

(1) Material processing operations related to the alarm must be suspended until completion of planned alarm resolution activities, unless the suspension of operations will adversely affect the ability to resolve the alarm. Operation of continuous processes may continue for 24 hours from the time of the occurrence of the alarm during which time checks shall be made for mistakes in records or calculations that could have caused the alarm.

(2) Within 24 hours, the licensee shall notify the Licensing Branch, Division of Industrial and Medical Nuclear Safety, Office of Nuclear Material Safety and Safeguards by telephone on (301) 415-7231 that an MC&A alarm resolution procedure has been initiated.

[52 FR 10040, Mar. 30, 1987, as amended at 54 FR 6877, Feb. 15, 1989; 55 FR 5979, Feb. 21, 1990; 60 FR 24553, May 9, 1995]

§ 74.59 Quality assurance and accounting requirements.

(a) Licensees subject to § 74.51 shall provide the quality assurance and accounting capabilities described in paragraphs (b) through (h) of this section.

(b) *Management structure.* The licensee shall:

(1) Establish and maintain a management structure that includes clear overall responsibility for planning, coordinating, and administering material control and accounting functions, independence of material control and accounting functions from production responsibilities, and separation of functions such that the activities of one individual or organizational unit serve as controls over and checks of the activities of others; and

(2) Provide for the adequate review, approval, and use of those material control and accounting procedures that are identified in the approved FNMC plan as being critical to the effectiveness of the described system.

(c) *Personnel qualification and training.* The licensee shall assure that personnel who work in key positions where mistakes could degrade the effectiveness of the material control and accounting system are trained to maintain a high level of safeguards awareness and are qualified to perform their duties and/or responsibilities.

(d) *Measurements.* The licensee shall establish and maintain a system of measurements sufficient to:

(1) Substantiate the plutonium element and uranium element and fissile isotope content of all SSNM received, produced, transferred between areas of custodial responsibility, or inventory, or shipped, discarded, or otherwise removed from inventory;

(2) Enable the estimation of the standard deviation associated with each measured quantity; and

(3) Provide the data necessary for performance of the material control tests required by § 74.53(b).

(e) *Measurement control.* The licensee shall assure that the quality of SSNM measurement systems and material

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processing practices is continually controlled to a level of effectiveness sufficient to satisfy the capabilities required for detection, response, and accounting. To achieve this objective the licensee shall:

(1) Perform engineering analyses and evaluations of the design, installation, preoperational tests, calibration, and operation of all measurement systems to be used for MC&A purposes;

(2) Perform process and engineering tests using well characterized materials to establish or to verify the applicability of existing procedures for mixing and sampling SSNM and maintaining sample integrity during transport and storage. Tests must be repeated at least every three years, at any time there is a process modification that alters the physical or chemical composition of the SSNM, or whenever there is a change in the sampling technique or equipment; and

(3) Generate current data on the performance of measurement processes, including, as appropriate, values for bias corrections, uncertainties on calibration factors, and random error standard deviations. The program must include:

(i) The ongoing use of standards for calibration and control of all applicable measurement systems. Calibrations must be repeated whenever any change in a measurement system occurs which has the potential to affect a measurement result or when program data, generated by tests performed at a predetermined frequency, indicate a need for recalibration. Calibrations and tests must be based on standards with traceability to national standards or nationally accepted measurement systems; and

(ii) A system of control measurements to provide current data for the estimation of the standard deviations that are significant contributors to the measurement uncertainties associated with shipper/receiver differences, inventory differences, and process differences.

(4) Utilize the data generated during the current material balance period for the estimation of the standard error of the inventory difference (SEID) and the standard error of the process differences. Calibration and measurement

error data collected and used during immediately preceding material balance periods may be combined with current data provided that the measurement systems are in statistical control and the combined data are utilized in characterizing the unknowns.

(5) Evaluate all program data and information to assure that measurement performance is so controlled that the SEID estimator is less than 0.1 percent of active inventory.

(6) Apply bias corrections by an appropriate procedure whereby:

(i) Bias corrections are applied to individual items if for any measurement system the relative bias estimate exceeds twice the standard deviation of its estimator, the absolute bias estimate exceeds 50 grams of SSNM when applied across all affected items, and the absolute bias estimate on an individual item basis exceeds the rounding error of affected items; and

(ii) All biases (regardless of significance) that are not applied as corrections to individual items are applied as a correction to the inventory difference.

(7) Investigate and take corrective action, as appropriate, to identify and reduce associated measurement biases when, for like material types (i.e., measured by the same measurement system), the net cumulative shipper/receiver differences accumulated over a six-month period exceed the larger of one formula kilogram or 0.1 percent of the total amount received.

(8) Establish and maintain a statistical control system designed to monitor the quality of each type of program measurement. Control limits must be established to be equivalent to levels of significance of 0.05 and 0.001. Control data exceeding the 0.05 limits must be investigated and corrective action taken in a timely manner. Whenever a single data point exceeds the 0.001 control limit, the measurement system in question must not be used for material control and accounting purposes until it has been brought into control at the 0.05 level.

(f) *Physical inventory.* The licensee shall:

(1) Except as required by part 75 of this Chapter, perform a physical inventory at least every six calendar months

and within 45 days after the start of the ending inventory:

(i) Calculate the inventory difference, estimate the standard error of the inventory difference, and investigate and report any SEID estimate of 0.1 percent or more of active inventory and any ID that exceeds three times the standard error and 200 grams of plutonium or uranium-233 or 300 grams of uranium-235;

(ii) If required to perform an investigation pursuant to paragraph (f)(1)(i) of this section, evaluate the significance of the inventory difference relative to expected performance as determined from an analysis of an appropriate sequence of historical inventory differences;

(iii) Investigate and report to the Licensing Branch, Division of Industrial and Medical Nuclear Safety, Office of Nuclear Material Safety and Safeguards and difference that exceeds three times the standard deviation determined from the sequential analysis;

(iv) Perform a reinventory if directed to do so by the Commission; and

(v) Reconcile and adjust the plant and subsidiary book records to the results of the physical inventory.

(2) Implement policies, practices, and procedures designed to ensure the quality of physical inventories. These must include:

(i) Development of procedures for tamper-safing of containers or vaults containing SSNM not in process that include adequate controls to assure the validity of assigned SSNM values;

(ii) Maintenance of records of the quantities of SSNM added to and removed from process;

(iii) Requirements for signed documentation of all SSNM transfers between areas with different custodial responsibility that reflect all quantities of SSNM transferred;

(iv) Means for control of and accounting for internal transfer documents;

(v) Cutoff procedures for transfers and processing so that all quantities of SSNM are inventoried and none are inventoried more than once;

(vi) Cutoff procedures for records and reports so that all transfers for the inventory and material balance interval and no others are included in the records;

(vii) Inventory procedures for sealed sources and containers or vaults containing SSNM that assure reliable identification and quantification of contained SSNM;

(viii) Inventory procedures for in-process SSNM that provide for measurement of quantities not previously measured for element and isotope, as appropriate, and remeasurement of material previously measured but whose validity has not been assured by tamper-safing or equivalent protection; and

(ix) Written instructions for conducting physical inventories that detail assignments, responsibilities, and preparation for and performance of an inventory.

(g) *Accounting.* The licensee shall establish auditable records sufficient to demonstrate that the requirements of §§ 74.53, 74.55, 74.57, and 74.59 have been met and retain those records for at least three years unless a longer retention period is required by part 75 of this Chapter.

(h) *Internal control.* The licensee shall:

(1) Establish procedures for shipping and receiving SSNM that provide for:

(i) Accurate identification and measurement of the quantities shipped and received;

(ii) Review and evaluation of shipper/receiver differences on an individual container or lot basis, as appropriate, on a shipment basis, and on a batch basis when required by part 75 of this Chapter;

(iii) Investigation and corrective action when shipper/receiver differences exceed twice the estimated standard deviation of the difference estimator and the larger of 0.5 percent of the amount of SSNM in the container, lot, or shipment, as appropriate, or 50 grams of SSNM; and

(iv) Documentation of shipper/receiver difference evaluations, investigations, and corrective actions.

(2) Establish a scrap control program that assures that:

(i) Internally generated scrap and scrap from other licensees or contractors is segregated until accountability is established; and

(ii) Any scrap measured with a standard deviation greater than five percent

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of the measured amount is recovered so that the results are segregated by inventory period and received within six months of the end of the inventory period in which the scrap was generated except where it can be demonstrated that the scrap measurement uncertainty will not cause noncompliance with § 74.59(e)(5).

(3) Incorporate checks and balances in the MC&A system sufficient to control the rate of human errors in material control and accounting information.

(4) Perform independent assessments at least every 12 months that assess the performance of the MC&A system, review its effectiveness, and document management's action on prior assessment recommendations. Assessments must include an evaluation of the measurement control program of any outside contractor laboratory performing MC&A measurements for a licensee, unless the contractor is also subject to the requirements of § 74.59(e).

(5) Assign custodial responsibility in a manner that ensures that such responsibility can be effectively executed for all SSNM possessed under license.

[52 FR 10040, Mar. 30, 1987, as amended at 54 FR 6878, Feb. 15, 1989; 55 FR 5979, Feb. 21, 1990; 60 FR 24553, May 9, 1995]

Subpart F—Enforcement

§ 74.81 Inspections.

(a) Each licensee shall afford to the Commission at all reasonable times opportunity to inspect special nuclear material and the premises and facilities wherein special nuclear material is used, produced, or stored.

(b) Each licensee shall make available to the Commission for inspection, upon reasonable notice, records kept by the licensee pertaining to its receipt, possession, use, acquisition, import, export, or transfer of special nuclear material.

(c)(1) In the case of fuel cycle facilities where nuclear reactor fuel is fabricated or processed, each licensee shall upon request by the Director, Office of Nuclear Material Safety and Safeguards or the appropriate NRC Regional Administrator, provide rent-free office space for the exclusive use of Commission inspection personnel.

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Heat, air conditioning, light, electrical outlets, and janitorial services shall be furnished by each licensee. The office shall be convenient to and have full access to the facility, and shall provide the inspector both visual and acoustic privacy.

(2) For a site with a single fuel facility licensed pursuant to part 70 of this chapter, the space provided shall be adequate to accommodate a full-time inspector, a part-time secretary, and transient NRC personnel. It will be generally commensurate with other office facilities at the site. A space of 250 square feet either within the site's office complex or in an office trailer or other on-site space is suggested as a guide. For sites containing multiple fuel facilities, additional space may be requested to accommodate additional full-time inspector(s). The office space that is provided shall be subject to the approval of the Director, Office of Nuclear Material Safety and Safeguards or the appropriate NRC Regional Administrator. All furniture, supplies, and communication equipment will be furnished by the Commission.

(3) The licensee shall afford any NRC resident inspector assigned to their site, or other NRC inspectors identified by the Director of the Office of Nuclear Material Safety and Safeguards as likely to inspect the facility, immediate unfettered access, equivalent to access provided regular plant employees, following proper identification and compliance with applicable access control measures for security, radiological protection, and personal safety.

(d) At a facility using and possessing a formula quantity of strategic special nuclear material in unirradiated form, the licensee may not announce or otherwise communicate to its employees or site contractors the arrival or presence of an NRC safeguards inspector unless specifically requested to do so by the safeguards inspector.

[50 FR 7579, Feb. 25, 1985, as amended at 52 FR 31613, Aug. 21, 1987; 54 FR 6878, Feb. 15, 1989; 55 FR 5979, Feb. 21, 1990; 58 FR 29522, May 21, 1993]

§ 74.82 Tests.

Each licensee shall perform, or permit the Commission to perform, any

tests that the Commission deems appropriate or necessary for the administration of the regulations in this part, including tests of:

- (a) Special nuclear material;
- (b) Facilities where special nuclear material is utilized, produced, or stored; and
- (c) Other equipment and devices used in connection with the production, utilization, or storage of special nuclear material.

§ 74.83 Violations.

(a) The Commission may obtain an injunction or other court order to prevent a violation of the provisions of—

- (1) The Atomic Energy Act of 1954, as amended;
- (2) Title II of the Energy Reorganization Act of 1974, as amended; or
- (3) A regulation or order issued pursuant to those Acts.

(b) The Commission may obtain a court order for the payment of a civil penalty imposed under section 234 of the Atomic Energy Act:

- (1) For violations of—
 - (i) Sections 53, 57, 62, 63, 81, 82, 101, 103, 104, 107, or 109 of the Atomic Energy Act of 1954, as amended;
 - (ii) Section 206 of the Energy Reorganization Act;
 - (iii) Any rule, regulation, or order issued pursuant to the sections specified in paragraph (b)(1)(i) of this section;
 - (iv) Any term, condition, or limitation of any license issued under the sections specified in paragraph (b)(1)(i) of this section.

(2) For any violation for which a license may be revoked under section 186 of the Atomic Energy Act of 1954, as amended.

[57 FR 55079, Nov. 24, 1992]

§ 74.84 Criminal penalties.

(a) Section 223 of the Atomic Energy Act of 1954, as amended, provides for criminal sanctions for willful violation of, attempted violation of, or conspiracy to violate, any regulation issued under sections 161b, 161i, or 161o of the Act. For purposes of section 223, all the regulations in part 74 are issued under one or more of sections 161b, 161i, or 161o, except for the sections listed in paragraph (b) of this section.

(b) The regulations in part 74 that are not issued under sections 161b, 161i, or 161o for the purposes of section 223 are as follows: §§ 74.1, 74.2, 74.4, 74.5, 74.6, 74.7, 74.8, 74.83 and 74.84.

[57 FR 55079, Nov. 24, 1992]

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