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year restriction on offsetting past credit shortfalls as specified in the requirements of 49 CFR 535.7.

(d)(1) For passenger automobiles and light trucks, if a manufacturer within a group of manufacturers is sold or otherwise spun off so that it is no longer within that control relationship, the manufacturer may use credits that were earned by the group of manufacturers within the control relationship while the manufacturer was within that relationship, subject to the agreement of the other manufacturers, the availability of the credits, and the general three-year restriction on carrying credits forward or backward prior to or during model year 2007, or the general five-year restriction on carrying credits forward and the general three-year restriction on carrying credits backward after model year 2007.

(2) For heavy-duty vehicles and heavy-duty vehicle engines, if a manufacturer within a group of manufacturers is sold or otherwise spun off so that it is no longer within that control relationship, the manufacturer may use credits that were earned by the group of manufacturers within the control relationship while the manufacturer was within that relationship, subject to the agreement of the other manufacturers, the availability of the credits, the general 5-year restriction on carrying credits forward, and the general three year restriction on offsetting past credit shortfalls as specified in the requirements of 49 CFR 535.7.

(e) Agreements among manufacturers in a control relationship related to the allocation of credits or liabilities addressed by this section shall be filed with the agency within 60 days of the end of each model year in the same form as specified in section 534.6. The manufacturers may seek confidential treatment for information provided in the certified report in accordance with 49 CFR part 512.

[69 FR 77671, Dec. 28, 2004, as amended at 74 FR 14452, Mar. 30, 2009; 76 FR 57492, Sept. 15, 2011]

§ 534.6 Reporting corporate transactions.

Manufacturers who have entered into written contracts transferring rights and responsibilities such that a dif-

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ferent manufacturer owns the controlling stock or exerts control over the design, production or sale of automobiles or heavy-duty vehicles to which Corporate Average Fuel Economy or Fuel Consumption standards apply shall report the contract to the agency as follows:

(a) The manufacturers must file a certified report with the agency affirmatively stating that the contract transfers rights and responsibilities between them such that one manufacturer has assumed a controlling stock ownership or control over the design, production or sale of vehicles. The report must also specify the first full model year to which the transaction will apply.

(b) Each report shall—

(1) Identify each manufacturer;

(2) State the full name, title, and address of the official responsible for preparing the report;

(3) Identify the production year being reported on;

(4) Be written in the English language; and

(5) Be submitted to: Administrator, National Highway Traffic Safety Administration, 1200 New Jersey Avenue, SE., Washington, DC 20590.

(c) The manufacturers may seek confidential treatment for information provided in the certified report in accordance with 49 CFR part 512.

[76 FR 57493, Sept. 15, 2011]

§ 534.7 Situations not directly addressed by this part.

To the extent that this part does not directly address an issue concerning the rights and responsibilities of manufacturers in the context of a change in corporate relationships, the agency will make determinations based on interpretation of the statute and the principles reflected in the part.

PART 535—MEDIUM- AND HEAVY-DUTY VEHICLE FUEL EFFICIENCY PROGRAM

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AUTHORITY: 49 U.S.C. 32902; delegation of authority at 49 CFR 1.50.

SOURCE: 76 FR 57493, Sept. 15, 2011, unless otherwise noted.

§ 535.1 Scope.

This part establishes fuel consumption standards pursuant to 49 U.S.C. 32902(k) for work trucks and commercial medium-duty and heavy-duty on-highway vehicles (hereafter referenced as heavy-duty vehicles) and engines manufactured for sale in the United States and establishes a credit program manufacturers may use to comply with standards and requirements for manufacturers to provide reports to the National Highway Traffic Safety Administration regarding their efforts to reduce the fuel consumption of these vehicles.

§ 535.2 Purpose.

The purpose of this part is to reduce the fuel consumption of new heavy-duty vehicles by establishing maximum levels for fuel consumption standards while providing a flexible credit program to assist manufacturers in complying with standards.

§ 535.3 Applicability.

(a) This part applies to complete vehicle and chassis manufacturers of all new heavy-duty vehicles, as defined in 49 CFR part 523, and to the manufacturers of all heavy-duty engines manufactured for use in the applicable vehicles for each given model year.

(b) Complete vehicle manufacturers, for the purpose of this part, include manufacturers that produce heavy-duty pickup trucks and vans or truck tractors as complete vehicles and that hold the EPA certificate of conformity.

(c) Chassis manufacturers, for the purpose of this part, include manufacturers that produce incomplete vehicles constructed for use as heavy-duty pickup trucks or vans or heavy-duty vocational vehicles and that hold the EPA certificate of conformity. Some vocational vehicle manufacturers are

both chassis and complete vehicle manufacturers. These manufacturers will be regulated as chassis manufacturers under this program.

(d) Engine manufacturer, for the purpose of this part, means a manufacturer that manufactures engines for heavy-duty vehicles and holds the EPA certificate of conformity.

(e) The heavy-duty vehicles, chassis and engines excluded from the requirements of this part include:

(1) Recreational vehicles, including motor homes.

(2) Vehicles and engines exempted by EPA in accordance with 40 CFR parts 1036 and 1037.

(f) Vehicles and engines produced by small business manufacturers as defined by the Small Business Administration at 13 CFR 121.201 are exempted as specified in § 535.8(h).

(g) Heavy-duty off-road vehicles meeting the criteria in 49 CFR part 523 are exempt without request from vehicle standards of § 535.5(b). Manufacturers of vehicles not meeting the criteria for the heavy-duty off-road vehicle exclusion may submit a petition as specified in § 535.8(h) to EPA and NHTSA for an exclusion from the vehicle standards of § 535.5(b).

(h) A vehicle manufacturer that completes assembly of a vehicle at two or more facilities may ask to use as the date of manufacture for that vehicle the date on which manufacturing is completed at the place of main assembly, consistent with provisions of 49 CFR 567.4, as the model year. Note that such staged assembly is subject to the provisions of 40 CFR 1068.260(c). NHTSA's allowance of this provision is effective when EPA approves the manufacturer's certificates of conformity for these vehicles.

§ 535.4 Definitions.

The terms manufacture and manufacturer are used as defined in section 501 of the Act and the terms commercial medium-duty and heavy-duty on-highway vehicle, fuel and work truck are used as defined in 49 U.S.C. 32901.

A to B testing means testing performed in pairs to allow comparison of vehicle A to vehicle B.

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Act means the Motor Vehicle Information and Cost Savings Act, as amended by Pub. L. 94–163 and 96–425.

Administrator means the Administrator of the National Highway Traffic Safety Administration (NHTSA) or the Administrator's delegate.

Advanced technology means vehicle technology certified under 40 CFR 1036.615 and 1037.615.

Averaging set means, a set of engines or vehicles in which fuel consumption credits may be exchanged. Credits generated by one engine or vehicle family may only be used by other respective engine or vehicle families in the same averaging set. Note that an averaging set may comprise more than one regulatory subcategory. The averaging sets for this HD program are defined as follows:

(1) Heavy-duty pickup trucks and vans.

(2) Vocational light-heavy vehicles at or below 19,500 pounds GVWR.

(3) Vocational and tractor medium-heavy vehicles above 19,500 pounds GVWR but at or below 33,000 pounds GVWR.

(4) Vocational and tractor heavy-heavy vehicles above 33,000 pounds GVWR.

(5) Compression-ignition light heavy-duty engines for Class 2b to 5 vehicles with a GVWR above 8,500 pounds but at or below 19,500 pounds.

(6) Compression-ignition medium heavy-duty engines for Class 6 and 7 vehicles with a GVWR above 19,500 but at or below 33,000 pounds.

(7) Compression-ignition heavy heavy-duty engines for Class 8 vehicles with a GVWR above 33,000 pounds.

(8) Spark-ignition engines in Class 2b to 8 vehicles with a GVWR above 8,500 pounds.

Base tire for heavy-duty vehicles means the tire specified as standard equipment by a manufacturer on each subconfiguration of a model type.

Cab-complete vehicle has the meaning given in 49 CFR part 523.

Carryover means relating to certification based on emission data generated from an earlier model year.

Certificate holder means the manufacturer who holds the certificate of conformity for the vehicle or engine and that assigns the model year based on

the date when its manufacturing operations are completed relative to its annual model year period.

Certificate of Conformity means an approval document granted by the EPA to a manufacturer that submits an application for a vehicle or engine emissions family in 40 CFR 1036.205 and 1037.205. A certificate of conformity is valid from the indicated effective date until December 31 of the model year for which it is issued. The certificate must be renewed annually for any vehicle a manufacturer continues to produce.

Certification means process of obtaining a certificate of conformity for a vehicle family that complies with the emission standards and requirements in this part.

Certified emission level means the highest deteriorated emission level in an engine family for a given pollutant from the applicable transient and/or steady-state testing rounded to the same number of decimal places as the applicable standard. Note that you may have two certified emission levels for CO₂ if you certify a family for both vocational and tractor use.

Chassis-cab means the incomplete part of a vehicle that includes a frame, a completed occupant compartment and that requires only the addition of cargo-carrying, work-performing, or load-bearing components to perform its intended functions.

Chief Counsel means the NHTSA Chief Counsel, or his or her designee.

Complete sister vehicle is a complete vehicle of the same configuration as a cab-complete vehicle.

Complete vehicle has the meaning given in 49 CFR part 523.

Compression-ignition means relating to a type of reciprocating, internal-combustion engine, such as a diesel engine, that is not a spark-ignition engine.

Configuration means a subclassification within a test group which is based on engine code, transmission type and gear ratios, final drive ratio, and other parameters which the EPA designates.

Credits (or fuel consumption credits) in this part means an earned allowance recognizing the fuel consumption of a particular manufacturer's vehicles or engines within a particular averaging set exceeds (credit surplus or positive

credits) or falls below (credit shortfall, deficit or negative credits) that manufacturer's fuel consumption standard(s) for the regulatory subcategory(s) that make-up the averaging set for a given model year, or purchased allowance. The value of an earned credit is calculated according to § 535.7.

Curb weight has the meaning given in 40 CFR 86.1803.

Date of manufacture means the date on which the certifying vehicle manufacturer completes its manufacturing operations, except as follows:

(1) Where the certificate holder is an engine manufacturer that does not manufacture the chassis, the date of manufacture of the vehicle is based on the date assembly of the vehicle is completed.

(2) EPA and NHTSA may approve an alternate date of manufacture based on the date on which the certifying (or primary) vehicle manufacturer completes assembly at the place of main assembly, consistent with the provisions of 40 CFR 1037.601 and 49 CFR 567.4.

Day cab means a type of truck tractor cab that is not a "sleeper cab", as defined in this section.

Dedicated vehicle has the same meaning as dedicated automobile as defined in 49 U.S.C. 32901(a)(8). A dedicated automobile means an automobile that operates only on alternative fuels like E85 or natural gas, etc.

Dual fueled (multi-fuel or flexible-fuel vehicle) has the same meaning as dual fueled automobile as defined in 49 U.S.C. 32901(a)(9). For example, a vehicle that operates on gasoline and E85 or a plug-in hybrid electric vehicle is considered a dual fueled vehicle.

Electric vehicle means a vehicle that does not include an engine, and is powered solely by an external source of electricity and/or solar power. Note that this does not include electric hybrid or fuel-cell vehicles that use a chemical fuel such as gasoline, diesel fuel, or hydrogen. Electric vehicles may also be referred to as all-electric vehicles to distinguish them from hybrid vehicles.

Engine family has the meaning given in 40 CFR 1036.230.

Family certification level (FCL) means the family certification limit for an en-

gine family as defined in 40 CFR 1036.801.

Family emission limit (FEL) means the family emission limit for a vehicle family as defined in 40 CFR 1037.801.

Final-stage manufacturer has the meaning given in 49 CFR 567.3.

Fleet in this part means all the heavy-duty vehicles or engines within each of the regulatory sub-categories that are manufactured by a manufacturer in a particular model year and that are subject to fuel consumption standards under § 535.5.

Fleet average fuel consumption is the calculated average fuel consumption performance value for a manufacturer's fleet derived from the production weighted fuel consumption values of the unique vehicle configurations within each vehicle model type that makes up that manufacturer's vehicle fleet in a given model year. In this part, the fleet average fuel consumption value is determined for each manufacturer's fleet of heavy-duty pickup trucks and vans.

Fleet average fuel consumption standard is the actual average fuel consumption standard for a manufacturer's fleet derived from the production weighted fuel consumption standards of each unique vehicle configuration, based on payload, tow capacity and drive configuration (2, 4 or all-wheel drive), of the model types that makes up that manufacturer's vehicle fleet in a given model year. In this part, the fleet average fuel consumption standard is determined for each manufacturer's fleet of heavy-duty pickup trucks and vans.

Fuel cell means an electrochemical cell that produces electricity via the non-combustion reaction of a consumable fuel, typically hydrogen.

Fuel cell electric vehicle means a motor vehicle propelled solely by an electric motor where energy for the motor is supplied by a fuel cell.

Fuel efficiency means the amount of work performed for each gallon of fuel consumed.

Good engineering judgment has the meaning given in 40 CFR 1068.30. See 40 CFR 1068.5 for the administrative process used to evaluate good engineering judgment.

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Gross combination weight rating (GCWR) has the meaning given in 49 CFR part 523.

Gross vehicle weight rating (GVWR) has the meaning given in 49 CFR part 523.

Heavy-duty vehicle has the meaning given in 49 CFR part 523.

Hybrid engine or hybrid powertrain means an engine or powertrain that includes energy storage features other than a conventional battery system or conventional flywheel. Supplemental electrical batteries and hydraulic accumulators are examples of hybrid energy storage systems. Note that certain provisions in this part treat hybrid engines and powertrains intended for vehicles that include regenerative braking different than those intended for vehicles that do not include regenerative braking.

Hybrid vehicle means a vehicle that includes energy storage features (other than a conventional battery system or conventional flywheel) in addition to an internal combustion engine or other engine using consumable chemical fuel. Supplemental electrical batteries and hydraulic accumulators are examples of hybrid energy storage systems. Note that certain provisions in this part treat hybrid vehicles that include regenerative braking different than those that do not include regenerative braking.

Incomplete vehicle has the meaning given in 49 CFR part 523. For the purpose of this regulation, a manufacturer may request EPA and NHTSA to allow the certification of a vehicle as an incomplete vehicle if it manufactures the engine and sells the unassembled chassis components, provided it does not produce and sell the body components necessary to complete the vehicle.

Innovative technology means technology certified under 40 CFR 1037.610.

Liquefied petroleum gas (LPG) has the meaning given in 40 CFR 1036.801.

Low rolling resistance tire means a tire on a vocational vehicle with a tire rolling resistance level (TRRL) of 7.7 kg/metric ton or lower, a steer tire on a tractor with a TRRL of 7.7 kg/metric ton or lower, or a drive tire on a tractor with a TRRL of 8.1 kg/metric ton or lower.

Model type has the meaning given in 40 CFR 600.002.

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Model year as it applies to engines means the manufacturer's annual new model production period, except as restricted under this definition. It must include January 1 of the calendar year for which the model year is named, may not begin before January 2 of the previous calendar year, and it must end by December 31 of the named calendar year. Manufacturers may not adjust model years to circumvent or delay compliance with standards.

Model year as it applies to vehicles means the manufacturer's annual new model production period, except as restricted under this definition and 40 CFR part 85, subpart X. It must include January 1 of the calendar year for which the model year is named, may not begin before January 2 of the previous calendar year, and it must end by December 31 of the named calendar year.

(1) The manufacturer who holds the certificate of conformity for the vehicle must assign the model year based on the date when its manufacturing operations are completed relative to its annual model year period.

(2) Unless a vehicle is being shipped to a secondary manufacturer that will hold the certificate of conformity, the model year must be assigned prior to introduction of the vehicle into U.S. commerce. The certifying manufacturer must redesignate the model year if it does not complete its manufacturing operations within the originally identified model year. A vehicle introduced into U.S. commerce without a model year is deemed to have a model year equal to the calendar year of its introduction into U.S. commerce unless the certifying manufacturer assigns a later date.

Natural gas has the meaning given in 40 CFR 1036.801. Vehicles that use a pilot-ignited natural gas engine (which uses a small diesel fuel ignition system), are still considered natural gas vehicles.

NHTSA Enforcement means the NHTSA Associate Administrator for Enforcement, or his or her designee.

Party means the person alleged to have committed a violation of § 535.9, and includes manufacturers of vehicles and manufacturers of engines.

Payload means in this part the resultant of subtracting the curb weight from the gross vehicle weight rating.

Petroleum has the meaning given in 40 CFR 1036.801.

Pickup truck has the meaning given in 49 CFR part 523.

Plug-in hybrid electric vehicle (PHEV) means a hybrid electric vehicle that has the capability to charge the battery or batteries used for vehicle propulsion from an off-vehicle electric source, such that the off-vehicle source cannot be connected to the vehicle while the vehicle is in motion.

Power take-off (PTO) means a secondary engine shaft or other system on a vehicle that provides substantial auxiliary power for purposes unrelated to vehicle propulsion or normal vehicle accessories such as air conditioning, power steering, and basic electrical accessories. A typical PTO uses a secondary shaft on the engine to transmit power to a hydraulic pump that powers auxiliary equipment such as a boom on a bucket truck.

Primary intended service class has the meaning for engines as specified in 40 CFR 1036.140.

Rechargeable Energy Storage System (RESS) means the component(s) of a hybrid engine or vehicle that store recovered energy for later use, such as the battery system in a electric hybrid vehicle.

Regulatory category means each of the three types of heavy-duty vehicles defined in 49 CFR 523.6 and the heavy-duty engines used in these heavy-duty vehicles.

Regulatory subcategory means the subgroups in each regulatory category to which fuel consumption requirements apply, and are defined as follows:

- (1) Heavy-duty pick-up trucks and vans.
- (2) Vocational light-heavy vehicles at or below 19,500 pounds GVWR.
- (3) Vocational medium-heavy vehicles above 19,500 pounds GVWR but at or below 33,000 pounds GVWR.
- (4) Vocational heavy-heavy vehicles above 33,000 pounds GVWR.
- (5) Low roof day cab tractors with a GVWR above 26,000 pounds but at or below 33,000 pounds.

- (6) Mid roof day cab tractors with a GVWR above 26,000 pounds but at or below 33,000 pounds.

- (7) High roof day cab tractors with a GVWR above 26,000 pounds but at or below 33,000 pounds.

- (8) Low roof day cab tractors above 33,000 pounds GVWR.

- (9) Mid roof day cab tractors above 33,000 pounds GVWR.

- (10) High roof day cab tractors above 33,000 pounds GVWR.

- (11) Low roof sleeper cab tractors above 33,000 pounds GVWR.

- (12) Mid roof sleeper cab tractors above 33,000 pounds GVWR.

- (13) High roof sleeper cab tractors above 33,000 pounds GVWR.

- (14) Compression-ignition light heavy-duty engines in Class 2b to 5 vehicles with a GVWR above 8,500 pounds but at or below 19,500 pounds.

- (15) Compression-ignition medium heavy-duty engines in Class 6 and 7 vocational vehicles with a GVWR above 19,500 but at or below 33,000 pounds.

- (16) Compression-ignition heavy heavy-duty engines in Class 8 vocational vehicles with a GVWR above 33,000 pounds.

- (17) Compression-ignition medium heavy-duty engines in Class 7 tractors with a GVWR above 26,000 pounds but at or below 33,000 pounds.

- (18) Compression-ignition heavy heavy-duty engines in Class 8 tractors with a GVWR above 33,000 pounds.

- (19) Spark-ignition engines in Class 2b to 8 vehicles with a GVWR above 8,500 pounds.

Roof height means the maximum height of a vehicle (rounded to the nearest inch), excluding narrow accessories such as exhaust pipes and antennas, but including any wide accessories such as roof fairings. Measure roof height of the vehicle configured to have its maximum height that will occur during actual use, with properly inflated tires and no driver, passengers, or cargo onboard. Determine the base roof height on fully inflated tires having a static loaded radius equal to the arithmetic mean of the largest and smallest static loaded radius of tires a manufacturer offers or a standard tire EPA approves. If a vehicle is equipped with an adjustable roof fairing, measure the roof height with the fairing in

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its lowest setting. Once the maximum height is determined, roof heights are divided into the following categories:

(1) Low-roof means a vehicle with a roof height of 120 inches or less.

(2) Mid-roof means a vehicle with a roof height between 121 and 147 inches.

(3) High-roof means a vehicle with a roof height of 148 inches or more.

Service class group means a group of engine and vehicle averaging sets defined as follows:

(1) Spark-ignition engines, light heavy-duty compression-ignition engines, light heavy-duty vocational vehicles and heavy-duty pickup trucks and vans.

(2) Medium heavy-duty compression-ignition engines and medium heavy-duty vocational vehicles and tractors.

(3) Heavy heavy-duty compression-ignition engines and heavy heavy-duty vocational vehicles and tractors.

Sleeper cab means a type of truck cab that has a compartment behind the driver's seat intended to be used by the driver for sleeping. This includes both cabs accessible from the driver's compartment and those accessible from outside the vehicle.

Spark-ignition engines means relating to a gasoline-fueled engine or any other type of engine with a spark plug (or other sparking device) and with operating characteristics significantly similar to the theoretical Otto combustion cycle. Spark-ignition engines usually use a throttle to regulate intake air flow to control power during normal operation.

Subconfiguration means a unique combination within a vehicle configuration of equivalent test weight, road-load horsepower, and any other operational characteristics or parameters that EPA determines may significantly affect CO₂ emissions within a vehicle configuration.

Test group means the multiple vehicle lines and model types that share critical emissions and fuel consumption related features and that are certified as a group by a common certificate of conformity issued by EPA and is used collectively with other test groups within an averaging set or regulatory subcategory and is used by NHTSA for determining the fleet average fuel consumption.

Tire rolling resistance level (TRRL) means a value with units of kg/metric ton that represents that rolling resistance of a tire configuration. TRRLs are used as inputs to the GEM model under 40 CFR 1037.520. Note that a manufacturer may assign a value higher than a measured rolling resistance of a tire configuration.

Towing capacity in this part is equal to the resultant of subtracting the gross vehicle weight rating from the gross combined weight rating.

Trade means to exchange fuel consumption credits, either as a buyer or a seller.

Truck tractor has the meaning given in 49 CFR 571.3. This includes most heavy-duty vehicles specifically designed for the primary purpose of pulling trailers, but does not include vehicles designed to carry other loads. For purposes of this definition "other loads" would not include loads carried in the cab, sleeper compartment, or toolboxes. Examples of vehicles that are similar to tractors but that are not tractors under this part include dromedary tractors, automobile haulers, straight trucks with trailers hitches, and tow trucks.

U.S.-directed production volume means the number of vehicle units, subject to the requirements of this part, produced by a manufacturer for which the manufacturer has a reasonable assurance that sale was or will be made to ultimate purchasers in the United States.

Useful life has the meaning given in 40 CFR 1037.801.

Vehicle configuration means a unique combination of vehicle hardware and calibration (related to measured or modeled emissions) within a vehicle family. Vehicles with hardware or software differences, but that have no hardware or software differences related to measured or modeled emissions or fuel consumption can be included in the same vehicle configuration. Note that vehicles with hardware or software differences related to measured or modeled emissions or fuel consumption are considered to be different configurations even if they have the same GEM inputs and FEL. Vehicles within a vehicle configuration differ only with respect to normal production variability or factors unrelated to

measured or modeled emissions and fuel consumption for EPA and NHTSA.

Vehicle family has the meaning given in 40 CFR 1037.230.

Vehicle service class has the meaning for vehicles as specified in the 40 CFR 1037.801.

Vocational tractor has the meaning given in 40 CFR 1037.630.

Zero emissions vehicle means an electric vehicle or a fuel cell vehicle.

[76 FR 57493, Sept. 15, 2011, as amended at 76 FR 65971, Oct. 25, 2011]

§ 535.5 Standards.

(a) *Heavy-duty pickup trucks and vans.* Each manufacturer of a fleet of heavy-duty pickup trucks and vans shall comply with the fuel consumption standards in this paragraph (a) expressed in gallons per 100 miles. If the manufacturer's fleet includes conventional vehicles (gasoline, diesel and alternative fueled vehicles) and advanced technology vehicles (hybrids with regenerative braking, vehicles equipped with Rankine-cycle engines, electric and fuel cell vehicles), it should divide its fleet into two separate fleets each with its own separate fleet average fuel consumption standard which a manufacturer must comply with the requirements of this paragraph (a).

(1) *Mandatory standards.* For model years 2016 and later, each manufacturer must comply with the fleet average standard derived from the unique subconfiguration target standards (or groups of subconfigurations approved by EPA in accordance with 40 CFR 1037.104) of the model types that make up the manufacturer's fleet in a given model year. Each subconfiguration has a unique attribute-based target standard, defined by each group of vehicles having the same payload, towing capacity and whether the vehicles are equipped with a 2-wheel or 4-wheel drive configuration.

(2) *Subconfiguration target standards.* (i) Two alternatives exist for determining the subconfiguration target standards for model years 2016 and later. For each alternative, separate standards exist for compression-ignition and spark-ignition vehicles:

(A) The first alternative allows manufacturers to determine a fixed fuel

consumption standard that is constant over the model years; and

(B) The second alternative allows manufacturers to determine standards that are phased-in gradually each year.

(ii) Calculate the subconfiguration target standards as specified in this paragraph (a)(2)(ii), using the appropriate coefficients from Table 1 choosing between the alternatives in paragraphs (a)(2)(i)(A) and (B) of this section. For electric or fuel cell heavy-duty vehicles, use compression-ignition vehicle coefficients "c" and "d" and for hybrid (including plug-in hybrid), dedicated and dual-fueled vehicles, use coefficients "c" and "d" appropriate for the engine type used. Round each standard to the nearest 0.01 gallons per 100 miles and specify all weights in pounds rounded to the nearest pound. Calculate the subconfiguration target standards using the following equation:

$$\text{Subconfiguration Target Standard (gallons per 100 miles)} = [c \times (\text{WF})] + d$$

Where:

WF = Work Factor = $[0.75 \times (\text{Payload Capacity} + \text{Xwd})] + [0.25 \times \text{Towing Capacity}]$

Xwd = 4wd Adjustment = 500 lbs if the vehicle group is equipped with 4wd and all-wheel drive, otherwise equals 0 lbs for 2wd.

Payload Capacity = GVWR (lbs) - Curb Weight (lbs) (for each vehicle group)

Towing Capacity = GCWR (lbs) - GVWR (lbs) (for each vehicle group)

TABLE 1—EQUATION COEFFICIENTS FOR SUBCONFIGURATION TARGET STANDARDS

Model year	c	d
Alternative 1—Fixed Target Standards		
Compression-ignition Vehicle Coefficients for Model Years 2016 and later		
2016–2018	0.000432	3.33
2019 and later	0.000409	3.14
Spark-ignition Vehicle Coefficients for Model Years 2016 and later		
2016–2018	0.000513	3.96
2019 and later	0.000495	3.81
Alternative 2—Phased-in Target Standards		
Compression-ignition Vehicle Coefficients for Model Years 2016 and later		
2016	0.000452	3.48
2017	0.000437	3.37

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TABLE 1—EQUATION COEFFICIENTS FOR SUB-CONFIGURATION TARGET STANDARDS—Continued

Model year	c	d
2018 and later	0.000409	3.14
-Spark-ignition Vehicle Coefficients for Model Years 2016 and later		
2016	0.000528	4.07
2017	0.000518	3.98
2018 and later	0.000495	3.81

(3) *Fleet average fuel consumption standard.* (i) Calculate each manufac-

turer’s fleet average fuel consumption standard for conventional and advanced technology fleets separately based on the subconfiguration target standards specified in paragraph (a)(2) of this section, weighted to production volumes and averaged using the following equation combining all the applicable vehicles in a manufacturer’s U.S. directed fleet (compression-ignition, spark-ignition and advanced technology vehicles) for a given model year, rounded to the nearest 0.01 gallons per 100 miles:

$$\text{Fleet Average Standard} = \frac{\sum [\text{Subconfiguration Target Standard}_i \times \text{Volume}_i]}{\sum [\text{Volume}_i]}$$

Where:

Subconfiguration Target Standard_i = fuel consumption standard for each group of vehicles with same payload, towing capacity and drive configuration (gallons per 100 miles).

Volume_i = production volume of each unique subconfiguration of a model type based upon payload, towing capacity and drive configuration.

(A) A manufacturer may group together subconfigurations that have the same test weight (ETW), GVWR, and GCWR. Calculate work factor and target value assuming a curb weight equal to two times ETW minus GVWR.

(B) A manufacturer may group together other subconfigurations if it uses the lowest target value calculated for any of the subconfigurations.

(C) The fleet average shall also be derived in accordance with 40 CFR 86.1865 and 40 CFR 1037.104(d).

(ii) A manufacturer complies with the requirements of this part if it provides reports, as specified in § 535.8, by the required deadlines and meets one of the following conditions:

(A) The manufacturer’s fleet average performance, as determined in § 535.6, is less than the fleet average standard; or

(B) The manufacturer uses one or more of the credit flexibilities provided under NHTSA’s Averaging, Banking and Trading Program, as specified in § 535.7, to comply with standards.

(iii) Manufacturers must select an alternative for subconfiguration target

standards at the same time they submit the model year 2016 Pre-Model year Report, specified in § 535.8. Once selected, the decision cannot be reversed and the manufacturer must continue to comply with the same alternative for subsequent model years.

(iv) A manufacturer failing to comply with the provisions specified in paragraph (a)(3)(ii) of this section is liable to pay civil penalties in accordance with § 535.9.

(4) *Voluntary standards.* (i) Manufacturers may choose voluntarily to comply early with fuel consumption standards for model years 2013 through 2015, as determined in paragraphs (a)(4)(iii) and (iv) of this section, for example, in order to begin accumulating credits through over-compliance with the applicable standard. A manufacturer choosing early compliance must comply with all the vehicles and engines it manufactures in each regulatory category for a given model year.

(ii) A manufacturer must declare its intent to voluntarily comply with fuel consumption standards at the same time it submits a Pre-Model Report, prior to the compliance model year beginning as specified in § 535.8; and, once selected, the decision cannot be reversed and the manufacturer must continue to comply for each subsequent model year for all the vehicles and engines it manufactures in each regulatory category for a given model year.

(iii) Calculate separate subconfiguration target standards for compression-ignition and spark-ignition vehicles for model years 2013 through 2015 using the equation in paragraph (a)(2)(ii) of this section, substituting the appropriate values for the coefficients in Table 2 of this section as appropriate.

TABLE 2—VOLUNTARY COMPLIANCE EQUATION COEFFICIENTS FOR VEHICLE FUEL CONSUMPTION STANDARDS

Model Year	c	d
Compression-ignition Vehicle Coefficients for Voluntary Compliance in Model Years 2013 through 2015		
2013 and 14	0.000470	3.61
2015	0.000466	3.60
Spark-ignition Vehicle Coefficients for Voluntary Compliance in Model Years 2013 through 2015		
2013 and 14	0.000542	4.17
2015	0.000539	4.15

(iv) Calculate the fleet average fuel consumption standards for model years 2013 through 2015 using the equation in paragraph (a)(3) of this section.

(5) *Exclusion of vehicles not certified as complete vehicles.* The vehicle standards §535.5(a) do not apply for vehicles that are chassis-certified with respect to EPA's criteria pollutant test procedure in 40 CFR part 86, subpart S. Any chassis-certified vehicles must comply with the vehicle standards and requirements of §535.5(b) and the engine standards of §535.5(d) for engines used in these vehicles. A vehicle manufacturer choosing to comply with this paragraph and that is not the engine manufacturer is required to notify the engine manufacturers that their engines are subject to §535.5(d) and that it intends to use their engines in excluded vehicles.

(6) *Optional certification under this section.* Manufacturers may certify any complete or cab-complete Class 2b through 5 vehicles weighing at or below 19,500 pounds GVWR and any incomplete vehicles approved by EPA for inclusion under this paragraph to the same testing and standard that applies to a comparable complete sister vehicles as determined in accordance in 40 CFR 1037.150(l). Calculate the target standard value under paragraph (a)(2) of this section based on the same work factor value that applies for the complete sister vehicle.

(7) *Loose engines.* This paragraph applies for spark-ignition engines identical to engines used in vehicles certified to the standards of this section §535.5(a), where manufacturers sell such engines as loose engines or installed in incomplete vehicles that are not cab-complete vehicles in accordance with 40 CFR 1037.150(m). A manufacturer's engines are deemed to have fuel consumption target values and test results based upon the complete vehicle in the applicable test group with the highest equivalent test weight in accordance with 40 CFR 1037.150(m). The fuel consumption subconfiguration standard for a loose engines equals the test group result of the complete vehicle as specified in 40 CFR 1037.150(m)(6) multiplied by 1.10 and rounded to the nearest 0.01 gallon per 100 miles. The U.S.-directed production volume of engines manufactured for sale as loose engines or installed in incomplete heavy-duty vehicles that are not cab-complete vehicles in any given model year may not exceed ten percent of the total U.S.-directed production volume of engines of that design that the manufacturer produces for heavy-duty applications for that model year, including engines the manufacturer produces for complete vehicles, cab-complete vehicles, and other incomplete vehicles. The total number of engines a manufacturer may certify under this paragraph (a)(7), of all engine designs, may not exceed 15,000 in any model year as specified in 40 CFR 1037.150(m). Engines produced in excess of the number cannot be certified to the standard in this paragraph (a)(7).

(b) *Heavy-duty vocational vehicles.* Each chassis manufacturer of heavy-duty vocational vehicles shall comply with the fuel consumption standards in this paragraph (b) expressed in gallons per 1,000 ton-miles. Manufacturers of engines used in heavy-duty vocational vehicles shall comply with the standards in paragraph (d) of this section.

(1) *Mandatory standards.* For model years 2016 and later, each chassis manufacturer of heavy-duty vocational vehicles must comply with the fuel consumption standards in paragraph (b)(3) of this section.

(i) The heavy-duty vocational vehicle chassis category is subdivided by

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GVWR into three regulatory subcategories as defined in §535.4, each with its own assigned standard.

(ii) For purposes of certifying vehicles to fuel consumption standards, manufacturers must divide their product lines into vehicle families that have similar emissions and fuel consumption features, as specified by EPA in 40 CFR part 1037, subpart C, and these families will be subject to the applicable standards. Each vehicle family is limited to a single model year.

(iii) A manufacturer complies with the requirements of this part, if it provides information as specified in §535.8, by the required deadlines and meets one of the following conditions:

(A) The manufacturer’s fuel consumption performance for each vehicle family, as determined in §535.6, is lower than the applicable standard; or

(B) The manufacturer uses one or more of the credit flexibilities provided under NHTSA’s Averaging, Banking and Trading Program, specified in §535.7, to comply with standards.

(iv) A manufacturer failing to comply with the provisions specified in paragraph (b)(1)(iii) of this section is liable to pay civil penalties in accordance with §535.9.

(2) *Voluntary compliance.* (i) For model years 2013 through 2015, a manufacturer may choose voluntarily to comply early with the fuel consumption standards provided in paragraph (b)(3) of this section. For example, a manufacturer may choose to comply early in order to begin accumulating credits through over-compliance with the applicable standards. A manufacturer choosing early compliance must comply with all the vehicles and engines it manufactures in each regulatory category for a given model year.

(ii) A manufacturer must declare its intent to voluntarily comply with fuel consumption standards and identify its plans to comply before it submits its first application for a certificate of conformity for the respective model year as specified in §535.8; and, once selected, the decision cannot be reversed and the manufacturer must continue to comply for each subsequent model year for all the vehicles and engines it manufactures in each regulatory category for a given model year.

(3) *Regulatory subcategory standards.* The fuel consumption standards for heavy-duty vocational vehicles are given in the following table:

TABLE 3—HEAVY-DUTY VOCATIONAL VEHICLE FUEL CONSUMPTION STANDARDS

Regulatory subcategories	Light Heavy vehicles Class 2b–5	Medium heavy vehicles Class 6–7	Heavy heavy vehicles Class 8
Fuel Consumption Mandatory Standards (gallons per 1,000 ton-miles) Effective for Model Years 2017 and later			
Fuel Consumption Standard	36.7	22.1	21.8
Effective for Model Years 2016			
Fuel Consumption Standard	38.1	23.0	22.2
Fuel Consumption Voluntary Standards (gallons per 1,000 ton-miles) Effective for Model Years 2013 to 2015			
Fuel Consumption Standard	38.1	23.0	22.2

(4) *Certifying across service classes.* A manufacturer may optionally certify a vocational vehicle to the standards and useful life applicable to a higher vehicle service class (or regulatory subcategory changes such as complying with the heavy heavy-duty standard instead of medium heavy-duty standard), provided the manufacturer does not generate credits with the vehicle. If a manufacturer includes smaller vehicles in a credit-generating subfamily (with

an FEL below the standard), exclude their production volume from the credit calculation.

(5) *Off-road operation.* Heavy-duty vocational vehicles including vocational tractors meeting the off-road criteria in 49 CFR 523.2 are exempted from the requirements in this paragraph (b), but the engines in these vehicles must meet the requirements of paragraph (d) of this section.

(c) *Truck tractors.* Each manufacturer of truck tractors, except vocational tractors, with a GVWR above 26,000 pounds shall comply with the fuel consumption standards in this paragraph (c) expressed in gallons per 1,000 ton-miles.

(1) *Mandatory standards.* For model years 2016 and later, each manufacturer of truck tractors must comply with the fuel consumption standards in paragraph (c)(3) of this section.

(i) The truck tractor category is subdivided by roof height and cab design into nine regulatory subcategories as shown in Table 4 of this section, each with its own assigned standard.

(ii) For purposes of certifying vehicles to fuel consumption standards, manufacturers must divide their product lines into vehicles families that have similar emissions and fuel consumption features, as specified by EPA in 40 CFR part 1037, subpart C, and these families will be subject to the applicable standards. Each vehicle family is limited to a single model year.

(iii) Standards for truck tractor engines are given in paragraph (d) of this section.

(iv) A manufacturer complies with the requirements of this part, if at the end of the model year, it provides reports, as specified in §535.8, by the required deadlines and meets one of the following conditions:

(A) The manufacturer's fuel consumption performance for each vehicle family, as determined in §535.6, is lower than the applicable standard; or

(B) The manufacturer uses one or more of the credit flexibilities provided

under NHTSA's Averaging, Banking and Trading Program, specified in §535.7, to comply with standards.

(v) A manufacturer failing to comply with the provisions specified in paragraph (c)(1)(iv) of this section is liable to pay civil penalties in accordance with §535.9.

(2) *Voluntary compliance.* (i) For model years 2013 through 2015, a manufacturer may choose voluntarily to comply early with the fuel consumption standards provided in paragraph (c)(3) of this section. For example, a manufacturer may choose to comply early in order to begin accumulating credits through over-compliance with the applicable standards. A manufacturer choosing early compliance must comply with all the vehicles and engines it manufactures in each regulatory category for a given model year.

(ii) A manufacturer must declare its intent to voluntarily comply with fuel consumption standards and identify its plans to comply before it submits its first application for a certificate of conformity for the respective model year as specified in §535.8; and, once selected, the decision cannot be reversed and the manufacturer must continue to comply for each subsequent model year for all the vehicles and engines it manufactures in each regulatory category for a given model year.

(3) *Regulatory subcategory standards.* The fuel consumption standards for truck tractors, except for vocational tractors, are given in the following table:

TABLE 4—TRUCK TRACTOR FUEL CONSUMPTION STANDARDS

Regulatory subcategories	Day cab		Sleeper cab
	Class 7	Class 8	Class 8
Fuel Consumption Mandatory Standards (gallons per 1,000 ton-miles) Effective for Model Years 2017 and later			
Low Roof	10.2	7.8	6.5
Mid Roof	11.3	8.4	7.2
High Roof	11.8	8.7	7.1
Effective for Model Years 2016			
Low Roof	10.5	8.0	6.7
Mid Roof	11.7	8.7	7.4
High Roof	12.2	9.0	7.3
Fuel Consumption Voluntary Standards (gallons per 1,000 ton-miles) Effective for Model Years 2013 to 2015			
Low Roof	10.5	8.0	6.7
Mid Roof	11.7	8.7	7.4

TABLE 4—TRUCK TRACTOR FUEL CONSUMPTION STANDARDS—Continued

Regulatory subcategories	Day cab		Sleeper cab
	Class 7	Class 8	Class 8
High Roof	12.2	9.0	7.3

(4) *Certifying across service classes.* A manufacturer may optionally certify a tractor to the standards and useful life applicable to a higher vehicle service class (or regulatory subcategory changes such as complying with the Class 8 day-cab tractor standard instead of Class 7 day-cab tractor), provided the manufacturer does not generate credits with the vehicle. If a manufacturer includes smaller vehicles in a credit-generating subfamily (with an FEL below the standard), exclude their production volume from the credit calculation.

(5) *Vocational tractors.* Tractors meeting the definition of vocational tractors in 49 CFR 523.2 must comply with requirements for heavy-duty vocational vehicles specified in paragraphs (b) and (d) of this section. Class 7 and Class 8 tractors certified or exempted as vocational tractors are limited in production to no more than 21,000 vehicles in any three consecutive model years. If a manufacturer is determined as not applying this allowance in good faith by the EPA in its applications for certification in accordance with 40 CFR 1037.205 and 1037.610, a manufacturer must comply with the tractor fuel consumption standards in paragraph (c)(3) of this section.

(d) *Heavy-duty engines.* Each manufacturer of heavy-duty engines shall comply with the fuel consumption standards in this paragraph (d) expressed in gallons per 100 brake-horsepower-hours. Each engine must be certified to the primary intended service class that it is designed for in accordance with 40 CFR 1036.108;

(1) *Mandatory standards.* Each manufacturer must comply with the fuel consumption standard in paragraph (d)(3) of this section for model years 2017 and later compression-ignition engines and for model years 2016 and later spark-ignition engines.

(i) The heavy-duty engine regulatory category is divided into six regulatory

subcategories, five compression-ignition subcategories and one spark-ignition subcategory, as shown in Table 5 of this section.

(ii) Separate standards exist for engines manufactured for use in heavy-duty vocational vehicles and in truck tractors.

(iii) For purposes of certifying engines to fuel consumption standards, manufacturers must divide their product lines into engine families that have similar fuel consumption features, as specified by EPA in 40 CFR part 1036, subpart C, and these families will be subject to the same standards. Each engine family is limited to a single model year.

(iv) A manufacturer complies with the requirements of this part, if at the end of the model year, it provides reports, as specified in § 535.8, by the required deadlines and meets one of the following conditions:

(A) The manufacturer’s fuel consumption performance of each engine family as determined in § 535.6 is less than the applicable standard; or

(B) The manufacturer uses one or more of the flexibilities provided under NHTSA’s Averaging, Banking and Trading Program, specified in § 535.7, to comply with standards.

(v) A manufacturer failing to comply with the provisions specified in paragraph (d)(1)(iv) of this section is liable to pay civil penalties in accordance with § 535.9.

(2) *Voluntary compliance.* (i) For model years 2013 through 2016 for compression-ignition engines, and for model year 2015 for spark-ignition engines, a manufacturer may choose voluntarily to comply with the fuel consumption standards provided in paragraph (d)(3) through (5) of this section. For example, a manufacturer may choose to comply early in order to begin accumulating credits through over-compliance with the applicable standards. A manufacturer choosing

early compliance must comply with all the vehicles and engines it manufacturers in each regulatory category for a given model year except in model year 2013 the manufacturer may comply with individual engine families as specified in 40 CFR 1036.150(a)(2).

(ii) A manufacturer must declare its intent to voluntarily comply with fuel consumption standards and identify its plans to comply before it submits its first application for a certificate of

conformity for the respective model year as specified in §535.8; and, once selected, the decision cannot be reversed and the manufacturer must continue to comply for each subsequent model year for all the vehicles and engines it manufacturers in each regulatory category for a given model year.

(3) *Regulatory subcategory standards.* The fuel consumption standards for heavy-duty engines are given in the following:

TABLE 5—PRIMARY HEAVY-DUTY ENGINE STANDARDS

Fuel Consumption Mandatory Standards (gallons per 100 bhp-hr)						
Regulatory Subcategory	Light Heavy-Duty Compression-Ignition Engine	Medium Heavy-Duty Compression-Ignition Engine		Heavy Heavy-Duty Compression-Ignition Engine		Spark-Ignition Engines
Truck Application.	Vocational	Vocational	Tractor	Vocational	Tractor	All
Effective Model Years.	2017 and later					2016 and later
Fuel Consumption Standard.	5.66	5.66	4.78	5.45	4.52	7.06
Fuel Consumption Standards for Voluntary Compliance (gallons per100 bhp-hr)						
Regulatory Sub-category.	Light Heavy-Duty Compression-Ignition Engine	Medium Heavy-Duty Compression-Ignition Engine		Heavy Heavy-Duty Compression-Ignition Engine		Spark-ignition Engine
Truck Application.	Vocational	Vocational	Tractor	Vocational	Tractor	All
Effective Model Years.	2013 through 2016					2015
Voluntary Fuel Consumption Standard.	5.89	5.89	4.93	5.57	4.67	7.06

(4) *Alternate subcategory standards.* The alternative fuel consumption standards for heavy-duty compression-ignition engines are as follows:

(i) Manufacturers entering the voluntary program in model years 2014 through 2016, may choose to certify compression-ignition engine families unable to meet standards provided in paragraph (d)(3) of this section to the alternative fuel consumption standards of this paragraph (d)(4).

(ii) Manufacturers may not certify engines to these alternate standards if they are part of an averaging set in which they carry a balance of banked

credits. For purposes of this section, manufacturers are deemed to carry credits in an averaging set if they carry credits from advance technology that are allowed to be used in that averaging set in accordance with §535.7(d)(12).

(iii) The emission standards of this section are determined as specified in EPA 40 CFR 1036.620(a) through (c) and should be converted to equivalent fuel consumption values.

(5) *Alternate Phase-In Standards.* Manufacturers have the option to comply

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with EPA emissions standards for compression-ignition engines using an alternative phase-in schedule that correlates with the EPA OBD standards. If a manufacturer chooses to use the alternative phase-in schedule for meeting EPA standards and optionally chooses to comply early with the NHTSA fuel consumption program, it must use the same phase-in schedule

beginning in model year 2013 for fuel consumption standards and must remain in the program for each model year thereafter. The fuel consumption standard for each model year of the alternative phase-in schedule is provided in Table 6 of this section. Note that engines certified to these standards are not eligible for early credits under § 535.7.

TABLE 6—ALTERNATIVE PHASE-IN COMPRESSION IGNITION ENGINE STANDARDS

Tractors	LHD Engines	MHD Engines	HHD Engines
Model Years 2013–2015	NA	5.03 gals/100 hp-hr	4.76 gals/100 hp-hr
Model Years 2016 and later* ..	NA	4.78 gals/100 hp-hr	4.52 gals/100 hp-hr
Vocational	LHD Engines	MHD Engines	HHD Engines
Model Years 2013–2015	6.07 gals/100 hp-hr	6.07 gals/100 hp-hr	5.67 gals/100 hp-hr
Model Years 2016 and later* ..	5.66 gals/100 hp-hr	5.66 gals/100 hp-hr	5.45 gals/100 hp-hr

*Note: these alternate standards for 2016 and later are the same as the otherwise applicable standards for 2017 and later.

§ 535.6 Measurement and calculation procedures.

(a) *Heavy-duty pickup trucks and vans.* This section describes the testing a manufacturer must perform for each model year and the method for determining the fleet fuel consumption performance to show compliance with the fleet average fuel consumption standard for heavy-duty pickup trucks and vans in § 535.5(a).

(1) For each model year, the heavy-duty pickup trucks and vans selected by a manufacturer to comply with fuel consumption standards in § 535.5(a) must be used to determine the manufacturer's fleet average fuel consumption performance. If the manufacturer's fleet includes conventional and advanced technology heavy-duty pickup trucks and vans, the fleet should be sub-divided into two separate vehicle fleets, with all of the conventional vehicles in one fleet and all of the advanced technology vehicles in the other fleet.

(2) Vehicles in each fleet should be divided into test groups or subconfigurations according to EPA in 40 CFR part 86, subpart S, and 40 CFR 1037.104.

(3) Test and measure the CO₂ emissions test results for the selected vehicles and determine the CO₂ emissions test group result, in grams per mile in accordance with 40 CFR part 86, subpart S.

(i) Perform exhaust testing on vehicles fueled by conventional and alter-

native fuels, including dedicated and dual fueled (multi-fueled and flexible fueled) vehicles and measure the CO₂ emissions test result.

(ii) Adjust the CO₂ emissions test result of dual fueled vehicles using a weighted average of your emission results as specified in 40 CFR 600.510–12(k) for light-duty trucks.

(iii) All electric vehicles are deemed to have zero emissions of CO₂, CH₄, and N₂O. No emission testing is required for such electric vehicles. Assign the fuel consumption test group result to a value of zero gallons per 100 miles in paragraph (a)(4) of this section.

(iv) Test cab-complete and incomplete vehicles using the applicable complete sister vehicles as determined in 40 CFR 1037.104(g).

(v) Test loose engines using applicable complete vehicles as determined in 40 CFR 1037.104(h).

(vi) Manufacturers can choose to analytically derive CO₂ emission rates (ADCs) for test groups or subconfigurations. Calculate the ADCs for test groups or subconfigurations in accordance with 40 CFR 1037.104(g).

(4) Calculate equivalent fuel consumption test group results, in gallons per 100 miles, from CO₂ emissions test group results, in grams per miles, and round to the nearest 0.01 gallon per 100 miles.

(i) Calculate the equivalent fuel consumption test group results as follows for compression-ignition vehicles and

alternative fuel compression-ignition vehicles. CO₂ emissions test group result (grams per mile)/10,180 grams per gallon of diesel fuel) × (10²) = Fuel consumption test group result (gallons per 100 mile).

(ii) Calculate the equivalent fuel consumption test group results as follows for spark-ignition vehicles and alternative fuel spark-ignition vehicles. CO₂ emissions test group result (grams per mile)/8,887 grams per gallon of gasoline

fuel) × (10²) = Fuel consumption test group result (gallons per 100 mile).

(5) Calculate the fleet average fuel consumption result, in gallons per 100 miles, from the equivalent fuel consumption test group results and round the fuel consumption result to the nearest 0.01 gallon per 100 miles. Calculate the fleet average fuel consumption result using the following equation.

$$\text{Fleet Average Fuel Consumption} = \frac{\sum [\text{Fuel Consumption Test Group Result}_i \times \text{Volume}_i]}{\sum [\text{Volume}_i]}$$

Where:

Fuel Consumption Test Group Result_i = fuel consumption performance for each test group as defined in 49 CFR 523.4.

Volume_i = production volume of each test group.

(6) Compare the fleet average fuel consumption standard to the fleet average fuel consumption performance. The fleet average fuel consumption performance must be less than or equal to the fleet fuel consumption standard to comply with standards in § 535.5(a).

(b) *Heavy-duty vocational vehicles and tractors.* This section describes the testing a manufacturer must perform and the method for determining fuel consumption performance to show compliance with the fuel consumption standards for vocational vehicles and tractors in § 535.5(b) and (c).

(1) Select vehicles and vehicle family configurations to test as specified in 40 CFR 1037.230 for vehicles that make up each of the manufacturer's regulatory subcategories of vocational vehicles and tractors.

(2) Determine the CO₂ emissions and fuel consumption results for all vehicle chassis (conventional, alternative fueled and advanced technology vehicles) using the Greenhouse Emissions Model (GEM) in accordance with 40 CFR part 1037, subpart F. Vocational vehicles and tractor chassis are modeled using the following inputs in the GEM model. All seven of the following inputs apply for sleeper cab tractors, while some do not apply for vocational

vehicles and other tractor regulatory subcategories:

(i) Identification of vehicles using regulatory subcategories (such as "Class 8 Combination—Sleeper Cab—High Roof").

(ii) Coefficient of aerodynamic drag in accordance with 40 CFR 1037.520 and 1037.521. Do not use for vocational vehicles.

(iii) Steer tire rolling resistance for low rolling resistance tires in accordance with 40 CFR 1037.520 and 1037.650.

(iv) Drive tire rolling resistance for low rolling resistance tires in accordance with 40 CFR 1037.520 and 1037.650.

(v) Vehicle speed limit as governed by vehicles speed limiters in accordance with 40 CFR 1037.520 and 1037.640. Do not use for vocational vehicles.

(vi) Vehicle weight reduction as provided in accordance with 40 CFR 1037.520. Do not use for vocational vehicles.

(vii) Extended idle reduction credit using automatic engine shutdown systems in accordance with 40 CFR 1037.520 and 1037.660. Do not use for vehicles other than Class 8 sleeper cabs.

(3) From the GEM results, select the CO₂ family emissions level (FEL) and equivalent fuel consumption values for vocational vehicle and tractor families in each regulatory subcategories for each model year. Equivalent fuel consumption FELs are derived in GEM and expressed to the nearest 0.1 gallons per 1000 ton-mile. For families containing multiple subfamilies, identify the FELs for each subfamily.

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(4) Paragraphs (b)(1) through (3) of this section address vocational vehicle and tractor chassis testing only. Engine performance and the advanced technologies equipped on vocational vehicles and tractors are tested separately as follows:

(i) Vocational vehicle and tractor engine test results for conventional and alternative fueled vehicles are determined in accordance with § 535.6(c).

(ii) Improvements for advanced technologies are determined as follows:

(A) Test hybrid vehicles with power take-off in accordance with 40 CFR 1037.525 and vehicles with post-transmission hybrid systems in accordance with 40 CFR 1037.550.

(B) All electric vehicles are deemed to have zero CO₂ emissions and fuel consumption. No emission testing is required for such electric vehicles. Assign the vehicle family with a fuel consumption FEL result to a value of zero gallons per 1000-ton miles in paragraph (3) of this section.

(c) *Heavy-duty engines.* This section describes the testing a manufacturer must perform and the method for determining fuel consumption performance to show compliance with the fuel consumption standards for engines in § 535.5(d). Each engine must be tested to the primary intended service class that it is designed for in accordance with 40 CFR 1036.108

(1) Select emission-data engines and engine family configurations to test as specified in 40 CFR part 86 and part 1036, subpart C for engines installed in vehicles that make up each of the manufacturer's regulatory subcategory.

(2) Test the CO₂ emissions for each emissions-data engine subject to the standards in § 535.5(d) using the procedures and equipment specified in 40 CFR part 1036, subpart F. Measure the CO₂ emissions in grams per bhp-hr as specified in 40 CFR part 86, subpart N, and part 1036, subpart C.

(i) Perform exhaust testing on each fuel type for conventional, dedicated, dual fuel (multi-fuel, and flexible fuel) vehicles and measure the CO₂ emissions level.

(ii) Adjust the CO₂ emissions result of dual fueled vehicles using a weighted average of the demonstrated emission results as specified in 40 CFR 1036.225.

If EPA disapproves a manufacturer's dual fuel vehicle demonstrated use submission, NHTSA will require the manufacturer to only use the test results with 100 percent conventional fuel to determine the fuel consumption of the engine.

(iii) All electric vehicles are deemed to have zero emissions of CO₂ and zero fuel consumption. No emission or fuel consumption testing is required for such electric vehicles.

(3) Determine the CO₂ emissions for the family certification level (FCL) from the emissions test results in paragraph (c)(2) of this section for engine families within the heavy-duty engine regulatory subcategories for each model year.

(i) If a manufacturer certifies an engine family for use both as a vocational engine and as a tractor engine, the manufacturer must split the family into two separate subfamilies in accordance with 40 CFR 1036.230. The manufacturer may assign the numbers and configurations of engines within the respective subfamilies at any time prior to the submission of the end-of-year report required by 40 CFR 1036.730 and § 535.8. The manufacturer must track into which type of vehicle each engine is installed, although EPA may allow the manufacturer to use statistical methods to determine this for a fraction of its engines.

(ii) The following engines are excluded from the engine families used to determine FCL values and the benefit for these engines is determined as an advanced technology credits under the ABT provisions provided in § 535.7(e):

(A) Engines certified as hybrid engines or power packs.

(B) Engines certified as hybrid engines designed with PTO capability and that are sold with the engine coupled to a transmission.

(C) Engines with Rankine cycle waste heat recovery.

(4) Calculate equivalent fuel consumption values for emissions FCLs and the CO₂ levels for certified engines, in gallons per 100 bhp-hr and round each fuel consumption value to the nearest 0.01 gallon per 100 bhp-hr.

(i) Calculate equivalent fuel consumption FCL values for compression-ignition engines and alternative fuel

compression-ignition engines. CO₂ FCL value (grams per bhp-hr)/10,180 grams per gallon of diesel fuel) × (10²) = Fuel consumption FCL value (gallons per 100 bhp-hr).

(ii) Calculate equivalent fuel consumption FCL values for spark-ignition engines and alternative fuel spark-ignition engines. CO₂ FCL value (grams per bhp-hr)/8,887 grams per gallon of gasoline fuel) × (10²) = Fuel consumption FCL value (gallons per 100 bhp-hr).

(iii) Manufacturers may carryover fuel consumption data from a previous model year if allowed to carry over emissions data for EPA in accordance with 40 CFR 1036.235.

(iv) If a manufacturer uses an alternate test procedure under 40 CFR 1065.10 and subsequently the data is rejected by the EPA, NHTSA will also reject the data.

[76 FR 57493, Sept. 15, 2011; 76 FR 59922, Sept. 28, 2011]

§ 535.7 Averaging, banking, and trading (ABT) program.

(a) *Fuel consumption credits (FCC)*. At the end of each model year, manufacturers may earn credits for heavy-duty vehicles and engines exceeding the fuel consumption standards in § 535.5 or by using one or more of the flexibilities in this paragraph (a) to gain credits. Manufacturers may average, bank, and trade fuel consumption credits for purposes of complying with fuel consumption standards. The following criteria and restrictions apply to averaging, banking and trading FCC (hereafter reference as the NHTSA ABT program).

(1) *Averaging*. Averaging is the exchange of FCC among a manufacturer's engines or vehicle families or test groups within an averaging set. With the exception of FCC earned for advanced technologies as further clarified below, a manufacturer may average FCC only within the same averaging set. The principle averaging sets are defined in § 535.4.

(2) *Banking*. Banking is the retention of surplus FCC by the manufacturer generating the credits for use in future model years for averaging or trading. Banked FCC retain the designation from the averaging set and model year in which they were generated and expire after five model years.

(3) *Trading*. Trading is a transaction that transfers FCC between manufacturers or other entities. A manufacturer may use traded FCC for averaging, banking, or further trading transactions. Traded FCC, other than advanced technology credits, may be used only within the averaging set in which they were generated.

(b) *ABT provisions for heavy-duty pickup trucks and vans*. (1) This regulatory category consists of one regulatory subcategory, heavy-duty pickup trucks and vans. This one regulatory subcategory makes up one averaging set.

(2) Manufacturers that manufacture vehicles within this regulatory subcategory shall calculate credits at the end of each model year based upon the final average fleet fuel consumption standard and final average fleet fuel consumption performance value within this one regulatory subcategory as identified in paragraph (b)(8) of this section. If the manufacturer's fleet includes conventional vehicles (gasoline, diesel and alternative fuel) and advanced technology vehicles (hybrids with regenerative braking, vehicles equipped with Rankine-cycle engines, electric and fuel cell vehicles) it should be divided into two separate fleets each with its own final average fleet fuel consumption standard and final average fleet fuel consumption performance value. Credits shall be calculated for each of the two fleets.

(3) Fuel consumption levels below the standard create a "credit surplus," while fuel consumption levels above the standard create a "credit shortfall."

(4) Surplus credits, other than advanced technology credits, generated and calculated within this averaging set may only be used to offset a credit shortfall in this same averaging set.

(5) Advanced technology credits can be used to offset a credit shortfall in this same averaging set or other averaging sets. However, a manufacturer must first apply advanced technology credits to any deficits in the same averaging set before applying them to other averaging sets.

(6) Surplus credits, other than advanced technology credits, may be traded among credit holders but must stay within the same averaging set.

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Advanced technology credits can be traded across averaging sets.

(7) Surplus credits, if not used to offset a credit shortfall may be banked by the manufacturer for use in future model years, or traded, given the restriction that the credits have an expiration date of five model years after the year in which the credits are earned. For example, credits earned in model year 2014 may be utilized through model year 2019.

(8) Credit shortfalls must be offset by an available credit surplus within three model years after the shortfall was incurred. If the shortfall cannot be offset, the manufacturer is liable for civil penalties as discussed in § 535.9.

(9) Calculate the value of credits generated in a model year for this regulatory subcategory or averaging set using the following equation:

$$\text{Total MY Fleet FCC (gallons)} = (\text{Std} - \text{Act}) \times (\text{Volume}) \times (\text{UL}) \times (10^2)$$

Where:

Std = Fleet average fuel consumption standard (gal/100 mile).

Act = Fleet average actual fuel consumption value (gal/100 mile).

Volume = the total U.S.-directed production of vehicles in the regulatory subcategory.

UL = the useful life for the regulatory subcategory (120,000 miles).

(10) If a manufacturer generates credits from its fleet of advanced technology vehicles in accordance with 535.7(e)(1) a multiplier of 1.5 can be used. Advanced technology credits can be used in other averaging sets different from the one they are generated within with the following restrictions.

(i) The maximum amount of credits a manufacturer may bring into the service class group that contains the heavy-duty pickup and van averaging set is 5.89 Mgallons (for advanced technology credits based upon compression ignition engines) or 6.76 Mgallons (for advanced technology credits based upon spark-ignition engines) per model year as specified in 40 CFR 1037.104.

(ii) The limit specified in paragraph (b)(10)(i) of this section does not limit the amount of advanced technology credits that can be used across averaging sets within the same service class group.

(11) If a manufacturer chooses to generate CO₂ emission credits under EPA provisions of 40 CFR 1037.150(a), it may also voluntarily generate early credits under the NHTSA fuel consumption program. Fuel consumption credits may be generated for vehicles certified in model year 2013 to the model year 2014 standards in § 535.5(a). To do so a manufacturer must certify its entire U.S. directed production volume of vehicles in its fleet. The same production volume restrictions specified in 40 CFR 1037.150(a)(2) relating to when test groups are certified apply to the NHTSA early credit provisions. Credits are calculated as specified in paragraph (b)(9) of this section relative to the fleet standard that would apply for model year 2014 using the model year 2013 production volumes. Surplus credits generated under this paragraph are available credits for banking or trading. Credit deficits for an averaging set prior to model year 2014 do not carry over to model year 2014. These credits may be used to show compliance with the standards of this part for 2014 and later model years. Once a manufacturer opts into the NHTSA program they must stay in the program for all of the optional model years and remain standardized with the same implementation approach being followed to meet the EPA CO₂ emission program.

(c) *ABT provisions for vocational vehicles and tractors.* (1) The two regulatory categories for vocational vehicles and tractors consist of 12 regulatory subcategory as follows:

(i) Vocational vehicles with a GVWR up to and including 19,500 pounds (Light Heavy-Duty (LHD));

(ii) Vocational vehicles with a GVWR above 19,500 pounds and no greater than 33,000 pounds (Medium Heavy-Duty (MHD));

(iii) Vocational vehicles with a GVWR over 33,000 pounds (Heavy Heavy-Duty (HHD));

(iv) Low roof day cab tractors with a GVWR above 26,000 pounds and no greater than 33,000 pounds;

(v) Mid roof day cab tractors with a GVWR above 26,000 pounds and no greater than 33,000 pounds;

(vi) High roof day cab tractors with a GVWR above 26,000 pounds and no greater than 33,000 pounds;

- (vii) Low roof day cab tractors with a GVWR above 33,000 pounds;
 - (viii) Mid roof day cab tractors with a GVWR above 33,000 pounds;
 - (ix) High roof day cab tractors with a GVWR above 33,000 pounds;
 - (x) Low roof sleeper cab tractors with a GVWR above 33,000 pounds;
 - (xi) Mid roof sleeper cab tractors with a GVWR above 33,000 pounds; and
 - (xii) High roof sleeper cab tractors with a GVWR above 33,000 pounds.
- (2) The 12 regulatory subcategories consist of three averaging sets as follows:
- (i) Vocational light-heavy vehicles at or below 19,500 pounds GVWR.
 - (ii) Vocational and tractor medium-heavy vehicles above 19,500 pounds GVWR but at or below 33,000 pounds GVWR.
 - (iii) Vocational and tractor heavy-heavy vehicles above 33,000 pounds GVWR.
- (3) Manufacturers that manufacture vehicles within either of these two vehicle categories, in one or more of the regulatory subcategories, shall calculate a total credit balance within each applicable averaging set at the end of each model year based upon final production volumes and the sum of the credit balances derived for each of the vehicle family groups within each averaging set.
- (4) Each designated vehicle family group has a "family emissions limit" (FEL) which is compared to the associated regulatory subcategory standard. A FEL that falls below the regulatory subcategory standard creates "positive credits," while fuel consumption level of a family group above the standard creates a "credit shortfall."
- (5) Manufacturers shall sum all shortfalls and surplus credits for each vehicle family within each applicable averaging set to obtain the total credit balance for the model year before rounding. The sum of fuel consumptions credits must be rounded to the nearest gallon.
- (6) Surplus credits, other than advanced technology credits, generated and calculated within this averaging set may only be used to offset a credit shortfall in this same averaging set.
- (7) Advanced technology credits can be used to offset a credit shortfall in

this same averaging set or other averaging sets. However, a manufacturer must first apply advanced technology credits to any deficits in the same averaging set before applying them to other averaging sets.

(8) Surplus credits, other than advanced technology credits, may be traded among credit holders but must stay within the same averaging set. Advanced technology credits can be traded across averaging sets.

(9) Surplus credits, if not used to offset a credit shortfall may be banked by the manufacturer for use in future model years, or traded, given the restriction that the credits have an expiration date of five model years after the year in which the credits are earned. For example, credits earned in model year 2014 may be utilized through model year 2019.

(10) Credit shortfalls must be offset by an available credit surplus within three model years after the shortfall was incurred. If the shortfall cannot be offset, the manufacturer is liable for civil penalties as discussed in §535.9.

(11) The value of credits generated in a model year is calculated as follows:

- (i) Calculate the value of credits generated in a model year for each vehicle family within an averaging set using the following equation:

$$\text{Vehicle Family FCC (gallons)} = (\text{Std} - \text{FEL}) \times (\text{Payload}) \times (\text{Volume}) \times (\text{UL}) \times (10^3)$$

Where:

- Std = the standard for the respective vehicle family regulatory subcategory (gal/1000 ton-mile).
- FEL = family emissions limit for the vehicle family (gal/1000 ton-mile).
- Payload = the prescribed payload in tons for each regulatory subcategory as shown in the following table:

Regulatory subcategory	Payload (Tons)
LHD Vocational Vehicles	2.85
MHD Vocational Vehicles	5.60
HHD Vocational Vehicles	7.5
Class 7 Tractor	12.50
Class 8 Tractor	19.00

- Volume = the number of U.S.-directed production volume of vehicles in the corresponding vehicle family.
- UL = the useful life for the regulatory subcategory (miles) as shown in the following table:

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Regulatory subcategory	UL (miles)
LHD Vocational Vehicles	110,000
MHD Vocational Vehicles	185,000
HHD Vocational Vehicles	435,000
Class 7 Tractor	185,000
Class 8 Tractor	435,000

(ii) Calculate the value of credits generated in a model year for each vehicle family for advanced technology vehicles within an averaging set using the equation above, the guidelines provided in paragraph (e)(1)(i) of this section, and the 1.5 credit multiplier.

(iii) Calculate the total credits generated in a model year for each averaging set using the following equation:

$$\text{Total averaging set MY credits} = \Sigma \text{ Vehicle family credits within each average set}$$

(12) If a manufacturer chooses to generate CO₂ emission credits under EPA provisions of 40 CFR 1037.150(a), it may also voluntarily generate early credits under the NHTSA fuel consumption program as follows:

(i) Fuel consumption credits may be generated for vehicles certified in model year 2013 to the model year 2014 standards in § 535.5(b) and (c). To do so a manufacturer must certify its entire U.S. directed production volume of vehicles. The same production volume restrictions specified in 40 CFR 1037.150(a)(1) relating to when test groups are certified apply to the NHTSA early credit provisions. Credits are calculated as specified in paragraph (c)(11) of this section relative to the standards that would apply for model year 2014. Surplus credits generated under this paragraph (c)(12) may be increased by a factor of 1.5 for determining total available credits for banking or trading. For example, if you have 10 gallons of surplus credits for model year 2013, you may bank 15 gallons of credits. Credit deficits for an averaging set prior to model year 2014 do not carry over to model year 2014. These credits may be used to show compliance with the standards of this part for 2014 and later model years. Once a manufacturer opts into the NHTSA program they must stay in the program for all of the optional model years and remain standardized with the same implementation approach being

followed to meet the EPA CO₂ emission program.

(ii) A tractor manufacturer may generate fuel consumption credits for the number of additional SmartWay designated tractors (relative to its MY 2012 production), provided that credits are not generated for those vehicles under paragraph (c)(12)(i) of this section. Calculate credits for each regulatory sub-category relative to the standard that would apply in model year 2014 using the equations in paragraph (c)(11) of this section. Use a production volume equal to the number of verified model year 2013 SmartWay tractors minus the number of verified model year 2012 SmartWay tractors. A manufacturer may bank credits equal to the surplus credits generated under this paragraph multiplied by 1.50. A manufacturer's 2012 and 2013 model years must be equivalent in length. Once a manufacturer opts into the NHTSA program they must stay in the program for all of the optional model years and remain standardized with the same implementation approach being followed to meet the EPA CO₂ emission program.

(13) If a manufacturer generates credits from vehicles certified for advanced technology in accordance with § 535.7(e)(1), a multiplier of 1.5 can be used, but this multiplier cannot be used on the same credits for which the early credit multiplier is used. Advanced technology credits can be used in other averaging sets different from the one they are generated, but the maximum amount of credits a manufacturer may bring into a service class group that contains the vocational vehicle and tractor averaging sets is 5.89 Mgallons (for advanced technology credits based upon compression ignition engines) or 6.76 Mgallons (for advanced technology credits based upon spark-ignition engines) per model year as specified in 40 CFR 1037.740. However, this does not limit the amount of advanced technology credits that can be used across averaging sets within the same service class group.

(d) *ABT provisions for heavy-duty engines.* (1) Heavy-duty engines consist of six regulatory subcategories as follows:

(i) Spark-ignition engines.

(ii) Light heavy-duty compression-ignition engines.

(iii) Medium heavy-duty vocational compression-ignition engines.

(iv) Medium heavy-duty tractor compression-ignition engines.

(v) Heavy heavy-duty vocational compression-ignition engines.

(vi) Heavy heavy-duty tractor compression-ignition engines.

(2) The six regulatory subcategories consist of four averaging sets as follows:

(i) Compression-ignition light heavy-duty engines.

(ii) Compression-ignition medium heavy-duty engines.

(iii) Compression-ignition heavy heavy-duty engines.

(iv) Spark-ignition engines.

(3) Manufacturers that manufacture engines within one or more of the regulatory subcategories, shall calculate a total credit balance within each applicable averaging set at the end of each model year based upon final production volumes and the sum of the credit balances derived for each of the engine families within each averaging set.

(4) Each designated engine family has a "family certification level" (FCL) which is compared to the associated regulatory subcategory standard. A FCL that falls below the regulatory subcategory standard creates "positive credits," while fuel consumption level of a family group above the standard creates a "credit shortfall."

(5) Manufacturers shall sum all surplus and shortfall credits for each engine family within the applicable averaging set to obtain the total credit balance for the model year before rounding. Round the sum of fuel consumptions credits to the nearest gallon.

(6) Surplus credits, other than advanced technology credits, generated and calculated within this averaging set may only be used to offset a credit shortfall in this same averaging set.

(7) Advanced technology credits can be used to offset a credit shortfall in this same averaging set or other averaging sets. However, a manufacturer must first apply advanced technology credits to any deficits in the same averaging set before applying them to other averaging sets.

(8) Surplus credits, other than advanced technology credits, may be traded among credit holders but must stay within the same averaging set. Advanced technology credits can be traded across averaging sets.

(9) Surplus credits, if not used to offset a credit shortfall may be banked by the manufacturer for use in future model years, or traded, given the restriction that the credits have an expiration date of five model years after the year in which the credits are earned. For example, credits earned in model year 2014 may be utilized through model year 2019.

(10) Credit shortfalls must be offset by available surplus credits within three model years after shortfall was incurred. If the shortfall cannot be offset, the manufacturer is liable for civil penalties as discussed in § 535.9.

(11) The value of credits generated in a model year is calculated as follows:

(i) The value of credits generated in a model year for each engine family within a regulatory subcategory equals

$$\text{Engine Family FCC (gallons)} = (\text{Std} - \text{FCL}) \times (\text{CF}) \times (\text{Volume}) \times (\text{UL}) \times (10^2)$$

Where:

Std = the standard for the respective engine regulatory subcategory (gal/100 bhp-hr).

FCL = family certification level for the engine family (gal/100 bhp-hr).

CF = a transient cycle conversion factor in bhp-hr/mile which is the integrated total cycle brake horsepower-hour divided by the equivalent mileage of the applicable test cycle. For spark-ignition heavy-duty engines, the equivalent mileage is 6.3 miles. For compression-ignition heavy-duty engines, the equivalent mileage is 6.5 miles.

Volume = the number of engines in the corresponding engine family.

UL = the useful life of the given engine family (miles) as shown in the following table:

Regulatory subcategory	UL (miles)
Class 2b-5 Vocational Vehicles, Spark Ignited (SI), and Light Heavy-Duty Diesel Engines	110,000
Class 6-7 Vocational Vehicles and Medium Heavy-Duty Diesel Engines	185,000
Class 8 Vocational Vehicles and Heavy Heavy-Duty Diesel Engines	435,000
Class 7 Tractors and Medium Heavy-Duty Diesel Engines	185,000
Class 8 Tractors and Heavy Heavy-Duty Diesel Engines	435,000

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(ii) Calculate the total credits generated in a model year for each averaging set using the following equation: Total averaging set MY credits = Σ Engine family credits within each averaging set

(12) The provisions of this section apply to manufacturers utilizing the compression-ignition engine voluntary alternate standard provisions specified in § 535.5(d)(4) as follows.

(i) Manufacturers may not certify engines to the alternate standards if they are part of an averaging set in which they carry a balance of banked credits. For purposes of this section, manufacturers are deemed to carry credits in an averaging set if they carry credits from advanced technology that are allowed to be used in that averaging set.

(ii) Manufacturers may not bank fuel consumption credits for any engine family in the same averaging set and model year in which it certifies engines to the alternate standards. This means a manufacturer may not bank advanced technology credits in a model year it certifies any engines to the alternate standards.

(iii) Note that the provisions of paragraph (d)(10) of this section apply with respect to credit deficits generated while utilizing alternate standards.

(13) Where a manufacturer has chosen to comply with the EPA alternative compression ignition engine phase-in standard provisions in 40 CFR 1036.150(e), and has optionally decided to follow the same path under the NHTSA fuel consumption program, it must certify all of its model year 2013 compression-ignition engines within a given averaging set to the applicable alternative standards in § 535.5(d)(5). Engines certified to these standards are not eligible for early credits under paragraph (d)(14) of this section. Credits are calculated using the same equation provided in paragraph (d)(11) of this section.

(14) If a manufacturer chooses to generate early CO₂ emission credits under EPA provisions of 40 CFR 1036.150, it may also voluntarily generate early credits under the NHTSA fuel consumption program. Fuel consumption credits may be generated for engines certified in model year 2013 (2015 for spark-ignition engines) to the stand-

ards in § 535.5(d). To do so a manufacturer must certify its entire U. S.-directed production volume of engines except as specified in 40 CFR 1036.150(a)(2). Credits are calculated as specified in paragraph (d)(11) of this section relative to the standards that would apply for model year 2014 (2016 for spark-ignition engines). Surplus credits generated under this paragraph may be increased by a factor of 1.5 for determining total available credits for banking or trading. For example, if you have 10 gallons of surplus credits for model year 2013, you may bank 15 gallons of credits. Credit deficits for an averaging set prior to model year 2014 (2016 for spark-ignition engines) do not carry over to model year 2014 (2016 for spark-ignition engines). These credits may be used to show compliance with the standards of this part for 2014 and later model years. Once a manufacturer opts into the NHTSA program they must stay in the program for all of the optional model years and remain standardized with the same implementation approach being followed to meet the EPA CO₂ emission program.

(15) If a manufacturer generates credits from engines certified for advanced technology in accordance with § 535.7(e)(1), a multiplier of 1.5 can be used, but this multiplier cannot be used on the same credits for which the early credit multiplier is used. Advanced technology credits can be used in other averaging sets different from the one they are generated, but the maximum amount of credits a manufacturer may bring into a service class group that contains the heavy-duty engine averaging sets is 5.89 Mgallons (for advanced technology credits based upon compression ignition engines) or 6.76 Mgallons (for advanced technology credits based upon spark-ignition engines) per model year as specified in 40 CFR 1036.740. However, this does not limit the amount of advanced technology credits that can be used across averaging sets within the same service class group.

(e) *Additional credit provisions.* (1) *Advanced technology credits.* Manufacturers of heavy-duty pickup trucks and vans, vocational vehicles, tractors and

associated engines showing improvements in CO₂ emissions and fuel consumption using hybrid vehicles with regenerative braking, vehicles equipped with Rankine-cycle engines, electric vehicles and fuel cell vehicles are eligible for advanced technology credits. Advanced technology credits may be increased by a 1.5 multiplier and applied to any heavy-duty vehicle or engine subcategory consistent with sound engineering judgment.

(i) *Heavy-duty vehicles.* (A) For advanced technology system (hybrid vehicles with regenerative braking, vehicles equipped with Rankine-cycle engines and fuel cell vehicles), calculate the advanced technology credits as follows:

(1) Measure the effectiveness of the advanced system by chassis testing a vehicle equipped with the advanced system and an equivalent conventional system in accordance with 40 CFR 1037.615.

(2) For purposes of this paragraph (e), a conventional vehicle is considered to be equivalent if it has the same footprint, intended vehicle service class, aerodynamic drag, and other relevant factors not directly related to the advanced system powertrain. If there is no equivalent vehicle, the manufacturer may create and test a prototype equivalent vehicle. The conventional vehicle is considered Vehicle A, and the advanced technology vehicle is considered Vehicle B.

(3) The benefit associated with the advanced system for fuel consumption is determined from the weighted fuel consumption results from the chassis tests of each vehicle using the following equation:

$$\text{Benefit (gallon/1,000 ton mile)} = \text{Improvement Factor} \times \text{GEM Fuel Consumption Result}_B$$

Where:

$$\text{Improvement Factor} = \frac{(\text{Fuel Consumption}_A - \text{Fuel Consumption}_B)}{(\text{Fuel Consumption}_A)}$$

Fuel Consumption Rates A and B are the gallons per 1,000 ton-mile of the conventional and advanced vehicles, respectively, as measured under the test procedures specified by EPA.

GEM Fuel Consumption Result B is the estimated gallons per 1,000 ton-mile rate resulting from emission modeling of the

advanced vehicle as specified in 40 CFR 1037.520 and § 535.6(b).

(4) Calculate the benefit in credits using the equation in paragraph (c)(11) of this section and replacing the term (Std-FEL) with the benefit.

(B) For electric vehicles calculate the fuel consumption credits using an FEL of 0 g/1000ton-mile.

(ii) *Heavy-duty engines.* (A) This section specifies how to generate advanced technology-specific fuel consumption credits for hybrid powertrains that include energy storage systems and regenerative braking (including regenerative engine braking) and for engines that include Rankine-cycle (or other bottoming cycle) exhaust energy recovery systems.

(1) Pre-transmission hybrid powertrains are those engine systems that include features that recover and store energy during engine motoring operation but not from the vehicle wheels. These powertrains are tested using the hybrid engine test procedures of 40 CFR part 1065 or using the post-transmission test procedures.

(2) Post-transmission hybrid powertrains are those powertrains that include features that recover and store energy from braking at the vehicle wheels. These powertrains are tested by simulating the chassis test procedure applicable for hybrid vehicles under 40 CFR 1037.550.

(3) Test engines that include Rankine-cycle exhaust energy recovery systems according to the test procedures specified in 40 CFR part 1036, subpart F, unless EPA approves the manufacturer's alternate procedures.

(B) Calculate credits as specified in paragraph (c) of this section. Credits generated from engines and powertrains certified under this section may be used in other averaging sets as described in 40 CFR 1036.740(d).

(2) *Innovative technology credits.* This provision allows engine and vehicle manufacturers to generate CO₂ emission credits consistent with the provisions of 40 CFR 1036.610 (for engines), 40 CFR 1037.104(d)(13) (for heavy-duty pickup trucks and vans) and 40 CFR 1037.610 (for vocational vehicles and tractors) for introducing innovative technology in heavy-duty engines and vehicles for reducing greenhouse gas

emissions and fuel consumption. Upon identification and approval from EPA of a manufacturer seeking to obtain innovative technology credits in a given model year, NHTSA may adopt an equivalent amount of fuel consumption credits into its program. Such credits must remain within the same regulatory subcategory in which the credits were generated. NHTSA will adopt these fuel consumption credits depending upon whether:

- (i) The technology has a direct impact upon reducing fuel consumption performance;
- (ii) The manufacturer has provided sufficient information to make sound engineering judgments on the impact of the technology in reducing fuel consumption performance; and
- (iii) Credits will be accepted on a one-for-one basis expressed in terms of gallons.

§ 535.8 Reporting requirements.

(a) *General requirements.* Manufacturers producing heavy-duty vehicles and engines applicable to fuel consumption standards in § 535.5, for each given model year, must submit the required information as specified in paragraphs (b) through (h) of this section.

(1) The information required by this part must be submitted by the deadlines specified in this section and must be based upon all the information and data available to the manufacturer 30 days before submitting information.

(2) Manufacturers must submit information electronically through the EPA database system as the single point of entry for all information required for this national program and both agencies will have access to the information. The format for the required information is specified by EPA.

(3) If by model year 2012 the agencies are not prepared to receive information through the EPA database system, manufacturers are required to submit information to EPA using an approved information format. A manufacturer can use a different format, if it sends EPA a written request with justification for a waiver.

(b) *Pre-model year reports.* Manufacturers producing heavy-duty pickup trucks and vans must submit reports in advance of the model year providing

early estimates demonstrating how their fleet(s) would comply with GHG emissions and fuel consumption standards. Note, the agencies understand that early model year reports contain estimates that may change over the course of a model year and that compliance information manufacturers submit prior to the beginning of a new model year may not represent the final compliance outcome. The agencies view the necessity for requiring early model reports as a manufacturer's good faith projection for demonstrating compliance with emission and fuel consumption standards.

(1) *Report deadlines.* For model years 2013 and later, manufacturer of heavy-duty pickup trucks and vans complying with voluntary and mandatory standards must submit a pre-model year report for the given model year as early as the date of the manufacturer's annual certification preview meeting with EPA and NHTSA, or prior to submitting its first application for a certificate of conformity to EPA in accordance with 40 CFR 1037.104(d). For example, a manufacturer choosing to comply in model year 2014 could submit its pre-model year report during its precertification meeting which could occur before January 2, 2013, or could provide its pre-model year report any time prior to submitting its first application for certification for the given model year.

(2) *Contents.* Each pre-model year report must be submitted including the following information for each model year.

(i) A list of each unique subconfiguration in the manufacturer's fleet describing the make and model designations, attribute based-values (*i.e.*, GVWR, GCWR, Curb Weight and drive configurations) and standards;

(ii) The emission and fuel consumption fleet average standard derived from the unique vehicle configurations;

(iii) The estimated vehicle configuration, test group and fleet production volumes;

(iv) The expected emissions and fuel consumption test group results and fleet average performance;

(v) If complying with MY 2013 fuel consumption standards, a statement must be provided declaring that the

manufacturer is voluntarily choosing to comply early with the EPA and NHTSA programs. The manufacturers must also acknowledge that once selected, the decision cannot be reversed and the manufacturer will continue to comply with the fuel consumption standards for subsequent model years for all the vehicles it manufactures in each regulatory category for a given model year;

(vi) If complying with MYs 2014, 2015 or 2016 fuel consumption standards, a statement must be provided declaring whether the manufacturer will use fixed or increasing standards in accordance with § 535.5(a). The manufacturer must also acknowledge that once selected, the decision cannot be reversed and the manufacturer must continue to comply with the same alternative for subsequent model years for all the vehicles it manufactures in each regulatory category for a given model year;

(vii) If complying with MYs 2014 or 2015 fuel consumption standards, a statement must be provided declaring that the manufacturer is voluntarily choosing to comply with NHTSA's voluntary fuel consumption standards in accordance with § 535.5(a)(4). The manufacturers must also acknowledge that once selected, the decision cannot be reversed and the manufacturer will continue to comply with the fuel consumption standards for subsequent model years for all the vehicles it manufactures in each regulatory category for a given model year;

(viii) The list of Class 2b and 3 incomplete vehicles (cab-complete or chassis complete vehicles) and the method used to certify these vehicles as complete pickups and vans identifying the most similar complete sister- or other complete vehicles used to derive the target standards and performance test results;

(ix) The list of Class 4 and 5 incomplete and complete vehicles and the method use to certify these vehicles as complete pickups and vans identifying the most similar complete or sister vehicles used to derive the target standards and performance test results;

(x) List of loose engines included in the heavy-duty pickup and van category and the list of vehicles used to

derive target standards and performance test results;

(xi) Copy of any notices a vehicle manufacturer sends to the engine manufacturer to notify the engine manufacturers that their engines are subject to emissions and fuel consumption standards and that it intends to use their engines in excluded vehicles;

(xii) A credit plan identifying the manufacturers estimated credit balances, planned credit flexibilities (*i.e.*, credit balances, planned credit trading, innovative, advanced and early credits and *etc.*) and if needed a credit deficit plan demonstrating how it plans to resolve any credit deficits that might occur for a model year within a period of up to three model years after that deficit has occurred; and

(xiii) The supplemental information specified in paragraph (h) of this section. [Note: NHTSA may also ask a manufacturer to provide additional information if necessary to verify compliance with the fuel consumption requirements of this regulation.]

(c) *Applications for certificate of conformity.* Manufacturers producing vocational vehicles, tractors and heavy-duty engines are required to submit applications for certificates of conformity to EPA in accordance with 40 CFR 1036.205 and 1037.205 in advance of introducing vehicles for commercial sale. Applications contain early model year information demonstrating how manufacturers plan to comply with GHG emissions. For model years 2013 and later, manufacturers of vocational vehicles, tractors and engine complying with NHTSA's voluntary and mandatory standards must submit applications for certificates of conformity in accordance through the EPA database including both GHG emissions and fuel consumption information for each given model year.

(1) *Submission deadlines.* Applications are primarily submitted in advance of the given model year to EPA but cannot be submitted any later than December 31 of the given model year.

(2) *Contents.* Each application for certificates of conformity submitted to EPA must include the following equivalent fuel consumption.

(i) Equivalent fuel consumption values for emissions CO₂ FCLs values used

to certify each engine family in accordance with 40 CFR 1036.205(e). This provision applies only to manufacturers producing heavy-duty engines.

(ii) Equivalent fuel consumption values for emission CO₂ data engines used to comply with emission standards in 40 CFR 1036.108. This provision applies only to manufacturers producing heavy-duty engines.

(iii) Equivalent fuel consumption values for emissions CO₂ FELs values used to certify each vehicle families or sub-families in accordance with 40 CFR 1037.205(k). This provision applies only to manufacturers producing vocational vehicles and tractors.

(iv) Report modeling results for ten configurations in terms of CO₂ emissions and equivalent fuel consumption results in accordance with 40 CFR 1037.205(o). Include modeling inputs and detailed descriptions of how they were derived. This provision applies only to manufacturers producing vocational vehicles and tractors.

(3) *Additional supplemental information.* Manufacturers are required to submit additional information as specified in paragraph (h) of this section for the NHTSA program before or at the same time it submits its first application for a certificate of conformity to EPA. Under limited conditions, NHTSA may also ask a manufacturer to provide additional information directly to the Administrator if necessary to verify the fuel consumption requirements of this regulation.

(d) *End-of-the-year-report.* Both manufacturers participating and not participating in the ABT program are required to submit year end reports; end-of-the-year (EOY) reports in accordance with 40 CFR 1036.730 and 1037.730. The EOY reports are used to review a manufacturer's preliminary final estimates and to identify manufacturers that might have a credit deficit for the given model year. For model years 2013 and later, heavy-duty vehicle and engine manufacturers complying with NHTSA's voluntary and mandatory standards must submit EOY reports through the EPA database including both GHG emissions and fuel consumption information for each given model year.

(1) *Report deadlines.* For model year 2013 and later, heavy-duty vehicle and engine manufacturers complying with NHTSA voluntary and mandatory standards must submit EOY reports through the EPA database including both GHG emissions and fuel consumption information within 90 days after the end of the given model year and no later than April 1 of the next calendar year. For example, the EOY report for model year 2014 must be submitted no later than April 1, 2015.

(i) If a manufacturer expects differences in the information reported between the EOY and the final year report specified in 40 CFR 1036.730 and 1037.730, it must provide the most up-to-date fuel consumption projections in its EOY report and identify the information as preliminary.

(ii) If the manufacturer cannot provide any of the required fuel consumption information, it must state the specific reason for the insufficiency and identify the additional testing needed or explain what analytical methods are believed by the manufacturer will be necessary to eliminate the insufficiency and certify that the results will be available for the final report.

(2) *Contents.* Each EOY report must be submitted including the following fuel consumption information for each model year.

(i) Engine and vehicle family designations and averaging sets.

(ii) Engine and vehicle regulatory subcategory and fuel consumption standards including any alternative standards used.

(iii) Engine and vehicle family FCLs and FELs in terms of fuel consumption.

(iv) Production volumes for engines and vehicles.

(v) A credit plan (for manufacturers participating in the ABT program) identifying the manufacturers actual fuel consumption credit balances, credit flexibilities, credit trades and a credit deficit plan if needed demonstrating how it plans to resolve any credit deficits that might occur for a model year within a period of up to three model years after that deficit has occurred

(vi) A plan describing the vocational vehicles and vocational tractors that

were exempted as heavy-duty off-road vehicles.

(vii) A final plan describing any advanced technology engines or vehicles including alternative fueled vehicles that were produced for the model year identifying the approaches used to terminate compliance and the production volumes.

(viii) A final list of each unique sub-configuration included in a manufacturer's fleet of heavy-duty pickup trucks and vans describing the designations, attribute based-values (GVWR, GCWR, Curb Weight and drive configurations) and standards. This provision applies only to manufacturers producing heavy-duty pickup trucks and vans.

(ix) The final fuel consumption fleet average standard derived from the unique vehicle configurations. This provision applies only to manufacturers producing heavy-duty pickup trucks and vans.

(x) The preliminary final subconfiguration and test group production volumes. This provision applies only to manufacturers producing heavy-duty pickup trucks and vans.

(xi) The preliminary final fuel consumption test group results and fleet average performance. This provision applies only to manufacturers producing heavy-duty pickup trucks and vans.

(xii) Under limited conditions, NHTSA may also ask a manufacturer to provide additional information directly to the Administrator if necessary to verify the fuel consumption requirements of this part.

(e) *Final reports.* Both manufacturers participating and not participating in the ABT program are required to submit year end final reports in accordance with 40 CFR 1036.730 and 1037.730. The final reports are used to review a manufacturer's final data and to identify manufacturers that might have a credit deficit for the given model year. For model years 2013 and later, heavy-duty vehicle and engine manufacturers complying with NHTSA's voluntary and mandatory standards must submit final reports through the EPA database including both GHG emissions and fuel consumption information for each given model year.

(1) *Report deadlines.* For model year 2013 and later, heavy-duty vehicle and engine manufacturers complying with NHTSA voluntary and mandatory standards must submit final reports through the EPA database including both GHG emissions and fuel consumption information within 270 days after the end of the given model year and no later than October 1 of the next calendar year. For example, the final reports for model year 2014 must be submitted no later than October 1, 2015.

(2) *Contents.* Each final report must be submitted including the following fuel consumption information for each model year.

(i) Final engine and vehicle family designations and averaging sets.

(ii) Final engine and vehicle fuel consumption standards including any alternative standards used.

(iii) Final engine and vehicle family FCLs and FELs in terms of fuel consumption.

(iv) Final production volumes for engines and vehicles.

(v) A final credit plan identifying the manufacturers actual fuel consumption credit balances, credit flexibilities, credit trades and a credit deficit plan if needed demonstrating how it plans to resolve any credit deficits that might occur for a model year within a period of up to three model years after that deficit has occurred

(vi) A final plan describing the vocational vehicles and vocational tractors that were exempted as heavy-duty off-road vehicles.

(vii) A final plan describing any advanced technology engines or vehicles including alternative fueled vehicles that were produced for the model year identifying the approaches used to terminate compliance and the production volumes.

(viii) A final list of each unique sub-configuration included in a manufacturer's fleet of heavy-duty pickup trucks and vans describing the designations, attribute based-values (GVWR, GCWR, Curb Weight and drive configurations) and standards. This provision applies only to manufacturers producing heavy-duty pickup trucks and vans.

(ix) The final fuel consumption fleet average standard derived from the

unique vehicle configurations. This provision applies only to manufacturers producing heavy-duty pickup trucks and vans.

(x) The final subconfiguration and test group production volumes. This provision applies only to manufacturers producing heavy-duty pickup trucks and vans.

(xi) The final fuel consumption test group results and fleet average performance. This provision applies only to manufacturers producing heavy-duty pickup trucks and vans.

(xii) Under limited conditions, NHTSA may also ask a manufacturer to provide additional information directly to the Administrator if necessary to verify the fuel consumption requirements of this regulation.

(f) *Amendments to applications for certification.* At any time, a manufacturer modifies an application for certification in accordance with 40 CFR 1036.225 and 1037.225, it must submit GHG emissions changes with equivalent fuel consumption values for the information required in paragraphs (b) through (e) and (h) of this section.

(g) *Confidential information.* Manufacturers must submit a request for confidentiality with each electronic submission specifying any part of the for information or data in a report that it believes should be withheld from public disclosure as trade secret or other confidential business information. Information submitted to EPA should follow EPA guidelines for treatment of confidentiality. Confidential information submitted to NHTSA shall be treated according to paragraph (g)(1) of this section. For any information or data requested by the manufacturer to be withheld under 5 U.S.C. 552(b)(4) and 15 U.S.C. 2005(d)(1), the manufacturer shall provide evidence in its request for confidentiality to justify that:

(1) The item is within the scope of 5 U.S.C. 552(b)(4) and 15 U.S.C. 2005(d)(1);

(2) The disclosure of such an item would result in significant competitive damage;

(3) The period during which the item must be withheld to avoid that damage; and

(4) How earlier disclosure would result in that damage.

(h) *Additional required information.* The following additional information is required to be submitted through the EPA database. NHTSA reserves the right to ask a manufacturer to provide additional information if necessary to verify the fuel consumption requirements of this regulation.

(1) *Small business exemptions.* Vehicles and engines produced by small business manufacturers meeting the criteria in 13 CFR 121.201 are exempted from the requirements of this part. Qualifying small business manufacturers must notify the EPA and NHTSA Administrators before importing or introducing into U.S. commerce exempted vehicles or engines. This notification must include a description of the manufacturer's qualification as a small business under 13 CFR 121.201 and must be submitted to EPA. The agencies may review a manufacturer's qualification as a small business manufacturer under 13 CFR 121.201.

(2) *Early introduction.* The provision applies to manufacturers seeking to comply early with the NHTSA's fuel consumption program prior to model year 2014. The manufacturer must send the request to EPA before submitting its first application for a certificate of conformity.

(3) *NHTSA voluntary compliance model years.* Manufacturers must submit a statement declaring whether the manufacturer chooses to comply voluntarily with NHTSA's fuel consumption standards for model years 2014 through 2015. The manufacturers must acknowledge that once selected, the decision cannot be reversed and the manufacturer will continue to comply with the fuel consumption standards for subsequent model years. The manufacturer must send the statement to EPA before submitting its first application for a certificate of conformity.

(4) *Alternative engine standards.* Manufacturers choosing to comply with the alternative engine standards must notify EPA and NHTSA of their choice and include in that notification a demonstration that it has exhausted all available credits and credit opportunities. The manufacturer must send the statement to EPA before submitting its EOY report.

(5) *Alternate phase-in.* Manufacturers choosing to comply with the alternative engine phase-in must notify EPA and NHTSA of their choice. The manufacturer must send the statement to EPA before submitting its first application for a certificate of conformity.

(6) *Off-road exclusion (tractors and vocational vehicles only).* (i) Vehicles intended to be used extensively in off-road environments such as forests, oil fields, and construction sites may be exempted without request from the requirements of this regulation as specified in 49 CFR 523.2 and §535.5(b). Within 90 days after the end of each model year, manufacturers must send EPA and NHTSA through the EPA database a report with the following information:

(A) A description of each excluded vehicle configuration, including an explanation of why it qualifies for this exclusion.

(B) The number of vehicles excluded for each vehicle configuration.

(ii) A manufacturer having an off-road vehicle failing to meet the criteria under the agencies' off-road exclusions will be allowed to submit a petition describing how and why their vehicles should qualify for exclusion. The process of petitioning for an exclusion is explained below. For each request, the manufacturer will be required to describe why it believes an exclusion is warranted and address the following factors which the agencies will consider in granting its petition:

(A) The agencies will provide an exclusion based on off road capability of the vehicle or if the vehicle is fitted with speed restricted tires. A manufacturer should explain which exclusion does its vehicle qualify under; and

(B) A manufacturer should verify if there are any comparable tires that exist in the market to carry out the desired application both on and off road for the subject vehicle(s) of the petition which have LLR values that would enable compliance with the standard.

(7) *Vocational tractor.* Tractors intended to be used as vocational tractors may comply with vocational vehicle standards in §535.5(b) of this regulation. Manufacturers classifying tractor as vocational tractors must provide a

description of how they meet the qualifications in their applications for certificates of conformity as specified in 40 CFR 1037.205.

(8) *Approval of alternate methods to determine drag coefficients (tractors only).* Manufacturers seeking to use alternative methods to determine aerodynamic drag coefficients must provide a request and gain approval by EPA. The manufacturer must send the request to EPA before submitting its first application for a certificate of conformity.

(9) *Innovative technology credits.* Manufacturers pursuing innovative technology credits must submit information to the agencies and may be subject to a public evaluation process in which the public would have opportunity for comment if not using a test procedure in accordance with 40 CFR 1037.610(c). Whether the approach involves on-road testing, modeling, or some other analytical approach, the manufacturer would be required to present a final methodology to EPA and NHTSA. EPA and NHTSA would approve the methodology and credits only if certain criteria were met. Baseline emissions and fuel consumption and control emissions and fuel consumption would need to be clearly demonstrated over a wide range of real world driving conditions and over a sufficient number of vehicles to address issues of uncertainty with the data. Data would need to be on a vehicle model-specific basis unless a manufacturer demonstrated model-specific data was not necessary. The agencies may publish a notice of availability in the FEDERAL REGISTER notifying the public of a manufacturer's proposed alternative off-cycle credit calculation methodology and provide opportunity for comment. Any notice will include details regarding the methodology, but not include any Confidential Business Information.

(10) *Credit trades.* If a manufacturer trades fuel consumption credits, it must send EPA a report within 90 days after the transaction, as follows:

(i) As the seller, the manufacturer must include the following information in its report:

(A) The corporate names of the buyer and any brokers.

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(B) A copy of any contracts related to the trade.

(C) The fleet, vehicle or engine families that generated fuel consumption credits for the trade, including the number of fuel consumption credits from each family.

(ii) As the buyer, the manufacturer or entity must include the following information in its report:

(A) The corporate names of the seller and any brokers.

(B) A copy of any contracts related to the trade.

(C) How the manufacturer or entity intends to use the fuel consumption credits, including the number of fuel consumption credits it intends to apply to each vehicle family (if known).

(i) *Public information.* Based upon information submitted by manufacturers and EPA, NHTSA will publish fuel consumption standards and performance results.

(j) *Information received from EPA.* NHTSA will receive information from EPA as specified in 40 CFR 1036.755 and 1037.755.

§ 535.9 Enforcement approach.

(a) *Compliance.* (1) NHTSA will assess compliance with fuel consumption standards each year, based upon EPA final verified data submitted to NHTSA for its heavy-duty vehicle fuel efficiency program established pursuant to 49 U.S.C. 32902(k). NHTSA may conduct verification testing throughout a given model year in order to validate data received from manufacturers and will discuss any potential issues with EPA and the manufacturer.

(2) Credit values in gallons are calculated based on the final CO₂ emissions and fuel consumption data submitted by manufacturers and verified/validated by EPA.

(3) NHTSA will verify a manufacturer's credit balance in each averaging set for each given model year. The average set balance is based upon the engines or vehicles performance above or below the applicable regulatory subcategory standards in each respective averaging set and any credits that are traded into or out of an averaging set during the model year.

(i) If the balance is positive, the manufacturer is designated as having a credit surplus.

(ii) If the balance is negative, the manufacturer is designated as having a credit deficit.

(4) NHTSA will provide written notification to the manufacturer that has a negative balance for any averaging set for each model year. The manufacturer will be required to confirm the negative balance and submit a plan indicating how it will allocate existing credits or earn, and/or acquire by trade credits, or else be liable for a civil penalty as determined in paragraph (b) of this section. The manufacturer must submit a plan within 60 days of receiving agency notification.

(5) Credit shortfall within an averaging set may be carried forward only three years, and if not offset by earned or traded credits, the manufacturer may be liable for a civil penalty as described in paragraph (b) of this section.

(6) Credit allocation plans received from a manufacturer will be reviewed and approved by NHTSA. NHTSA will approve a credit allocation plan unless it determines that the proposed credits are unavailable or that it is unlikely that the plan will result in the manufacturer earning sufficient credits to offset the subject credit shortfall. If a plan is approved, NHTSA will revise the respective manufacturer's credit account accordingly by identifying which existing or traded credits are being used to address the credit shortfall, or by identifying the manufacturer's plan to earn future credits for addressing the respective credit shortfall. If a plan is rejected, NHTSA will notify the respective manufacturer and request a revised plan. The manufacturer must submit a revised plan within 14 days of receiving agency notification. The agency will provide a manufacturer one opportunity to submit a revised credit allocation plan before it initiates civil penalty proceedings.

(7) For purposes of this regulation, NHTSA will treat the use of future credits for compliance, as through a credit allocation plan, as a deferral of civil penalties for non-compliance with an applicable fuel consumption standard.

(8) If NHTSA receives and approves a manufacturer's credit allocation plan to earn future credits within the following three model years in order to comply with regulatory obligations, NHTSA will defer levying civil penalties for non-compliance until the date(s) when the manufacturer's approved plan indicates that credits will be earned or acquired to achieve compliance, and upon receiving confirmed CO₂ emissions and fuel consumption data from EPA. If the manufacturer fails to acquire or earn sufficient credits by the plan dates, NHTSA will initiate civil penalty proceedings.

(9) In the event that NHTSA fails to receive or is unable to approve a plan for a non-compliant manufacturer due to insufficiency or untimeliness, NHTSA may initiate civil penalty proceedings.

(10) In the event that a manufacturer fails to report accurate fuel consumption data for vehicles or engines covered under this rule, noncompliance will be assumed until corrected by submission of the required data, and NHTSA may initiate civil penalty proceedings.

(b) *Civil penalties*—(1) *Generally*. NHTSA may assess a civil penalty for any violation of this part under 49 U.S.C. 32902(k). This section states the procedures for assessing civil penalties for violations of § 535.5. The provisions of 5 U.S.C. 554, 556, and 557 do not apply to any proceedings conducted pursuant to this section.

(2) *Initial determination of noncompliance*. An action for civil penalties is commenced by the execution of a Notice of Violation. A determination by NHTSA's Office of Enforcement of non-compliance with applicable fuel consumption standards utilizing the certified and reported CO₂ emissions and fuel consumption data provided by the Environmental Protection Agency as described in this part, and after considering all the flexibilities available under § 535.7, underlies a Notice of Violation. If NHTSA Enforcement determines that a manufacturer's averaging set of vehicles or engines fails to comply with the applicable fuel consumption standard(s) by generating a credit shortfall, the chassis, vehicle or engine

manufacturer, as relevant, shall be subject to a civil penalty.

(3) *Numbers of violations and maximum civil penalties*. Any violation shall constitute a separate violation with respect to each vehicle or engine within the applicable regulatory averaging set. The maximum civil penalty is not more than \$37,500.00 per vehicle or engine. The maximum civil penalty under this section for a related series of violations shall be determined by multiplying \$37,500.00 times the vehicle or engine production volume for the model year in question within the regulatory averaging set. NHTSA may adjust this civil penalty amount to account for inflation.

(4) *Factors for determining penalty amount*. In determining the amount of any civil penalty proposed to be assessed or assessed under this section, NHTSA shall take into account the gravity of the violation, the size of the violator's business, the violator's history of compliance with applicable fuel consumption standards, the actual fuel consumption performance related to the applicable standards, the estimated cost to comply with the regulation and applicable standards, the quantity of vehicles or engines not complying, and the effect of the penalty on the violator's ability to continue in business. The "estimated cost to comply with the regulation and applicable standards," will be used to ensure that penalties for non-compliance will not be less than the cost of compliance.

(5) *NHTSA enforcement report of determination of non-compliance*. (i) If NHTSA Enforcement determines that a violation has occurred, NHTSA Enforcement may prepare a report and send the report to the NHTSA Chief Counsel.

(ii) The NHTSA Chief Counsel will review the report prepared by NHTSA Enforcement to determine if there is sufficient information to establish a likely violation.

(iii) If the Chief Counsel determines that a violation has likely occurred, the Chief Counsel may issue a Notice of Violation to the party.

(iv) If the Chief Counsel issues a Notice of Violation, he or she will prepare a case file with recommended actions. A record of any prior violations by the

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same party shall be forwarded with the case file.

(6) *Notice of violation.* (i) The Notice of Violation will contain the following information:

(A) The name and address of the party;

(B) The alleged violation(s) and the applicable fuel consumption standard(s) violated;

(C) The amount of the proposed penalty and basis for that amount;

(D) The place to which, and the manner in which, payment is to be made;

(E) A statement that the party may decline the Notice of Violation and that if the Notice of Violation is declined within 30 days of the date shown on the Notice of Violation, the party has the right to a hearing, if requested within 30 days of the date shown on the Notice of Violation, prior to a final assessment of a penalty by a Hearing Officer; and

(F) A statement that failure to either pay the proposed penalty or to decline the Notice of Violation and request a hearing within 30 days of the date shown on the Notice of Violation will result in a finding of violation by default and that NHTSA will proceed with the civil penalty in the amount proposed on the Notice of Violation without processing the violation under the hearing procedures set forth in this subpart.

(ii) The Notice of Violation may be delivered to the party by:

(A) Mailing to the party (certified mail is not required);

(B) Use of an overnight or express courier service; or

(C) Facsimile transmission or electronic mail (with or without attachments) to the party or an employee of the party.

(iii) At any time after the Notice of Violation is issued, NHTSA and the party may agree to reach a compromise on the payment amount.

(iv) Once a penalty amount is paid in full, a finding of “resolved with payment” will be entered into the case file.

(v) If the party agrees to pay the proposed penalty, but has not made payment within 30 days of the date shown on the Notice of Violation, NHTSA will enter a finding of violation by default

in the matter and NHTSA will proceed with the civil penalty in the amount proposed on the Notice of Violation without processing the violation under the hearing procedures set forth in this subpart.

(vi) If within 30 days of the date shown on the Notice of Violation a party fails to pay the proposed penalty on the Notice of Violation, and fails to request a hearing, then NHTSA will enter a finding of violation by default in the case file, and will assess the civil penalty in the amount set forth on the Notice of Violation without processing the violation under the hearing procedures set forth in this subpart.

(vii) NHTSA’s order assessing the civil penalty following a party’s default is a final agency action.

(7) *Hearing Officer.* (i) If a party timely requests a hearing after receiving a Notice of Violation, a Hearing Officer shall hear the case.

(ii) The Hearing Officer will be appointed by the NHTSA Administrator, and is solely responsible for the case referred to him or her. The Hearing Officer shall have no other responsibility, direct or supervisory, for the investigation of cases referred for the assessment of civil penalties. The Hearing Officer shall have no duties related to the light-duty fuel economy or medium- and heavy-duty fuel efficiency programs.

(iii) The Hearing Officer decides each case on the basis of the information before him or her.

(8) *Initiation of action before the Hearing Officer.* (i) After the Hearing Officer receives the case file from the Chief Counsel, the Hearing Officer notifies the party in writing of:

(A) The date, time, and location of the hearing and whether the hearing will be conducted telephonically or at the DOT Headquarters building in Washington, DC;

(B) The right to be represented at all stages of the proceeding by counsel as set forth in paragraph (b)(9) of this section;

(C) The right to a free copy of all written evidence in the case file.

(ii) On the request of a party, or at the Hearing Officer’s direction, multiple proceedings may be consolidated

if at any time it appears that such consolidation is necessary or desirable.

(9) *Counsel.* A party has the right to be represented at all stages of the proceeding by counsel. A party electing to be represented by counsel must notify the Hearing Officer of this election in writing, after which point the Hearing Officer will direct all further communications to that counsel. A party represented by counsel bears all of its own attorneys' fees and costs.

(10) *Hearing location and costs.* (i) Unless the party requests a hearing at which the party appears before the Hearing Officer in Washington, DC, the hearing may be held telephonically. In Washington, DC, the hearing is held at the headquarters of the U.S. Department of Transportation.

(ii) The Hearing Officer may transfer a case to another Hearing Officer at a party's request or at the Hearing Officer's direction.

(iii) A party is responsible for all fees and costs (including attorneys' fees and costs, and costs that may be associated with travel or accommodations) associated with attending a hearing.

(11) *Hearing procedures.* (i) There is no right to discovery in any proceedings conducted pursuant to this subpart.

(ii) The material in the case file pertinent to the issues to be determined by the Hearing Officer is presented by the Chief Counsel or his or her designee.

(iii) The Chief Counsel may supplement the case file with information prior to the hearing. A copy of such information will be provided to the party no later than 3 business days before the hearing.

(iv) At the close of the Chief Counsel's presentation of evidence, the party has the right to examine, respond to and rebut material in the case file and other information presented by the Chief Counsel. In the case of witness testimony, both parties have the right of cross-examination.

(v) In receiving evidence, the Hearing Officer is not bound by strict rules of evidence. In evaluating the evidence presented, the Hearing Officer must give due consideration to the reliability and relevance of each item of evidence.

(vi) At the close of the party's presentation of evidence, the Hearing Officer may allow the introduction of rebuttal evidence that may be presented by the Chief Counsel.

(vii) The Hearing Officer may allow the party to respond to any rebuttal evidence submitted.

(viii) After the evidence in the case has been presented, the Chief Counsel and the party may present arguments on the issues in the case. The party may also request an opportunity to submit a written statement for consideration by the Hearing Officer and for further review. If granted, the Hearing Officer shall allow a reasonable time for submission of the statement and shall specify the date by which it must be received. If the statement is not received within the time prescribed, or within the limits of any extension of time granted by the Hearing Officer, it need not be considered by the Hearing Officer.

(ix) A verbatim transcript of the hearing will not normally be prepared. A party may, solely at its own expense, cause a verbatim transcript to be made. If a verbatim transcript is made, the party shall submit two copies to the Hearing Officer not later than 15 days after the hearing. The Hearing Officer shall include such transcript in the record.

(12) *Determination of violations and assessment of civil penalties.* (i) Not later than 30 days following the close of the hearing, the Hearing Officer shall issue a written decision on the Notice of Violation, based on the hearing record. This may be extended by the Hearing officer if the submissions by the Chief Counsel or the party are voluminous. The decision shall address each alleged violation, and may do so collectively. For each alleged violation, the decision shall find a violation or no violation and provide a basis for the finding. The decision shall set forth the basis for the Hearing Officer's assessment of a civil penalty, or decision not to assess a civil penalty. In determining the amount of the civil penalty, the gravity of the violation, the size of the violator's business, the violator's history of compliance with applicable fuel consumption standards, the actual fuel consumption performance related to

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the applicable standard, the estimated cost to comply with the regulation and applicable standard, the quantity of vehicles or engines not complying, and the effect of the penalty on the violator's ability to continue in business. The assessment of a civil penalty by the Hearing Officer shall be set forth in an accompanying final order. The Hearing Officer's written final order is a final agency action.

(ii) If the Hearing Officer assesses civil penalties in excess of \$1,000,000, the Hearing Officer's decision shall contain a statement advising the party of the right to an administrative appeal to the Administrator within a specified period of time. The party is advised that failure to submit an appeal within the prescribed time will bar its consideration and that failure to appeal on the basis of a particular issue will constitute a waiver of that issue in its appeal before the Administrator.

(iii) The filing of a timely and complete appeal to the Administrator of a Hearing Officer's order assessing a civil penalty shall suspend the operation of the Hearing Officer's penalty, which shall no longer be a final agency action.

(iv) There shall be no administrative appeals of civil penalties assessed by a Hearing Officer of less than \$1,000,000.

(13) *Appeals of civil penalties in excess of \$1,000,000.* (i) A party may appeal the Hearing Officer's order assessing civil penalties over \$1,000,000 to the Administrator within 21 days of the date of the issuance of the Hearing Officer's order.

(ii) The Administrator will review the decision of the Hearing Officer de novo, and may affirm the decision of the hearing officer and assess a civil penalty, or

(iii) The Administrator may:

(A) Modify a civil penalty;

(B) Rescind the Notice of Violation; or

(C) Remand the case back to the Hearing Officer for new or additional proceedings.

(iv) In the absence of a remand, the decision of the Administrator in an appeal is a final agency action.

(14) *Collection of assessed or compromised civil penalties.* (i) Payment of a

civil penalty, whether assessed or compromised, shall be made by check, postal money order, or electronic transfer of funds, as provided in instructions by the agency. A payment of civil penalties shall not be considered a request for a hearing.

(ii) The party must remit payment of any assessed civil penalty to NHTSA within 30 days after receipt of the Hearing Officer's order assessing civil penalties, or, in the case of an appeal to the Administrator, within 30 days after receipt of the Administrator's decision on the appeal.

(iii) The party must remit payment of any compromised civil penalty to NHTSA on the date and under such terms and conditions as agreed to by the party and NHTSA. Failure to pay may result in NHTSA entering a finding of violation by default and assessing a civil penalty in the amount proposed in the Notice of Violation without processing the violation under the hearing procedures set forth in this part.

(c) *Changes in corporate ownership and control.* Manufacturers must inform NHTSA of corporate relationship changes to ensure that credit accounts are identified correctly and credits are assigned and allocated properly.

(1) In general, if two manufacturers merge in any way, they must inform NHTSA how they plan to merge their credit accounts. NHTSA will subsequently assess corporate fuel consumption and compliance status of the merged fleet instead of the original separate fleets.

(2) If a manufacturer divides or divests itself of a portion of its automobile manufacturing business, it must inform NHTSA how it plans to divide the manufacturer's credit holdings into two or more accounts. NHTSA will subsequently distribute holdings as directed by the manufacturer, subject to provision for reasonably anticipated compliance obligations.

(3) If a manufacturer is a successor to another manufacturer's business, it must inform NHTSA how it plans to allocate credits and resolve liabilities per 49 CFR part 534.