



6560-50-P

## **ENVIRONMENTAL PROTECTION AGENCY**

### **40 CFR Parts 86 and 1039**

**[EPA-HQ-OAR-2011-1032; FRL-9914-63-OAR]**

**RIN 2060-AR46**

### **Emergency Vehicle Rule - SCR Maintenance and Regulatory Flexibility for Nonroad Equipment**

**AGENCY:** Environmental Protection Agency (EPA)

**ACTION:** Final rule.

**SUMMARY:** This rule consists of three parts. First, the Environmental Protection Agency (EPA) is adopting minimum maintenance intervals for replenishment of consumable chemical reductant (commonly known as diesel exhaust fluid, or DEF) in connection with the use of selective catalytic reduction (SCR) technologies. Second, EPA is adopting provisions allowing manufacturers of nonroad engines to give operators the means to obtain short-term relief from emission controls while operating in emergency situations, such as those where operation of a nonroad engine or equipment is needed to protect human life, and where obtaining short-term relief from emission controls enables such operation. Third, EPA is adopting minor revisions to the direct final rule for emergency vehicles that became effective August 7, 2012, in response to comments received on the parallel Notice of Proposed Rulemaking.

**DATES:** This rule is effective on **[Insert date 30 days after publication in the Federal Register]**.

**ADDRESSES:** EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2011-1032. All documents in the docket are listed on the [www.regulations.gov](http://www.regulations.gov) web site. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through [www.regulations.gov](http://www.regulations.gov) or in hard copy at the EPA Docket Center, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave., NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air Docket is (202) 566-1742.

**FOR FURTHER INFORMATION CONTACT:** Lauren Steele, Environmental Protection Agency, Office of Transportation and Air Quality, Assessment and Standards Division, 2000 Traverwood Drive, Ann Arbor, Michigan 48105; telephone number: 734-214-4788; fax number: 734-214-4816; email address: [steele.lauren@epa.gov](mailto:steele.lauren@epa.gov).

**SUPPLEMENTARY INFORMATION:**

*Does this action apply to me?*

This action may affect you if you produce or import diesel engines that make use of a consumable chemical reductant to comply with emissions standards for nitrogen oxides.<sup>1</sup> You may also be affected by this action if you produce or import diesel engines for nonroad applications, or if you produce or import new on-road or nonroad diesel engines that are intended for use in vehicles that serve the emergency response industry.

The following table gives some examples of entities that may be affected by this action. Because these are only examples, you should carefully examine the regulations in 40 CFR parts 85, 86 and 1039. If you have questions regarding how or whether this rule applies to you, you may call the person listed in FOR FURTHER INFORMATION CONTACT.

Category	NAICS Codes <sup>a</sup>	Examples of Potentially Regulated Entities
Industry	336111 336112 333618 336120	Engine and Truck Manufacturers
Industry	541514 811112 811198	Commercial Importers of Vehicles and Vehicle Components
Industry	811310	Engine Repair, Remanufacture, and Maintenance

Note:

<sup>a</sup> North American Industry Classification System (NAICS)

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<sup>1</sup> References in this preamble to “diesel” engines (and the vehicles or equipment powered by them) generally include compression-ignition engines, including those fueled by natural gas, as well as other alternative fuel engines that are derived from diesel engines.

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## **I. Overview**

### **A. Maintenance Intervals for Replenishment of Diesel Exhaust Fluid**

EPA is amending its regulations for diesel engines to add provisions specifying emission-related maintenance and scheduled maintenance intervals for replenishment of consumable chemical reductant in connection with engines and vehicles that use selective catalytic reduction (SCR) technologies. This action improves the clarity and transparency of EPA's requirements for SCR systems.

Most manufacturers of diesel engines and vehicles subject to EPA's standards regulating oxides of nitrogen (NO<sub>x</sub>) have chosen to use SCR as a NO<sub>x</sub> reduction technology in order to meet these requirements. SCR systems use a chemical reductant that usually contains urea and is known as diesel exhaust fluid (DEF). The DEF is injected into the exhaust gas and requires periodic replenishment by refilling the DEF tank.

Given that SCR use is now common in the transportation sector and replenishment of DEF is necessary for SCR to be effective, in this final rule EPA is adding DEF replenishment to the list of scheduled emission-related maintenance published in the Code of Federal Regulations (CFR), and is adopting minimum replenishment intervals for this fluid, rather than relying on a case-by-case approval as was done under the previous regulations. We are adopting, as proposed, a minimum DEF replenishment interval for centrally fueled vocational vehicles equivalent in miles to the range provided by the fuel tank size; that is, a 1:1 distance ratio of DEF refill to fuel refill. In response to comments, we are adopting a minimum DEF replenishment interval for other heavy-duty vehicles equivalent to the fuel range (1:1), and a minimum interval of 4,000 miles for light-duty vehicles. See Section III for a complete description of comments received and explanations of the Agency's decisions.

#### **B. Nonroad Equipment Used Temporarily in Emergency Service**

EPA is adopting provisions allowing manufacturers of compression-ignition nonroad engines (generally, those fueled with diesel fuel) to give operators the means to obtain short-term relief from emission controls while operating in emergency situations. For purposes of this rule, an emergency situation would be one where the disruption in the operation of a nonroad engine or equipment would pose a risk to human life, and obtaining temporary relief from emission controls enables operation needed to protect human life. This relief addresses concerns about

rare circumstances where unusual conditions of the emission control system could reduce the power, torque, or speed of engines on nonroad equipment when needed in emergency situations. We are adopting provisions for a short-term emergency deactivation of the normal emission controls, where such strategies could prevent the equipment from performing emergency-related work, such as recovery from a natural disaster. See Section IV for a complete description of comments received and explanations of the Agency's decisions on this provision.

### **C. Emergency Vehicle Provisions: Amendments to Direct Final Rule**

On June 8, 2012, EPA published a direct final rule (DFR) for dedicated emergency vehicles that went into effect on August 7, 2012 (77 FR 34130). Under the June 8, 2012, rule, engine manufacturers were permitted to request to deploy specific emission controls or settings approved as Auxiliary Emission Control Devices (AECDs) for new engines, and Emergency Vehicle Field Modifications (EVFMs) for in-use engines that are sold for use only in emergency vehicles, defined as ambulances and fire trucks at 40 CFR 86.1803-01. EPA adopted that rule to enable dedicated emergency vehicles with diesel engines to perform mission-critical life- and property-saving work without risk of losing power, speed or torque due to abnormal conditions of the emission control systems. In this final action, EPA is revising some provisions of that final rule, consistent with comments received.

Specifically, EPA is allowing for case-by-case review of applications for AECDs or EVFMs for vehicles that EPA determines will be used in emergency situations where emission control function or malfunction may cause a significant risk to human life. With this amendment, it is EPA's intent to include vehicles other than fire trucks or ambulances that will be used for performing other public safety, rescue or emergency personnel or equipment

transport functions related to saving lives and reducing injuries coincident with fires and other hazardous situations.

EPA is also modifying the definition of emergency equipment at 40 CFR 1039.801. We are clarifying which nonroad engines meet this definition, and we are allowing for case-by-case review of applications for AECDs or Emergency Equipment Field Modifications (EEFMs) for other emergency equipment. See Section V for a complete description of comments received and explanations of the Agency's amendments to this rule.

## **II. Statutory Authority and Regulatory Background**

### **A. Statutory Authority**

Section 202(a)(1) of the Clean Air Act (CAA or the Act) directs EPA to establish standards regulating the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines that, in the Administrator's judgment, causes or contributes to air pollution which may reasonably be anticipated to endanger public health or welfare. Such standards apply for the useful life of the vehicles or engines. Section 202(a)(3) requires that EPA set standards applicable to emissions of hydrocarbons, carbon monoxide, NO<sub>x</sub> and particulate matter (PM) from heavy-duty trucks that reflect the greatest degree of emission reduction achievable through the application of technology which we determine will be available for the model year to which the standards apply. We are to give appropriate consideration to cost, energy, and safety factors associated with the application of such technology. We may revise such technology-based standards, taking costs into account, on the basis of information concerning the effects of air pollution from heavy-duty vehicles or engines and other sources of mobile source related pollutants on the public health and welfare.

Section 202(a)(4)(A) of the Act requires the Administrator to consider risks to public health, welfare or safety in determining whether an emission control device, system or element of design shall be used in a new motor vehicle or new motor vehicle engine. Under section 202(a)(4)(B), the Administrator shall consider available methods for reducing risk to public health, welfare or safety associated with use of such device, system or element of design, as well as the availability of other devices, systems or elements of design which may be used to conform to requirements prescribed by (this subchapter) without causing or contributing to such unreasonable risk.

Section 206(a) of the Act requires EPA to test, or require to be tested in such manner as it deems appropriate, motor vehicles or motor vehicle engines submitted by a manufacturer to determine whether such vehicle or engine conforms to the regulations promulgated under section 202. Section 206(d) provides that EPA shall by regulation establish methods and procedures for making tests under section 206.

Section 213 of the Act gives EPA the authority to establish emissions standards for nonroad engines and vehicles (42 U.S.C. 7547). Sections 213(a)(3) and (a)(4) authorize the Administrator to set standards and require EPA to give appropriate consideration to cost, lead time, noise, energy, and safety factors associated with the application of technology. Section 213(a)(4) authorizes the Administrator to establish standards to control emissions of pollutants (other than those covered by section 213(a)(3)) which “may reasonably be anticipated to endanger public health and welfare.” Section 213(d) requires the standards under section 213 to be subject to sections 206-209 of the Act and to be enforced in the same manner as standards prescribed under section 202 of the Act.

## **B. Regulatory Background**

### **1. On-Highway NO<sub>x</sub> and PM Standards**

On January 18, 2001, EPA published a rule promulgating more stringent standards for NO<sub>x</sub> and PM for heavy-duty highway engines (“the heavy-duty highway rule”).<sup>2</sup> The 0.20 gram per brake-horsepower-hour (g/bhp-hr) NO<sub>x</sub> standard in the heavy-duty highway rule first applied in model year (MY) 2007. However, because of phase-in flexibility provisions adopted in that rule and use of emission credits generated by manufacturers for early compliance, there was a transition period where manufacturers were able to continue to produce engines with NO<sub>x</sub> emissions greater than 0.20 g/bhp-hr. The phase-in provisions ended after model year (MY) 2009 so that the 0.20 g/bhp-hr NO<sub>x</sub> standard was fully phased-in for MY 2010. Because of these changes that occurred in MY 2010, the 0.20 g/bhp-hr NO<sub>x</sub> emission standard is often referred to as the 2010 NO<sub>x</sub> emission standard, even though it applied to engines as early as MY 2007.

The heavy-duty highway rule adopted in 2001 also included a PM emissions standard for new heavy-duty diesel engines of 0.01 g/bhp-hr, effective for engines beginning with MY 2007. To meet this stringent PM standard, manufacturers have relied on high-efficiency diesel particulate filter after-treatment to clean the exhaust.

### **2. Nonroad NO<sub>x</sub> and PM Standards**

On June 29, 2004, EPA adopted technology-forcing standards for nonroad diesel engines, phasing in from the 2011 to 2015 model years.<sup>3</sup> These are known as the Tier 4 standards. This

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<sup>2</sup> Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements (66 FR 5001).

<sup>3</sup> Control of Emissions of Air Pollution from Nonroad Diesel Engines and Fuel (69 FR 38958).

program includes requirements that are generally driving the use of NO<sub>x</sub> after-treatment for engines above 75 hp and, in many cases, diesel particulate filters, for engines above 25 hp.

### **3. Related Regulations with Emergency Vehicle Provisions**

#### *a. Light-Duty GHG Standards*

On October 15, 2012, in a final rule issued jointly with the National Highway Traffic Safety Administration (NHTSA), EPA excluded light-duty emergency and police vehicles from all phases of greenhouse gas (GHG) emissions standards, in part due to concerns related to technical feasibility, and in part to harmonize with NHTSA's program. Consistent with authority under the Energy Policy and Conservation Act, NHTSA's corporate average fuel economy program provides manufacturers with the option to exclude emergency vehicles.<sup>4</sup> In that final Light-Duty GHG rule, EPA amended 40 CFR 86.1803-01 to clarify that *emergency vehicle* for purposes of the greenhouse gas emissions standards is different than *emergency vehicle* for provisions related to defeat devices and AECs (See 77 FR 63155).

#### *b. Marine Diesel Engine Standards*

In addition to the exemption for on-highway engines from GHG standards, EPA has provided limited regulatory relief for other types of emergency-use engines. First, EPA's May 6, 2008, final rule adopting Tier 3 and Tier 4 standards for marine diesel engines allows for emergency and rescue vessels to meet an earlier, less stringent tier of standards under 40 CFR parts 89, 94 and 1042.<sup>5</sup> We adopted these provisions to avoid compromising engine performance during emergency operation, and to ensure that more stringent emission standards did not cause a

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<sup>4</sup> See 49 U.S.C. 32902(e).

<sup>5</sup> Final Rule: Control of Emissions of Air Pollution from Locomotives and Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder, 73 FR 25098, May 6, 2008, and republished to correct typographical errors on June 30, 2008, 73 FR 37096.

situation where there were no certified engines available for emergency vessels. Such engines are not subject to the Tier 4 standards, which generally involve SCR and diesel particulate filters. The regulations also allow for meeting a less stringent standard if there are no suitable engines that are certified to the current standards.

*c. On-road and Nonroad Diesel Engine Standards*

On June 8, 2012, EPA published a direct final rule for dedicated emergency vehicles, which became effective on August 7, 2012 (77 FR 34129). This rule revised the definition of defeat device to exclude EPA-approved Auxiliary Emission Control Devices (AECs) for new engines, and Emergency Vehicle Field Modifications (EVFMs) for in-use engines that are sold for use only in fire trucks, ambulances, and dedicated nonroad emergency equipment. This rule maintains the applicability of the criteria pollutant emissions standards to emergency vehicles, while providing flexibility to manufacturers to design emission control systems that are appropriate for the extreme duty cycles of some trucks.

**III. Scheduled Maintenance and Maintenance Interval for Replacement of Diesel Exhaust Fluid**

In this action, EPA is adding new provisions in its regulations that explicitly address replacement of DEF as part of approved emission-related scheduled maintenance and set out the permitted maintenance intervals for replacement of DEF on diesel-fueled new motor vehicles, new motor vehicle engines and new nonroad compression-ignition (NRCI) engines. The DEF refill regulations being finalized in this action allow for shorter intervals between maintenance in certain cases, compared to EPA's previous scheduled maintenance intervals, as described in Section III.C. EPA has previously applied the scheduled maintenance requirements for DEF refill through its alternate maintenance authority in 40 CFR 86.094-25(b)(7) and 40 CFR

86.1834-01(b)(7), which allows EPA to approve either a new scheduled maintenance interval or a change to an existing scheduled maintenance interval, based on a manufacturer's demonstration.

#### **A. Background**

EPA's regulations limit the emission-related scheduled maintenance that may be performed for purposes of durability testing and for inclusion in maintenance instructions provided to purchasers of new motor vehicles and new motor vehicle engines. See 40 CFR 86.004-25(b); 40 CFR 86.094-25(b); 40 CFR 86.1834-01(b). The regulations include lists of specific types of emission-related maintenance and establish minimum allowable intervals for this maintenance. See 40 CFR 86.004-25(b)(4); 40 CFR 86.1834-01(b)(4). For example, in general, the maintenance interval is in miles for the adjustment, cleaning, or repair of fuel injectors, turbochargers, electronic engine control units, particulate trap or trap-oxidizers, exhaust gas recirculation systems, and catalytic converters. The minimum allowable limit is 100,000 miles of use (and then at 100,000 mile intervals thereafter) for diesel cycle light-duty vehicles, diesel cycle light-duty trucks, and light heavy-duty diesel engines and 150,000 miles for medium and heavy heavy-duty diesel engines. The regulations also allow manufacturers to request a different maintenance schedule or to request new scheduled maintenance, which includes maintenance that is a direct result of the implementation of new technology not found in production prior to MY 1980. This allowance is specified in 40 CFR 86.094-25(b)(7) and 40 CFR 86.1834-01(b)(7), and it is sometimes known as the (b)(7) process. This process requires manufacturers to justify that the additional maintenance is necessary and to demonstrate, for critical emission-related scheduled maintenance, that it is likely to be performed in use.

Similarly, EPA's regulations for NRCI engines (40 CFR 1039.125) limit the emission-related maintenance that may be performed for purposes of emissions testing and providing ultimate purchasers written instructions for properly maintaining and using the engine. For example, the maintenance interval for adjustment, cleaning, repair or replacement for catalytic converters generally may not occur more frequently than after 3,000 hours of use for engines below 130 kilowatt (kW) and 4,500 hours for engines at or above 130 kW. This regulation also allows manufacturers to request a different maintenance schedule or to request new scheduled maintenance, which includes maintenance on emission-related components that were not in widespread use on NRCI engines prior to MY 2011.

EPA adopted new emission standards applicable to emissions of NO<sub>x</sub> from light-duty vehicles and trucks on February 10, 2000 (65 FR 6698). Similarly, EPA adopted new standards applicable to emissions of NO<sub>x</sub> from heavy-duty highway engines and vehicles on January 18, 2001 (66 FR 5002). These standards phased in beginning with MY 2004 and all were fully phased-in by MY 2010. Most manufacturers of affected diesel engines and vehicles have chosen to use SCR in order to meet these requirements. SCR systems require a reducing agent, and those on mobile sources use a solution of urea in water known as diesel exhaust fluid (DEF). The DEF is injected into the exhaust gas and requires periodic replenishment by refilling the DEF tank.

EPA adopted similar new emission standards applicable to emissions of NO<sub>x</sub> from NRCI engines on June 29, 2004 (69 FR 38958). These standards have begun to be implemented pursuant to a phase-in that began in MY 2011, and most manufacturers have chosen to use SCR to meet them. The SCR systems being incorporated into nonroad engines are a carryover from the motor vehicle systems, and thus they also require DEF to function properly. EPA conducted

a webinar workshop on July 26, 2011, with NRCI engine manufacturers to address the application of SCR emission technology.<sup>6</sup>

In a guidance document signed on March 27, 2007 (CISD-07-07), EPA indicated its belief that the requirements for critical emission-related maintenance would apply to replenishment of the DEF tank and that manufacturers wanting to use SCR technology would likely have to request a change to scheduled maintenance per 40 CFR 86.094-25(b)(7) or 86.1834-01(b)(7).<sup>7</sup>

Following the completion of the guidance, EPA received several requests for new maintenance intervals for SCR-equipped motor vehicles and motor vehicle engines.<sup>8</sup> EPA granted these requests for model years 2009 through 2010 for light-duty vehicles and 2009 through 2011 for heavy-duty engines, in a notice that was published in the Federal Register (74 FR 57671, November 9, 2009). In granting the requests, EPA stated that it:

...believes the maintenance of performing DEF refills on SCR systems should be considered as 'critical emission-related scheduled maintenance.' EPA believes the existing allowable schedule maintenance mileage intervals applicable to catalytic converters are generally applicable to SCR systems which contain a catalyst, but that the DEF refills are a new type of maintenance uniquely associated with SCR systems. Therefore, the 100,000-mile interval at 40 CFR §86.1834-01(b)(4)(ii) for catalytic converters on diesel-cycle light-duty vehicles and light-duty trucks (and any other chassis-certified vehicles) and the 100,000-mile interval (and 100,000 mile intervals thereafter) for light heavy-duty diesel engines and the 100,000-mile interval (and 150,000 mile intervals thereafter) for medium and heavy heavy-duty diesel engines at 40 CFR §86.004-

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<sup>6</sup> See EPA's July 26, 2011 Webinar Presentation, *Nonroad SCR Certification*, available at <http://www.epa.gov/otaq/cert/documents/nrci-scr-web-conf.2011-07-25.pdf>

<sup>7</sup> USEPA Office of Air and Radiation, Certification Procedure for Light-Duty and Heavy-Duty Diesel Vehicles and Heavy-Duty Diesel Engines Using Selective Catalyst Reduction (SCR) Technologies, CISD-07-07, March 27, 2007, available at [http://iaspub.epa.gov/otaqpub/display\\_file.jsp?docid=16677&flag=1](http://iaspub.epa.gov/otaqpub/display_file.jsp?docid=16677&flag=1).

<sup>8</sup> See letter dated March 31, 2009 from Giedrius Ambrozaitis, Alliance of Automobile Manufacturers, Director, Environmental Affairs to Karl Simon, EPA, Director, Compliance and Innovative Strategies Division; Letter dated May 8, 2009 from Jed Mandel, Engine Manufacturers Ass'n to Karl Simon, EPA, Director, Compliance and Innovative Strategies Division; Letters dated June 29, 2009 and October 8, 2009 from Steven C. Berry, Director Government Relations Volvo Powertrain.

25(b)(4)(iii) are generally applicable to SCR systems. As noted, the SCR systems are a new type of technology designed to meet the newest emission standards and the DEF refill intervals represent a new type of scheduled maintenance; therefore, EPA believes that manufacturers may request from EPA the ability to perform the new scheduled maintenance of DEF refills.

Consistent with that statement, EPA approved a minimum maintenance interval for refill of DEF tanks equal to the applicable vehicle's scheduled oil change interval for light-duty vehicles and light-duty trucks. For heavy-duty engines, EPA approved a maintenance interval equal to the range (in miles or hours) of the vehicle operation that is no less than the vehicle's fuel capacity (i.e., a 1:1 ratio) for vocational vehicles such as dump trucks, concrete mixers, refuse trucks and similar typically centrally fueled applications. For all other vehicles equipped with a constantly viewable DEF level indicator (e.g. a gauge or other mechanism on the dashboard that will notify the driver of the DEF fill level and the ability to warn the driver of the need to refill the DEF tank before other inducements occur), EPA approved a DEF tank refill interval equal to no less than twice the distance provided by the vehicle's fuel capacity (i.e., a 2:1 ratio). For all other vehicles that did not have a constantly viewable DEF level indicator, EPA approved a DEF tank refill interval equal to no less than three times the range of the vehicle's fuel capacity (i.e., a 3:1 ratio).

After the first year, engine and vehicle manufacturers provided additional requests for new maintenance intervals for vehicles and engines in model years not covered by the November 9, 2009 Federal Register notice.<sup>9</sup> On January 5, 2012 (77 FR 488), EPA updated and extended

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<sup>9</sup> See letter dated July 20, 2010 from Giedrius Ambrozaitis, Alliance of Automobile Manufacturers, Director, Environmental Affairs to Karl Simon, EPA, Director, Compliance and Innovative Strategies Division; Letter dated June 13, 2011 from Timothy A. French, Engine Manufacturers Ass'n to Justin G. Greuel, EPA, Compliance and Innovative Strategies Division; Letter dated April 28, 2011 from Steve Berry, Volvo Powertrain; Letters dated August 18, 2011 and September 27, 2011 to Karl Simon, EPA, Director, Compliance and Innovative Strategies Division from R. Latane Montague, Hogan Lovells.

its approval of maintenance intervals for the refill of DEF tanks applicable to light-duty vehicles and light-duty trucks, as well as for heavy-duty engines for 2011 and later model years. For light-duty vehicles and light-duty trucks the approved interval for DEF refill remained at the scheduled oil change interval. For chassis-certified heavy-duty vehicles, EPA has required DEF refill intervals approximately as long as oil changes, although some approvals have allowed levels slightly shorter than the oil change interval. For heavy-duty engines the approved maintenance interval for centrally fueled vocational vehicles remained at 1:1 and for all other types of heavy-duty vehicles the approved maintenance interval has been 2:1.

In addition to the approvals for highway engines, EPA also established a similar approach for nonroad engines. During EPA's July 26, 2011, webinar workshop for NRCI engine manufacturers, EPA discussed the issue of maintenance intervals for the refill of DEF and instructed manufacturers to follow the regulatory provisions in order to petition EPA for what it thought were appropriate intervals.<sup>10</sup> Following the workshop, EPA received several requests for new maintenance intervals for SCR-equipped NRCI engines. EPA granted these requests for 2011 and later model years in a notice that was published in the Federal Register (77 FR 497, January 5, 2012). In granting the requests, EPA stated that it:

...believes that SCR systems are a new technology and are properly considered a critical emission-related component. EPA believes the existing allowable schedule maintenance mileage intervals applicable to catalytic converters are generally applicable to SCR systems which contain a catalyst, but that the SCR systems are a new type of technology and that DEF refills are a new type of maintenance uniquely associated with SCR systems. Therefore, the 3,000 hour (engines below 130 kW) and 4,500 hour (engines at or above 130kW) intervals are generally applicable to SCR systems. As noted, the SCR systems are a new type of technology designed to meet the newest emission standards and the DEF refill intervals represent a new type of scheduled maintenance; therefore, EPA believes that manufacturers may request from EPA the ability to perform the new scheduled maintenance of DEF refills.

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<sup>10</sup> See Note 6, above.

EPA established a minimum maintenance interval for refill of NRCI DEF tanks, requiring that it be no less than the range in operating hours provided by the equipment's fuel capacity (i.e., a 1:1 engine-hour ratio of DEF refill to fuel refill).

All engines that have received approval for DEF refill maintenance intervals have been equipped with engine design elements to ensure that the DEF will be refilled in use. These design elements generally include warning lights, possible engine power derate, and possible engine shutdown for operation without DEF. This action does not change the need for such design elements.

## **B. Summary of the NPRM and Comments**

In the NPRM published June 8, 2012 (77 FR 34149), EPA proposed to codify into the regulations the minimum DEF refill intervals being applied under the most recent administrative approvals (see previous section). However, we requested comment on the possibility of shorter intervals.

Commenters generally supported the proposal, and none argued to extend the minimum intervals beyond what was proposed. Moreover, none of the comments responding to EPA's request about shorter intervals expressed opposition to the possibility of shorter intervals. Most of the substantive comments on DEF refills were from engine and vehicle manufacturers, who generally asked for the following changes for the Final Rule:

- DEF refills for light-duty and light heavy-duty vehicles should be de-linked from oil change intervals.

- DEF refills for light-duty and light heavy-duty vehicles should be less than current recommended oil change intervals.
- The minimum DEF to fuel range ratio should be 1:1 for all heavy-duty motor vehicle engines.

The merits of these comments are discussed in the following sections. See the Summary and Analysis of Comments document in the rulemaking docket for a more complete discussion of the comments.

### **C. Regulatory Action**

In this final action, EPA is adding DEF replenishment to the list of scheduled emission-related maintenance for diesel-fueled motor vehicles and motor vehicle engines, as well as for NRCI engines that use SCR, as proposed. These regulatory provisions are in 40 CFR 86.004-25(b)(4) and 40 CFR 86.1834-01(b)(4) for diesel-fueled motor vehicles and motor vehicle engines and 40 CFR 1039.125(a)(2) and (a)(3) for NRCI engines that use SCR. EPA is also incorporating appropriate maintenance intervals for this scheduled maintenance. Manufacturers complying with these new regulatory provisions will no longer be required to seek separate approval from EPA. The intervals being finalized are the same or shorter than those proposed, and are an outcome of the public comments we received following the proposal.

The comments emphasized the benefits of shorter minimum maintenance intervals, in particular the beneficial result that shorter intervals could have on the ability of manufacturers to comply with new standards related to greenhouse gases and fuel economy. Manufacturers also emphasized that the greater availability of DEF as well as design features used on current SCR-equipped vehicles and engines, including features that warn operators when DEF levels start to

become low and reduce engine performance when DEF levels are very low or tanks are empty (“performance inducements”), make it highly likely that operators would refill their DEF tanks prior to DEF depletion.

We believe the general availability of DEF, along with current SCR engine design features, are sufficiently compelling reasons for EPA to finalize shorter DEF refill intervals than proposed. Longer intervals were previously approved, in part, due to concerns about operators’ access to DEF as well as concerns that drivers were not yet familiar with this new maintenance practice. Now, design features such as performance inducements are sufficiently motivating operators to properly refill DEF, and DEF is easily obtainable. The final regulations do not change the current requirement that manufacturers employ the design features currently being used, or other methods with similar effectiveness, to ensure that DEF tanks are not likely to be depleted in use. The final regulations identify DEF refill as essential emission-related maintenance, which requires manufacturers to show that the maintenance is likely to be performed in use. Moreover, EPA has identified DEF tank level as a potentially adjustable parameter, and has provided guidance for manufacturers to show that they meet the regulatory requirement to ensure that DEF tank levels outside the acceptable range are unlikely to occur on in-use vehicles or engines, including discussion of the design features currently being used.<sup>11</sup>

EPA also notes that the regulations will continue to allow any manufacturer to petition EPA under the “paragraph (b)(7) process” for a shorter maintenance interval than that promulgated for DEF refills if the manufacturer can show that a shorter interval is technologically necessary for the particular engine or vehicle configuration being certified.

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<sup>11</sup> See USEPA Guidance CISC-07-07, at Note 7, above.

While DEF replenishment will be treated similar to other allowable maintenance in most respects, there will be some differences. First, EPA will not restrict DEF refills for laboratory testing of engines to enable testers to use non-production DEF tanks and fuel tanks for testing. Since neither the DEF tank size nor the fuel tank size would affect measured emissions, it would be an unnecessary burden to place restrictions on tank size or refill rate during laboratory testing of engines (other than to require that the tanks be large enough for the test to be completed). Second, the highway and nonroad regulations both allow critical emissions-related maintenance to be performed if manufacturers can make one of several demonstrations to show that there is a reasonable likelihood the maintenance will be performed in use. For some of the possible demonstrations, we do not believe that the specified criteria are sufficiently robust for DEF replenishment, which is a critical element for the operation of the SCR system, and the 90% NO<sub>x</sub> reductions expected from SCR systems. Specifically we are concerned about the adequacy of:

- Showing that the maintenance is performed at least 80 percent of the time in use.
- Relying on visible signals.
- Providing the maintenance free of charge.<sup>12</sup>

Therefore, we are stating in the regulations that those demonstrations are not sufficient for demonstration that DEF replenishment will occur in use. Unless we approve an alternate method, we will require that manufacturers demonstrate “a connection between emissions and vehicle performance such that as emissions increase due to lack of maintenance, vehicle performance will simultaneously deteriorate to a point unacceptable for typical driving.” This

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<sup>12</sup> See 40 CFR 86.004-25(b)(6)(ii)(B)-(E).

requirement generally reinforces EPA's current guidance requiring performance inducements when DEF levels become very low or tanks are empty. We note that while these specific provisions were not explicitly discussed in the NPRM, they reflect the broader principle that was discussed – that this action is generally codifying the existing approach to addressing DEF refills. Both the flexibility for DEF tank size during engine testing and the more stringent requirements for demonstrating that DEF refills will actually occur in use have applied under EPA's preexisting certification procedures.

### **1. Light-Duty Vehicles and Light-Duty Trucks**

For light-duty vehicles and light-duty trucks (LDVs and LDTs), we are adopting a minimum interval of 4,000 miles. Under the (b)(7) process, we typically had been requiring DEF refill intervals at least equal to the scheduled oil change interval for the vehicle, which is typically more than 4,000 miles. Thus, for LDVs and LDTs, the final regulations differ in two ways from the previous policy: the DEF refill interval is being *decoupled* from the oil change interval, and the minimum interval is being shortened.

Regarding the first issue, manufacturer comments expressed the concern that tying DEF intervals to oil change intervals provides a disincentive to extend oil change intervals, and in fact, may create an incentive to actually shorten oil change intervals. Manufacturers were particularly concerned that the benefits of new automotive and motor oil technologies that allow consumers to drive for greater miles between oil changes would be reduced if mandated minimum DEF maintenance intervals are tied to oil change intervals. DEF maintenance intervals do not change as a result of the changes in technologies related to motor oil, so there would be a continuing mismatch between maintenance intervals. EPA agrees with manufacturers that longer

oil change intervals are beneficial, in that they provide a cost savings for the consumer and generally also provide an environmental benefit by reducing the amount of waste oil generated.

In addition, one of the initial reasons for tying DEF refills to oil changes for light-duty vehicles as the new technology was introduced was to substantially increase the likelihood of proper refills for consumers who were unfamiliar with DEF. However, as SCR technology has become more conventional and DEF has become more available, operators are much more likely to be familiar with DEF. For those few who may be initially unfamiliar with the need to refill DEF, the warning lights and performance inducements will be sufficient to ensure proper refills. The second change from the prior policy is to set a 4,000 mile minimum interval, which will allow manufacturers to design their vehicles and engines for more frequent DEF refills than we have generally allowed to date. (Light-duty (b)(7) approvals have tied the DEF refill directly to the manufacturer's recommended oil change interval, which is typically 6,000 to 10,000 miles.) We are allowing this reduced maintenance interval to address manufacturer concerns about the size and weight of DEF tanks needed to achieve longer refill intervals, which could result in concerns with using limited packaging space, greater GHG emissions, and reduced fuel economy. Automobile manufacturers have stated that it takes approximately an 8 gallon DEF tank to assure the DEF will last for the length of a typical scheduled oil change interval. Requiring tanks this size may impede the space that is typical for the light-duty vehicle design and transportation needs of the consumer. Interior cabin volume and cargo space are highly valued attributes in light-duty vehicles and trucks. Manufacturers have historically strived to optimize these attributes, even to the point of switching a vehicle from rear-wheel drive to front-wheel drive to gain the extra interior cabin space taken up by where the drive shaft tunnel existed, or switching the size of the spare tire from a conventional sized tire to a small temporary

tire to gain additional trunk space. Thus any significant interior, cargo or trunk space used to store a DEF tank would be unacceptable to customers. There are also packaging concerns with placing a large DEF tank in the engine compartment or in the vehicle's undercarriage. Most vehicle undercarriages are already crowded with the engine, exhaust system, including catalytic converters and mufflers, fuel tank, etc. limiting any available space for a DEF tank.

In addition to the practical impacts of devoting additional space to larger DEF tanks, the addition of the *weight* associated with larger DEF tanks presents other engineering challenges related to performance and efficiency. With a density of about 9 lb/gallon, an 8 gallon DEF tank would add 72 lbs to the weight of the vehicle. Changing this weight by even ten pounds would have a small but important fuel consumption impact. Thus any requirement for a larger DEF tank may have an adverse effect on the ability of a manufacturer to meet greenhouse gas emission standards and fuel economy standards.

Given the widespread retail availability of DEF and the inducements against operating the vehicle without DEF, we see little if any environmental benefit from requiring intervals greater than 4,000 miles.

To put this 4,000 mile interval in context, a vehicle with a 400 mile fuel range would need to refill the DEF tank no more frequently than every tenth fuel fill up. For operators who change oil every 7,500 miles and fill the DEF tank when they do, no more than one DEF refill would be needed between oil changes. We still believe it is necessary to require substantially longer DEF intervals for LDVs and LDTs than for commercial heavy-duty vehicles because of the wider range of usage patterns of light-duty vehicles. Most significantly, these light-duty vehicles are more likely to refuel at neighborhood refueling stations that may not have DEF.

Ensuring that these vehicles can go through several tanks of fuel before needing to refill the DEF tanks reduces the likelihood that operators will allow the DEF tank to become completely empty.

## **2. Complete Heavy-Duty Pickups and Vans**

EPA has treated heavy-duty complete trucks in the same manner as light-duty trucks; generally requiring DEF refill intervals approximately as long as oil change intervals. For the same reasons given above, we believe that tying DEF refills to oil changes is no more appropriate for complete heavy-duty pickups and vans than for LDVs or LDTs. Thus, the final regulations set the minimum DEF refill interval for complete heavy-duty pickups and vans to the same 4,000 mile level as for LDVs and LDTs.

## **3. Heavy-Duty Highway Engines**

EPA believes it is reasonable to base the DEF refilling intervals for heavy-duty on diesel refueling intervals (rather than oil change intervals or a specific number of miles) because DEF refill for heavy-duty trucks is most commonly undertaken at the time of fuel refill due to the DEF infrastructure, which has developed at diesel refueling stations, in particular, highway truck stops. For heavy-duty engines (other than those used in light heavy duty vehicles subject to the 4,000 mile interval), we are finalizing a DEF tank refill interval equal to the range (in miles) of the vehicle operation that is no less than that provided by the vehicle's fuel capacity (i.e., a 1:1 distance ratio). This is what we proposed for vocational vehicles such as dump trucks, concrete mixers, refuse trucks and similar typically centrally fueled applications. For all other vehicles, we proposed the DEF tank refill interval must provide a range of vehicle operation that is no less than twice the range of vehicle's fuel capacity (i.e., a 2:1 ratio). However, based on comments, we now believe that *requiring* a 2:1 ratio for vehicles that are not centrally-fueled is unnecessary. Commenters noted that because DEF is now widely available and the design features currently

used in heavy duty engines, including performance inducements, are sufficiently severe, EPA should leave it to the market to decide whether larger DEF tanks are appropriate for non-centrally-fueled vehicles.

To assist manufacturers in designing this minimum refill interval, EPA is requiring that designs be evaluated under operating conditions reasonably representing worst case conditions, so that a vehicle would not be expected to run out of DEF before running out of fuel. For example, if the highest rate of DEF consumption (relative to fuel consumption) will occur under highway driving conditions, the DEF tank should be large enough that a single tank of DEF would be enough to continue proper operation of the SCR system for whatever number of highway miles is possible with a single tank of fuel. Conversely, if the highest rate of DEF consumption (relative to fuel consumption) will occur under city or urban driving conditions, the DEF tank should be large enough that a single tank of DEF would be enough to continue proper operation of the SCR system for whatever number of city or urban miles is possible with a single tank of fuel. As an approximation, manufacturers may choose to consider the DEF to fuel consumption ratio as observed over the Supplemental Emissions Test (SET) and the transient Federal Test Procedure (FTP) cycles, as appropriate. Manufacturers may also consider other cycles if they are more appropriate.

EPA has determined that allowing for refilling of DEF at lower intervals than required for other scheduled maintenance is technologically necessary. As discussed in the notice of proposed rulemaking, EPA knows of no SCR technology for any heavy-duty engine application that is capable of operating in a practical way without a DEF refill for the high mileage levels associated with otherwise applicable aftertreatment maintenance intervals. Moreover, there are several factors that support allowing DEF refill intervals to be in the range of a single tank of

fuel. Manufacturers report that vehicle operators generally have been refilling DEF at the same time and location that they refill the fuel tanks. Also, manufacturers have incorporated warning signals and performance-related inducements on their SCR-equipped vehicles to ensure the substantial likelihood that DEF refilling will occur, and there is considerable evidence that heavy-duty vehicle operators in the United States have in practice been refilling their DEF tanks prior to the tanks becoming empty in virtually all situations.<sup>13</sup>

Prior to the NPRM, several manufacturers indicated that EPA should set the minimum required DEF refill interval at an interval equal to the range of distance provided by the vehicle's fuel tank (i.e., a 1:1 distance ratio) for all heavy-duty engines, not only those that are centrally-fueled.<sup>14</sup> They claimed that this shorter maintenance interval is "necessary and appropriate to reflect current and anticipated changes in vehicle designs, significant changes in inducement strategies, and the increased availability of DEF." In particular, they noted that EPA's inducement requirements for SCR-equipped engines make it "essentially impossible for an SCR vehicle to operate without regular DEF replenishment" and the severity of inducements related to DEF levels (e.g., severe reduction in engine power and/or vehicle speed) is "extraordinary and must be taken into account" when EPA is determining appropriate maintenance intervals. We agree that, given the disruptions that could happen if power or speed restrictions occur, it is reasonable to expect that a driver with a 1:1 tank ratio will operate under a firm discipline that the DEF tank must be refilled every time the fuel tanks are filled, and is therefore likely to rely on gauge levels and warnings to trigger refills, in order to avoid these inducements.

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<sup>13</sup> See 76 FR 32886 (June 7, 2011) and the studies cited at 32889-32891.

<sup>14</sup> See letters dated August 18, 2011 and September 27, 2011 to Karl Simon, EPA, Director, Compliance and Innovative Strategies Division from R. Latane Montague and Hogan Lovells.

Moreover, as commenters note, EPA has adopted new greenhouse gas standards for heavy-duty on-highway trucks,<sup>15</sup> and manufacturers are working to increase the fuel efficiency of their vehicles in advance of the effective dates of those regulations. Within these regulations, EPA recognizes the impact of weight savings on fuel efficiency and GHG emissions.<sup>16</sup> In addition, manufacturer comments note that they are developing new DEF dosing strategies that will result in reduced CO<sub>2</sub> emissions, which may involve increasing the DEF dosing rate. Increasing the DEF dosing rate also makes it more difficult to satisfy a 2:1 tank size ratio without increasing the size of the DEF tank above the size EPA considered appropriate in the context of the (b)(7) process.<sup>17</sup> For this reason, if the application of the 2:1 tank ratio remains in place, the interaction of the new greenhouse gas standards and the DEF tank size requirement may lead to larger DEF tanks, with their accompanying weight increase, in order to accommodate technology advancements developed to reduce CO<sub>2</sub> emissions, which conversely make it more difficult to meet the greenhouse gas requirements.

EPA proposed to not allow 1:1 DEF intervals for heavy-duty engines that are not centrally fueled. EPA noted that manufacturers had not provided sufficient evidence that any change in the maintenance interval is necessary or appropriate throughout the heavy-duty engine category, rather than for particular applications. While we acknowledged that the warnings and inducements in place for failure to replenish DEF will restrict the ability of operators to run without DEF, EPA was concerned that DEF tank ratios of 1:1 may place a greater burden on the operator in terms of the frequency of DEF refills. However, we received no comments from

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<sup>15</sup> 76 FR 57106, September 15, 2011.

<sup>16</sup> 76 FR 57202, September 15, 2011.

<sup>17</sup> The size of the DEF tank is directly proportional to the rate at which DEF is used. For example, for a truck with a 100 gallon fuel tank, meeting a 2:1 ratio would require a 10 gallon DEF tank for a dosing rate of 0.05 gallons of DEF per gallon of fuel, but a 14 gallon tank for a dosing rate of 0.07 gallons of DEF per gallon of fuel.

operators to support our concern. We now believe this is an issue better left to market forces to address.

#### **4. Maintenance Intervals for Nonroad Compression-Ignition Engines**

EPA is also incorporating minimum maintenance intervals for the scheduled maintenance of DEF refills on SCR-equipped NRCI engines. Specifically, we are finalizing the proposed 1:1 ratio (DEF tank range to fuel tank range), which is the same as was approved under the §1039.125(a)(5) process. We received few comments on NRCI DEF refill rates, and those we did receive supported the proposed interval.

As noted in the NPRM, in evaluating minimum DEF refill intervals for NRCI engines, we took into consideration the space and weight constraints typically involved with the range of nonroad compression-ignition engines using SCR systems, including safety and impacts of weight and dosing rates on greenhouse gas emissions and fuel consumption. EPA also took into consideration the likelihood that the maintenance of DEF refills will be performed by the owner or operator.

As with heavy-duty highway engines, the performance inducements related to DEF tank levels make it virtually impossible for engines to operate without DEF. Moreover, the usage patterns for nonroad equipment make them sufficiently similar to centrally-fueled heavy-duty on-highway vehicles that we have a reasonable expectation that DEF tank refills will occur on a timely basis, just as we have observed with highway engines.

#### **IV. Nonroad Engines in Temporary Emergency Service**

In the NPRM published on June 8, 2012 (77 FR 34149), EPA proposed revisions to allow general purpose nonroad engines to obtain temporary relief so that emission controls do not

hinder the engine's performance in limited emergency situations. We believe that in such situations, temporary flexibilities are appropriate because the possibility of risk to human life would outweigh the temporary emissions increases that may occur if SCR-equipped engines are operated without emission controls. Our existing nonroad engine compliance regulations in 40 CFR 1068.101(b)(1)(ii) allow operators to temporarily disable or remove emission controls to address emergency situations, with a limited exemption from the prohibition that normally applies for tampering with certified engines.<sup>18</sup> However, the existing regulations do not allow manufacturers to *design* the emission controls to be disabled or removed in emergency situations. With modern electronically controlled engines, many emission controls are integrated into the engine's control software. By adopting revisions in this rule, we are effectively extending the ability of operators to avoid situations where nonroad engine emission controls could impede the engine from providing life-saving emergency service, subject to the conditions described below. The flexibility we are adopting is very narrow and contains several provisions to ensure the need for the relief. We do not believe it will commonly be used in situations where there is no critical need for such relief.

We received public comments regarding the need for this temporary relief, the definition of emergency situation, the means of triggering the relief, and the duration of the allowed relief. Below, EPA describes the flexibilities that we are adopting for these engines, and the changes from the proposed rule that we have made to address the public comments. Commenters generally supported the proposal, and none argued against allowing such flexibility. Most of the

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<sup>18</sup> "This [tampering] prohibition does not apply in any of the following situations: . . . (ii) You need to modify the engine/equipment to respond to a temporary emergency and you restore it to proper functioning as soon as possible." 40 CFR 1068.101(b)(1)(ii).

substantive comments on these nonroad emergency AECs were those of the engine manufacturers who asked for additional flexibility to improve the effectiveness of the allowance under actual emergency situations. See the Summary and Analysis of Comments document in the rulemaking docket for a more complete discussion of the comments.

EPA's Tier 4 NO<sub>x</sub> emission standards have resulted in an increasing volume of nonroad equipment designed with SCR, which is a NO<sub>x</sub> reduction technology for mobile sources. Nonroad SCR applications are expected to expand significantly in the coming years, and these are highly sophisticated emission control systems that sometimes work in very harsh conditions.

The consumable reductant in an SCR system is typically supplied as a solution of urea in water known as DEF. SCR-equipped engines generally include controls that limit the function of the engines if they are operated without urea, or if the engine's electronic control module (ECM) cannot otherwise confirm that the SCR system is properly operating. Such controls are generally called "inducements," because they induce the operator to properly maintain the SCR emission control system. "Performance inducements" are inducements that affect performance of the engine, and do not include other inducements such as warning lights. EPA has provided information on aspects of SCR system maintenance that discusses possible warnings and other inducements that motivate an operator to ensure continued NO<sub>x</sub> emissions reductions occur.<sup>19</sup> Among the primary system faults that can lead to warnings and performance inducements are: low DEF quantity; poor DEF quality; and a DEF freeze warning. In order for engine ECMs to detect these faults, various monitors and sensors are installed on nonroad equipment. Some

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<sup>19</sup> See EPA's July 26, 2011 Webinar Presentation, *Nonroad SCR Certification*, available at <http://www.epa.gov/otaq/cert/documents/nrci-scr-web-conf.2011-07-25.pdf>

examples of such monitored conditions include: a blocked DEF line or dosing valve; a disconnected or faulty DEF pump; and a disconnected or faulty DEF temperature sensor. It is important to emphasize that these inducements can be triggered because of an actual emission problem (such as a blocked DEF line or an empty DEF tank), or because of a sensor problem that reports a false positive problem even though the emission controls are still functioning properly. While we are confident that DEF is now widely available and easily obtainable across the United States, we are concerned that in emergency circumstances there may be a possibility of temporary disruptions in DEF supply, disruptions in communications between operators and service centers, or delays in response time for engine repair service.

While manufacturers have raised concerns primarily about SCR systems, it is also possible that other advanced emission controls, such as PM traps, could affect performance during emergencies. Since PM traps do not require any secondary fluid (like DEF), EPA did not anticipate that manufacturers would employ performance inducements to assure this technology would function properly in use. However, many manufacturers include engine-protection strategies for trap problems that can have effects on engine performance. While manufacturers have made great progress in eliminating trap-related performance issues, to whatever extent PM traps are used on nonroad engines, there is at least the possibility that they could lead to problems during emergencies.

## **A. Scope of this Flexibility**

### **1. What is an emergency situation?**

For purposes of this rule, EPA proposed that an emergency situation would be one in which the functioning (or malfunctioning) of an engine's emission controls poses a significant risk to human life. Our proposal further explained that two rare conditions would have to be

present for a situation to be the type of emergency where these provisions could apply. First, the engine would be needed to perform work related to reducing risk to human life. Second, the functioning (or malfunctioning) of an engine's emission control system would inhibit operation of the engine, and only a bypass of the normal emission controls would enable the equipment to continue operating temporarily to perform this emergency-related work. While SCR and PM trap systems for nonroad engines are designed to be hardy and robust in the wide range of possible operating environments for nonroad equipment, there is no guarantee that all of these sensors and system components will function properly at all times. In our proposed rule, we focused solely on the system's detection of adequate quantities of DEF and the operator's ability to timely refill DEF. However, as we heard from commenters, a nonroad engine can lose power if any of the emission control system faults that are programmed to trigger performance inducements are detected by the engine's ECM (or an equivalent event for technologies other than SCR).

We received comments asking us to expand our definition of emergency situation to include cases where the emergency was indirectly related to a risk to human life, or where a delayed risk was posed, or where property, welfare, or national security was at risk. We agree there may be a reasonable use of this flexibility where the threat avoided by continued operation of the engine is indirectly tied to human life, such as providing temporary power to a 911 call center. In response to comments, we are adopting regulations that describe an emergency situation as one where the condition of an engine's emission controls poses a significant *direct or indirect* risk to human life. EPA is not finalizing a more precise definition because we know we can not foresee all possible emergency situations, and we understand that the exact threats posed by various situations are rarely known at the time that decisions must be made about activating

emissions control over-rides. As for the other examples of potential risks that could be avoided by continued operation of an engine, EPA is not further expanding the definition of emergency situation. Nonroad engines are generally operated for some beneficial reason. The purpose of the emergency operation provision was not to allow operation of nonroad engines in all situations where there may be benefits for property or welfare, but to have a narrow provision to allow operation of nonroad engines without emission controls where the danger of harm to human life outweighs the also-critical benefits of emission control. Expanding the definition of emergency situation could arguably allow use of uncontrolled nonroad engines in most or all situations for which nonroad engines are normally used, which could severely undercut the benefits of the emission controls.

## **2. What engines are covered?**

The provisions we are adopting are intended primarily to address portable engines used for emergency backup power generation, flood control pumps, or in construction equipment (such as a bulldozer repairing a levee or a crane removing debris). For example, portable diesel-powered generators are often used to provide electrical power after natural disasters. If the generator is providing backup power to a medical facility during an emergency situation, then any interruption in service could risk the lives of the patients. Similarly, if a portable generator is providing backup power to a 911 call center during an emergency situation, then any interruption in service could indirectly pose a risk to human life. However, it is important to note that we are not limiting this flexibility to power generating units, flood control pumps, or construction equipment. These are just a few examples of how an ordinary piece of nonroad equipment could be used in an emergency situation.

While EPA proposed to apply this flexibility to nonroad engines, some commenters asked about the extent to which this allowance would apply for stationary engines. Currently, many NRCI engines are cross-certified for both nonroad (under 40 CFR part 1039) and stationary (under 40 CFR part 60) use because many of the requirements are the same, even though they are covered by different regulatory parts. However, EPA did not propose to apply this provision to stationary engines, and the legal requirements as well as the programmatic treatment of emergency situations, are different for stationary engines than for nonroad engines. Therefore, this final rule does not amend the regulations for stationary engines; dual certification will not be allowed for engines that include these emergency AECDs.

## **B. Regulatory Action**

We are adopting a new section 1039.665 that specifies provisions allowing for AECDs that help to ensure proper function of engines and equipment in emergency situations. It is important to emphasize that EPA is confident that Tier 4 engines will function properly in the vast majority of emergency situations. Thus, we expect the AECDs allowed under this new provision will rarely be activated. We are adopting this provision merely as a precaution to ensure that emission controls do not put any person at risk during an emergency situation. The new regulations are clear that AECDs approved under this section are not defeat devices.

The proposed regulatory changes were intended to allow manufacturers to design into their nonroad engines a dormant AECD that could be activated during an emergency by contacting the engine manufacturer, including an engine dealership or service center. This AECD would act to suspend performance inducements or otherwise disable emission controls. Once active, the proposed AECD would have been allowed to function for 24 engine operating hours. Operators would have been allowed to reactivate the AECD by contacting the engine

manufacturers again. The proposal also included reporting and recordkeeping requirements for operators and manufacturers.

In response to comments, we are finalizing the proposed allowance with some additional flexibility for manufacturers and operators. However, the basic structure remains the same as the proposed structure. The final rule allows EPA to certify a nonroad engine that contains a dormant but pre-armed AECD that can be activated for up to 120 engine hours per use during an emergency to prevent emission controls from interfering with engine operation. As proposed, we are finalizing a provision that enables manufacturers to offer, and operators to request, re-activations of this AECD for additional time in increments of 120 engine hours in cases of a prolonged emergency situation. Operators activating the AECD will be required to report the incident to the manufacturer, and manufacturers will submit an annual report to EPA summarizing the use of the AECD during the prior year. The Summary and Analysis of Comments document in the rulemaking docket provides a more complete discussion of changes from the proposed rule. The details of this allowance are described below.

### **3. What must Manufacturers do for these Requirements?**

#### *a. Basic AECD Criteria*

The new section 1039.665 specifies provisions allowing for AECDs that are necessary to ensure proper function of engines and equipment in emergency situations. It also includes specific criteria that the manufacturer must meet to ensure that any adverse environmental impacts are minimized. These criteria are:

- The AECD must be designed so that it cannot be activated more than once without the specific permission of the certificate holder. Reactivation of the AECD must require the input of a temporary code or equivalent security feature.
- The AECD must become inactive within 120 engine hours of becoming active. The engine must also include a feature that allows the operator to deactivate the AECD once the emergency is over.
- The manufacturer must show that the AECD deactivates emission controls (such as inducement strategies) only to the extent necessary to address the expected emergency situation.
- The engine controls must be configured to record in non-volatile electronic memory the total number of activations of the AECD for each engine.
- The manufacturer must take appropriate additional steps to induce operators to report AECD activation and request resetting of the AECD. We recommend including one or more persistent visible and/or audible alarms that are active from the point when the AECD is activated to the point when it is reset.
- The manufacturer must provide purchasers with instructions on how to activate the AECD in emergency situations, as well as information about penalties for abuse.

Approval of AECDs under the final regulations will also be based on a general criterion that the AECD be consistent with good engineering judgment. When used in our regulations, the phrase “good engineering judgment” has a specific meaning as described in 40 CFR 1068.5. By specifying that the AECD be consistent with good engineering judgment, we address unforeseen technical details that may arise.

*b. Changes from the proposal related to AECD activation*

Compared to the proposal, the provisions being finalized allow for AECD activation with less involvement from the manufacturer. First, under the final regulations, manufacturers may pre-arm the AECD so that operators can activate it initially without first contacting the manufacturer. Under the proposal, operators would have been required to contact the manufacturer to initially activate the AECD. Second, we are allowing the AECD to remain active for up to 120 hours instead of the proposed 24 hours. These two changes are the most significant changes from the proposal. Both of these changes reflect information received during the comment period that demonstrated the potential for delays in getting technical assistance from manufacturers during emergencies, especially for widespread events like hurricanes. Manufacturers indicated that for many engines (perhaps most engines) the type of initial activation envisioned in the proposal could not be done remotely. Our expectation was that operators would be able to activate the AECD by calling the manufacturer to obtain an activation code and then entering the code into the engine's onboard computer. However, manufacturers indicated that not all engines allow operators to interact with the onboard computer (other than to read trouble codes). Rather, for the engines without interactive control panels, it would be necessary for a technician to make a service call to activate the AECD. Even under the best circumstances, this could take a few hours. However, during a natural disaster, this could take several days. Information provided by manufacturers has demonstrated that in order to ensure that reduced performance related to emission controls does not create a significant risk to human life, the operator must be able to access the AECD without manufacturer involvement. We agree with the manufacturers' suggestion to allow initial arming of the AECD so that operators can activate it by taking a relatively simple action such as connecting a jumper in the wiring harness. Manufacturers do not disagree that rearming should require contacting the manufacturer.

It is also not clear that manufacturers will enable any of their engines to be rearmed remotely without a technician. Concerns about the potential for incorrect arming and/or abuse may lead manufacturers to require service calls even for engines that have interactive control panels that could theoretically be rearmed by entering a code provided by the manufacturer. Computer controls to enable remote rearming would need to be both reliable and secure, and manufacturers may determine that the developmental work necessary for this is not justified, given the small number of engines expected to actually activate the AECD even once.

Manufacturers also commented that in some emergencies, it could take several days before technicians could get to all engines needing service. In particular, manufacturers summarized their experience during Hurricane Sandy, which caused major damage in the northeastern United States, including damage to telecommunication, transportation, and power infrastructure. The combination of an increase in the number of engines requiring service (due in part to the number of backup generators being placed into long-term service) and the difficulty for technicians to travel to these engines scattered over such a large area caused long delays for operators needing service. In addition, manufacturers noted that the difficulty experienced by relief workers providing food and water to residents suggests the likelihood of delays in providing DEF for engines during major emergencies since the DEF infrastructure is far less developed than the food and water supply chain. For these reasons, manufacturers argued that limiting the AECD to 24 engine hours could result in engines shutting down before technicians could fix the engine or reset the AECDs. Based on their experience during Hurricane Sandy, manufacturers recommended extending this period to 120 engine hours. For backup generators that run continuously, this would allow manufacturers up to five days to reach each engines needing to have the AECD rearmed, and longer for engines running intermittently. We agree

that limiting the AECD to 24 hours of operation would be insufficient to ensure that emission controls do not inhibit engine operation during prolonged disasters like hurricanes and major storms. Even two or three days may not be enough time to allow a storm to dissipate and roads to be cleared to the point where technicians could reach every engine needing emergency service. In response to this new information, we believe it is prudent to extend this allowance to 120 engine hours, which is equivalent to five operating days for engines running continuously.

We are also adopting two related provisions directed to manufacturers to minimize any abuse of this expended allowance. First, we are requiring manufacturers to include a method of deactivating the AECD after emergencies of short duration. This was not essential under the proposed approach because the AECD would deactivate itself after 24 engine hours. However, now the AECD can remain active for up to 120 engine hours, which could easily be longer than the actual emergency condition. Thus it is necessary to have some way for the operator to deactivate the AECD. Second, we are requiring the manufacturer to take appropriate additional steps to motivate operators to report AECD activation, at which time they may request resetting of the AECD. For example, a manufacturer could include persistent visible and/or audible alarms that are active from the point when the AECD is activated to the point when it is reset. We are also recommending that manufacturers add a secondary time limit for operation in which the AECD is deactivated before the 120-hour time limit is reached. Such a limit could be based on either on a set number of days (for engines that can track time when the engine is not running) or total engine hours including engine hours for which the AECD is not active.

*c. Approval, recordkeeping, and reporting for manufacturers*

We are addressing such AECDs as part of engine certification and will only authorize the certifying manufacturer to incorporate them into engine controls. In unusual circumstances, we

could allow manufacturers to apply an approved emergency AECD to engines and equipment that have already been placed into service as a “field fix”.

Manufacturers may ask for approval at any time. Still, we encourage manufacturers to obtain preliminary approval before submitting an application for certification. Otherwise, our review of the AECD, which may include many unique features, may delay the approval of the application for certification.

The manufacturer is required to keep records to document requests for and use of emergency AECDs under this section and submit a report to EPA within 90 days of the end of each calendar year in which it authorizes use of the AECD.

#### **4. Operator Requirements**

Operators who purchase equipment with this dormant feature will receive instructions on how to activate the AECD in emergency situations, as well as information about penalties for abuse. EPA would consider appropriate use of this feature to be during a situation where operation of a nonroad engine or equipment is needed to protect human life (or where impaired operation poses a significant direct or indirect risk to human life), and obtaining short-term relief from emission controls enables full operation of the equipment. EPA is adopting this provision to give operators the means to obtain short-term relief one time without the need to contact the manufacturer or EPA. In virtually any true emergency situation, delaying the activation to obtain approval could put lives at risk, and would be unacceptable. However, EPA retains the authority to evaluate, after the fact, whether it was reasonable to judge that there was a significant risk to human life to justify the activation of the AECD. Where we determine that it was not reasonable to judge (1) that there was a significant risk to human life; or (2) that the emission control

strategy was curtailing the ability of the engine to perform, the operator may be subject to penalties for tampering with emission controls. The operator may also be subject to penalties for tampering if he continues to operate the engine with the AECD once the emergency situation has ended or the problem causing the emission control strategy to interfere with the performance of the engine has been or can reasonably be fixed. Nevertheless, we will consider the totality of the circumstances when assessing penalties, and retain discretion to reduce penalties where we determine that an operator acted in good faith. In addition, failure of an operator to notify the manufacturer as required by the regulations can also subject the operator to penalties for tampering.

We are finalizing operator requirements largely as proposed. The primary difference between the proposal and FRM is that, as a result of the longer period of time permitted for use of the AECD, we have added a specific prohibition on operating the engine with the AECD beyond the time reasonably needed for such operation. In addition, we have extended the deadline for operators to fully report the AECD activation to the manufacturer. The deadline was 30 calendar days from the incident under the proposal, but is 60 calendar days from the incident (from the day the AECD is first activated) under the final regulations due to concerns about operators' ability to gather the necessary information during the aftermath of a major emergency. If any consecutive re-activations occur, this report is due 60 calendar days from the first activation. The report must include:

- Contact information.
- A description of the emergency situation, including its duration, and supporting information.

- The reason for the activation of the AECD during the emergency situation. For example, lack of DEF or the failure of an emission-related sensor when the engine was needed to respond to an emergency situation.
- Contact information for an official capable of verifying the conditions of the emergency situation (such as a county sheriff, fire marshal, or hospital administrator).
- The engine serial number (or equivalent).
- A description of the extent and duration of the engine operation while the AECD was active, including steps taken to reduce the time of operation with the AECD.

While operators activating the AECD would be required to ultimately provide all of this information, they would be able to have the AECD reset simply by providing the contact information. Failure to provide this information to the manufacturer within the deadline would constitute a violation of the tampering prohibition.

## **V. Emergency Vehicle Provisions: Amendments to Direct Final Rule**

On June 8, 2012, EPA published a direct final rule (DFR) for dedicated emergency vehicles, allowing engine manufacturers to request specific emission controls or settings, approved as Auxiliary Emission Control Devices (AECDs) for new engines, and Emergency Vehicle Field Modifications (EVFMs) for in-use engines that are installed in ambulances and fire trucks. EPA adopted that rule to enable these dedicated emergency vehicles with diesel engines to perform mission-critical life- and property-saving work without risk of losing power, speed or torque due to abnormal conditions of the emission control systems.

EPA received favorable and constructive comments on that DFR and the identical provisions published in the parallel notice of proposed rulemaking. Because EPA determined that none of the comments on the emergency vehicle provisions were adverse, the rule became effective August 7, 2012. We have considered all of the constructive comments received, and we are adopting some minor revisions in response to those comments.

In this action, EPA is revising the definition of emergency vehicle to allow for case-by-case review of applications for AECDs or EVFMs for vehicles in dedicated emergency service that are not ambulances or fire trucks. EPA is also modifying the definition of emergency equipment at 40 CFR 1039.801, clarifying the rule's application to nonroad engines and wildland fire apparatus.

#### **A. On-Highway Vehicles**

In the June 2012 proposed rule, EPA requested comment on our definition of emergency vehicle, specifically whether we should include those equipped with heavy-duty diesel engines that serve other civilian rescue, law enforcement or emergency response functions. We specifically requested information regarding instances of such vehicles experiencing or risking loss of power, speed or torque due to abnormal conditions of the emission control system, and how that may inhibit mission-critical life- and property-saving work. EPA received comments requesting an expansion of the definition of emergency vehicle to include search and rescue trucks, command and communication apparatus, law enforcement vehicles, or other vocational vehicles used for emergency response, but not directly associated with fire suppression or patient transport. In contrast, we received comments asking us to retain the current definition. We did not receive any specific evidence that any of these other vehicles have experienced in-use DPF regeneration difficulties or have duty cycles similar to fire trucks and ambulances. Therefore,

EPA is not able to directly expand the AECDs and EVFMs currently available to ambulances and fire trucks to all these other vehicle types in this action. However, to provide for the occasion where one of these vehicle types, or another vehicle type, might warrant similar treatment in the future, this final rule revises the definition of emergency vehicle at 40 CFR 86.1803-01, to allow for case-by-case approval of AECDs or EVFMs.

Specifically, if an engine manufacturer wishes to receive EPA's approval to install an emergency vehicle AECD in a vehicle other than a fire truck or ambulance, then the manufacturer must demonstrate that the vehicle will regularly be used in emergency situations, and that the functioning or malfunctioning of its standard emission control system may prevent the vehicle from performing as necessary when the vehicle is needed to perform work related to reducing risk to human life.

Where we determine that a new vehicle meets these criteria, the manufacturer may submit an application for an emergency vehicle AECD, subject to review and approval under 40 CFR 86.094-21(b). Where we determine that an in-use vehicle other than a fire truck or ambulance meets the above criteria, a manufacturer may apply for, and EPA may approve, an EVFM for that vehicle, subject to review and approval under 40 CFR 85.1716.

In the DFR, EPA explained that, with our definition of emergency vehicle, it was EPA's intent to include vehicles that are purpose-built and exclusively dedicated to firefighting, emergency/rescue medical transport, and/or performing other rescue or emergency personnel or equipment transport functions related to saving lives and reducing injuries coincident with fires and other hazardous situations.

However, in this final rule EPA is allowing for case-by-case review of applications for AECDs or EVFMs for vehicles that EPA determines will be used in emergency situations where emission control function or malfunction may cause a significant risk to human life. With this revision, it is EPA's intent to include other vehicles that will regularly be used for firefighting, emergency/rescue medical transport, and/or performing other public safety, rescue or emergency personnel or equipment transport functions related to saving lives and reducing injuries coincident with fires and other hazardous situations where the manufacturer can make the requisite showing. The Summary and Analysis of Comments document in the rulemaking docket provides a more detailed discussion of the comments received and our rationale for the changes adopted.

## **B. Nonroad Equipment**

In the direct final rule, EPA adopted provisions for emergency equipment similar to those adopted for fire trucks and ambulances, where manufacturers of nonroad engines powering equipment in dedicated emergency service could apply for, and EPA could approve, AECDs or field modifications to prevent the equipment from losing speed or power due to abnormal conditions of the emission control system, or in terms of preventing such abnormal conditions from occurring during operation related to emergency response. EPA received comments requesting a clarification or expansion of the definition of emergency equipment to include wildfire suppression dozers and dozer transport trucks. We also received comments asking us to retain the current definition. EPA understands that this rule may have had the unintended effect of unduly alarming some equipment operators. EPA has received no information with examples of any in-use nonroad dedicated emergency equipment having reduced performance due to the

emission control system. We adopted these provisions as a precaution in the event that regulatory flexibilities are needed in the future.

Under the regulations published in the DFR, EPA believes that, under the current definition of emergency equipment, EPA may approve requests from manufacturers for AECDs and emergency equipment field modifications (EEFMs) for dedicated fire plows, which are specialty bulldozers designed to assist in suppression of wildfires. This is because we defined emergency equipment to include wildland fire apparatus, which includes “any apparatus . . . designed primarily to support wildland fire suppression operations.”

Since publication of the proposed rule, we have learned from stakeholders that the term “wildland fire apparatus” includes trucks typically registered as motor vehicles, which would be covered under our definition of emergency vehicle and the provisions of 40 CFR part 86, rather than part 1039. Therefore in this action we are revising the definition of emergency equipment to exclude any wildland fire apparatus or aircraft rescue/fire apparatus that are registered as motor vehicles, as they are covered separately under our on-highway provisions. In response to comments, we are revising the definition to include any other equipment that is used in regular emergency service where it has a demonstrated need for power to perform work directly related to protecting human life, and where the functioning or malfunctioning of its standard emission control system may prevent the equipment from performing as necessary when the equipment is needed to perform such work. Because we are making revisions in response to comments, we are taking this opportunity to also add clarifying regulatory text regarding coverage of fire plows. The Summary and Analysis of Comments document in the rulemaking docket provides a more detailed discussion of the comments received and our rationale for the changes adopted.

## **VI. Economic, Environmental, and Health Impacts of Final Rule**

### **A. Economic Impacts**

#### **1. Economic impacts of Emergency Vehicle Rule Revisions**

EPA expects the economic effects of this action to be small, and to potentially have benefits that are a natural result of easing constraints.

Due to the optional and voluntary nature of the emergency vehicle provisions, there are no mandatory direct regulatory compliance costs to engine manufacturers. To the extent manufacturers elect to develop and deploy upgrades to engines for emergency vehicles, they may voluntarily incur some degree of costs.

Because this revision further eases constraints on which vehicles may benefit from these provisions, the economic impacts can only improve with this action. It is presumed that the benefits to society of enabling first responders to act quickly when needed outweigh the costs to society of any temporary increase in emissions from this small segment of vehicles.

#### **2. Economic impacts of SCR Maintenance Provisions**

This action adopts minimum maintenance intervals that may be exceeded without preauthorization. No new regulatory burdens are being imposed. EPA is providing regulatory certainty that will allow affected manufacturers to plan their product development accordingly.

#### **3. Economic Impacts for Nonroad Engines Used in Emergency Situations**

EPA expects the economic effects of this final rule to be small, and to potentially have benefits that are a natural result of easing constraints. Due to the optional and voluntary nature of this action, direct regulatory compliance costs would only be incurred by engine manufacturers to obtain or retain a benefit. To the extent manufacturers elect to develop and deploy upgrades to engines for use in emergency situations, they may incur some costs

associated with engine certification and annual reporting. We do not expect there to be any operator costs for this allowance other than the costs associated with sending written confirmation of use of an optional AECD during an emergency situation to the certificate holder. Since we expect this option will be activated rarely (or perhaps not at all), total costs to operators will be small. Nonetheless, we are preparing a revised Information Collection Request (ICR) to estimate the anticipated reporting burden, as described in Section VIII.B.

## **B. Environmental Impacts**

### **1. Environmental Impacts of Emergency Vehicle Rule Revisions**

We expect any environmental impacts from these revisions will be small. By promulgating these amendments, it is expected that the emissions from this segment of the heavy-duty fleet will not change significantly.

### **2. Environmental Impacts of SCR Maintenance Provisions**

EPA believes that any change in the incidence of emissions-related maintenance occurring in use as a result of this action will not have an effect on emissions. Therefore, there are no anticipated adverse environmental impacts.

### **3. Environmental Impacts for Nonroad Engines Used in Emergency Situations**

EPA does not expect any significant environmental effects as a result of this final rule. This option will be activated rarely (or perhaps not at all) and will only affect emissions for a very short period.

## **VII. Public Participation**

On May 23, 2012, the EPA Administrator signed a Notice of Proposed Rulemaking (NPRM) for the Emergency Vehicle and SCR Maintenance rule. Also on May 23, the NPRM was posted on EPA's web site. Also on that day, EPA contacted interested stakeholders by

phone and email, notifying them of the availability of this material for review and comment. On June 8, 2012, the NPRM was published in the *Federal Register*. EPA held a public hearing on the NPRM in Ann Arbor, Michigan on June 27, 2012. At that hearing, oral comments on the NPRM were received and recorded. The comment period officially remained open through July 27, 2012. 16 separate written comments were received during that period, in addition to the oral testimony. A complete list of organizations and individuals that provided comments on the NPRM is contained in the Summary and Analysis of Comments, available in the docket for this rule (Docket ID EPA-HQ-OAR-2011-1032).

EPA received several comments that did not result in a regulatory change, and that have not otherwise been described in this preamble. In the Summary and Analysis of Comments, EPA addresses these other comments, including comments about the degree of relief offered by the emergency vehicle AECDs and the timing of the AECD approval process.

## **VIII. Statutory and Executive Order Reviews**

### **A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review**

This action is not a “significant regulatory action” under the terms of Executive Order 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011).

### **B. Paperwork Reduction Act**

The information collection requirements in this rule will be submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. The information collection requirements are not enforceable until OMB approves them. OMB has previously approved the information collection requirements contained in the existing

regulations under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 et seq. and has assigned OMB Control Numbers 2060-0104 and 2060-0287. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9. Although the flexibilities described in Section IV are voluntary, we will be proposing to amend our estimates of the information collection burden, based on our estimates of those likely to take advantage of this relief.

The information collection described in this rule is recordkeeping and reporting pertaining to instances of use of a voluntary flexibility provision for nonroad engines. The Agency wishes to track use of this provision, as well as have access to information that can help identify fraudulent use. Engine owners or operators would report information directly to engine manufacturers within a short period after use of this provision, and engine manufacturers would report a summary of this information to EPA on an annual basis. If owners or operators do not report the requested information to manufacturers, they may not retain access to this flexibility provision and may be in violation of the regulations. Section 208(a) of the CAA requires that engine manufacturers provide information the Administrator may reasonably require to determine compliance with the regulations; submission of the information is therefore required to obtain or retain a benefit. We will consider confidential all information meeting the requirements of section 208(c) of the CAA.

The information that is subject to this collection would be collected whenever an equipment operator activates an engine feature that disables emission controls or performance inducement features associated with emission controls. The burden to the manufacturers affected by this rule is hard to estimate because this provision would only be lawfully activated during an emergency situation in the rare instances when the engine's emission controls or performance inducement features may cause a significant risk to human life. It is therefore estimated that, in

any given year, this collection may affect approximately 12 engine manufacturers, reporting to EPA summaries representing 100 individual instances of use of this provision. We estimate the total burden associated with this rule is 110 hours annually (See Table VIII–1). This estimated burden for engine manufacturers is a total estimate for new reporting requirements. Burden is defined at 5 CFR 1320.3(b).

**Table VIII-1 - Burden for Reporting and Recordkeeping Requirements**

Number of owners/operators expected may report to manufacturers	<100
Number of manufacturers expected may report to EPA	<12
Annual labor hours to prepare and submit information	< 5 each
Total Annual Information Collection Burden	110 Hours

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA’s regulations are listed in 40 CFR part 9. When this ICR amendment is approved by OMB, the Agency will publish a technical amendment to 40 CFR part 9 in the Federal Register to display the OMB control number for the approved information collection requirements contained in this final rule.

**C. Regulatory Flexibility Act**

The Regulatory Flexibility Act (RFA) generally requires an agency to prepare a regulatory flexibility analysis of any rule subject to notice and comment rulemaking requirements under the Administrative Procedures Act or any other statute unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. Small entities include small businesses, small organizations, and small governmental jurisdictions.

For purposes of assessing the impacts of this rule on small entities, small entity is defined as: (1) a small business primarily engaged in shipbuilding and repairing as defined by NAICS code 336611 with 1,000 or fewer employees (based on Small Business Administration size standards); (2) a small business that is primarily engaged in freight or passenger transportation on the Great Lakes as defined by NAICS codes 483113 and 483114 with 500 or fewer employees (based on Small Business Administration size standards); (3) a small business primarily engaged in commercial and industrial machinery and equipment repair and maintenance as defined by NAICS code 811310 with annual receipts less than \$7.5 million (based on Small Business Administration size standards); (4) a small governmental jurisdiction that is a government of a city, county, town, school district or special district with a population of less than 50,000; and (5) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of this final rule on small entities, I certify that rule will not have a significant economic impact on a substantial number of small entities.

In determining whether a rule has a significant economic impact on a substantial number of small entities, the impact of concern is any significant adverse economic impact on small entities, since the primary purpose of the regulatory flexibility analyses is to identify and address regulatory alternatives “which minimize any significant economic impact of the rule on small entities.” 5 U.S.C. 603 and 604. Thus, an agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, or otherwise has a positive economic effect on all of the small entities subject to the rule.

This final rule revises regulatory relief provided in the direct final rule for emergency vehicles and provides regulatory certainty related to engine and vehicle maintenance. As such, we anticipate no costs and therefore no regulatory burden associated with this rule. We have concluded that this rule will not increase regulatory burden for affected small entities.

#### **D. Unfunded Mandates Reform Act**

This final rule contains no Federal mandates under the regulatory provisions of Title II of the Unfunded Mandates Reform Act (UMRA) for State, local, or tribal governments. The rule imposes no enforceable duty on any State, local or tribal governments. EPA has determined that this rule contains no regulatory requirements that might significantly or uniquely affect small governments. The agency has determined that this rule does not contain a Federal mandate that may result in expenditures of \$100 million or more for the private sector in any one year. Manufacturers have the flexibility and will likely choose whether or not to use optional AECs based on their strategies for complying with the applicable emissions standards. Similarly, manufacturers may choose to use DEF maintenance intervals longer than the minimums adopted in this action, and manufacturers may elect to use SCR strategies that consume lower amounts of DEF. Thus, this final rule is not subject to the requirements of sections 202 and 205 of the UMRA.

#### **E. Executive Order 13132: Federalism**

Executive Order 13132, entitled “Federalism” (64 FR 43255, August 10, 1999), requires EPA to develop an accountable process to ensure “meaningful and timely input by State and local officials in the development of regulatory policies that have federalism implications.” “Policies that have federalism implications” is defined in the Executive Order to include regulations that have “substantial direct effects on the States, on the relationship between the

national government and the States, or on the distribution of power and responsibilities among the various levels of government.”

This final action does not have federalism implications. It will not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. This rule will apply to manufacturers of heavy-duty diesel engines and not to state or local governments. Thus, Executive Order 13132 does not apply to this action.

**F. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments**

This action does not have tribal implications, as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). This rule will be implemented at the Federal level and will impose compliance costs only on affected engine manufacturers depending on the extent to which they take advantage of the flexibilities offered. Tribal governments will be affected only to the extent they purchase and use vehicles with regulated engines. Thus, Executive Order 13175 does not apply to this final rule.

**G. Executive Order 13045: Protection of Children from Environmental Health and Safety Risks**

Executive Order 13045: “Protection of Children from Environmental Health Risks and Safety Risks” (62 FR 19885, April 23, 1997) applies to any rule that: (1) is determined to be “economically significant” as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the agency must evaluate the

environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the agency.

EPA interprets Executive Order 13045 as applying only to those regulatory actions that are based on health or safety risks, such that the analysis required under section 5-501 of the Order has the potential to influence the regulation. This final rule is not subject to Executive Order 13045 because it does not establish an environmental standard intended to mitigate health or safety risks.

#### **H. Executive Order 13211: Energy Effects**

This final action is not subject to Executive Order 13211 (66 FR 28355, May 22, 2001), because it is not a significant regulatory action under Executive Order 12866.

#### **I. National Technology Transfer Advancement Act**

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (“NTTAA”), Public Law No. 104-113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., materials, specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs EPA to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards.

This action does not involve technical standards. Therefore, EPA is not considering the use of any voluntary consensus standards.

**J. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations**

Executive Order 12898 (59 FR 7629, Feb. 16, 1994) establishes federal executive policy on environmental justice. Its main provision directs federal agencies, to the greatest extent practicable and permitted by law, to make environmental justice part of their mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations in the United States.

EPA has determined that this final rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations.

**K. Congressional Review Act**

The Congressional Review Act, 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. A major rule cannot take effect until 60 days after it is published in the Federal Register. This action is not a “major rule” as defined by 5 U.S.C. 804(2). This rule will be effective on **[INSERT DATE 30 DAYS AFTER PUBLICATION IN THE FEDERAL REGISTER]**.

## List of Subjects

### *40 CFR Part 86*

Environmental protection, Administrative practice and procedure, Confidential business information, Motor vehicle pollution, Reporting and recordkeeping requirements.

### *40 CFR Part 1039*

Environmental protection, Administrative practice and procedure, Air pollution control, Confidential business information, Imports, Labeling, Penalties, Reporting and recordkeeping requirements, Warranties.

Dated: July 31, 2014

Gina McCarthy,

Administrator.

For the reasons set forth in the preamble, the Environmental Protection Agency amends title 40, chapter I of the Code of Federal Regulations as follows:

### **PART 86--CONTROL OF EMISSIONS FROM NEW AND IN-USE HIGHWAY VEHICLES AND ENGINES**

1. The authority citation for part 86 continues to read as follows:

**Authority:** 42 U.S.C. 7401-7671q.

**Subpart A– General Provisions for Emission Regulations for 1977 and Later Model Year New Light-Duty Vehicles, Light-Duty Trucks and Heavy-Duty Engines, and for 1985 and Later Model Year New Gasoline Fueled, Natural Gas-Fueled, Liquefied Petroleum Gas-Fueled and Methanol-Fueled Heavy-Duty Vehicles**

2. Section 86.004-2 is amended by revising the definitions for “Diesel exhaust fluid (DEF)” and “Emergency vehicle” to read as follows:

**§ 86.004–2 Definitions.**

\* \* \* \* \*

*Diesel exhaust fluid (DEF)* means a liquid reducing agent (other than the engine fuel) used in conjunction with selective catalytic reduction to reduce NO<sub>x</sub> emissions. *Diesel exhaust fluid* is generally understood to be an aqueous solution of urea conforming to the specifications of ISO 22241.

*Emergency vehicle* means a vehicle that meets one of the following criteria:

- (1) It is an ambulance or a fire truck.
- (2) It is a vehicle that we have determined will likely be used in emergency situations where emission control function or malfunction may cause a significant risk to human life. For example, we would consider a pickup truck that is certain to be retrofitted with a slip-on firefighting module to become an emergency vehicle, even though it was not initially designed to be a fire truck. Also, a mobile command center that is unable to manually regenerate its DPF

while on duty could be an emergency vehicle. In making this determination, we may consider any factor that has an effect on the totality of the actual risk to human life. For example, we may consider how frequently a vehicle will be used in emergency situations or how likely it is that the emission controls will cause a significant risk to human life when the vehicle is used in emergency situations. We would not consider the pickup truck in the example above to be an emergency vehicle if there is merely a possibility (rather than a certainty) that the vehicle will be retrofitted with a slip-on firefighting module.

\* \* \* \* \*

3. Section 86.004-25 is amended by:
  - a. Revising paragraph (b)(4) introductory text;
  - b. Adding paragraph (b)(4)(v);
  - c. Revising paragraphs (b)(6)(i) introductory text and (b)(6)(i)(H);
  - d. Adding paragraph (b)(6)(i)(I); and
  - e. Revising paragraph (b)(6)(ii) introductory text.

The revisions and additions read as follows:

**§ 86.004-25 Maintenance.**

\* \* \* \* \*

(b) \* \* \*

(4) For diesel-cycle heavy-duty engines, emission-related maintenance in addition to or at shorter intervals than the following specified values will not be accepted as technologically necessary, except as provided in paragraph (b)(7) of this section:

\* \* \* \* \*

(v) For engines that use selective catalytic reduction, the diesel exhaust fluid (DEF) tank must be sized so that DEF replenishment can occur at an interval, in miles or hours of vehicle operation, that is no less than the miles or hours of vehicle operation corresponding to the vehicle's fuel capacity. Use good engineering judgment to ensure that you meet this requirement for worst-case operation. For example, if the highest rate of DEF consumption (relative to fuel consumption) will occur under highway driving conditions (characterized by the SET), the DEF tank should be large enough that a single tankful of DEF would be enough to continue proper operation of the SCR system for the expected highway driving range with a single tank of fuel. Conversely, if the highest rate of DEF consumption (relative to fuel consumption) will occur under city or urban driving conditions (characterized by the transient FTP test), the DEF tank should be large enough that a single tank of DEF would be enough to continue proper operation of the SCR system for the expected city driving range with a single tank of fuel. For engine testing in a laboratory, any size DEF tank and fuel tank may be used; however, for our testing of engines, we may require you to provide us with a production-type DEF tank, including any associated sensors.

\* \* \* \* \*

(6)(i) The following components are defined as critical emission-related components:

\* \* \* \* \*

(H) Components comprising the selective catalytic reduction system (including DEF tank).

(I) Any other component whose primary purpose is to reduce emissions or whose failure would commonly increase emissions of any regulated pollutant without significantly degrading engine performance.

(ii) All critical emission-related scheduled maintenance must have a reasonable likelihood of being performed in-use. The manufacturer shall be required to show the reasonable likelihood of such maintenance being performed in-use, and such showing shall be made prior to the performance of the maintenance on the durability data engine. Critical emission-related scheduled maintenance items which satisfy one of the conditions defined in paragraphs (b)(6)(ii)(A)-(F) of this section will be accepted as having a reasonable likelihood of the maintenance item being performed in-use, except that DEF replenishment must satisfy paragraph (b)(6)(ii)(A) or (F) of this section to be accepted as having a reasonable likelihood of the maintenance item being performed in-use.

\* \* \* \* \*

**Subpart N– Exhaust Test Procedures for Heavy-duty Engines**

4. Section 86.1305 is amended by adding paragraph (i) to read as follows.

**§ 86.1305 Introduction; structure of subpart.**

\* \* \* \* \*

(i) You may disable any AECDs that have been approved solely for emergency vehicle applications under paragraph (4) of the definition of “Defeat device” in § 86.004-2. The emission standards do not apply when any of these AECDs are active.

**Subpart S– General Compliance Provisions for Control of Air Pollution From New and In-Use Light-Duty Vehicles, Light-Duty Trucks, and Complete Otto-Cycle Heavy-Duty Vehicles**

5. Section 86.1803-01 is amended by revising the definitions for “Diesel exhaust fluid (DEF)” and “Emergency vehicle” to read as follows.

**§ 86.1803-01 Definitions.**

\* \* \* \* \*

*Diesel exhaust fluid (DEF)* means a liquid reducing agent (other than the engine fuel) used in conjunction with selective catalytic reduction to reduce NO<sub>x</sub> emissions. *Diesel exhaust fluid* is generally understood to be an aqueous solution of urea conforming to the specifications of ISO 22241.

\* \* \* \* \*

*Emergency vehicle* means one of the following:

(1) For the greenhouse gas emission standards in §86.1818, *emergency vehicle* means a motor vehicle manufactured primarily for use as an ambulance or combination ambulance-hearse or for use by the United States Government or a State or local government for law enforcement.

(2) For the OBD requirements in § 86.1806, *emergency vehicle* means a motor vehicle manufactured primarily for use in medical response or for use by the U.S. Government or a State or local government for law enforcement or fire protection.

(3) For other provisions under this subpart, *emergency vehicle* means a motor vehicle that is either—

(i) An ambulance or a fire truck; or

(ii) A vehicle that we have determined will likely be used in emergency situations where emission control function or malfunction may cause a significant risk to human life. For example, we would consider a pickup truck that is certain to be retrofitted with a slip-on firefighting module to be an emergency vehicle, even though it was not initially designed to be a fire truck. Also, a mobile command center that is unable to manually regenerate its DPF while on duty could be an emergency vehicle. In making this determination, we may consider any

factor that has an effect on the totality of the actual risk to human life. For example, we may consider how frequently a vehicle will be used in emergency situations or how likely it is that the emission controls will cause a significant risk to human life when the vehicle is used in emergency situations. We would not consider the pickup truck in the example above to be an emergency vehicle if there is merely a possibility (rather than a certainty) that the vehicle will be retrofitted with a slip-on firefighting module.

\* \* \* \* \*

6. Section 86.1834-01 is amended by:
  - a. Revising paragraph (b)(4) introductory text ;
  - b. Adding paragraph (b)(4)(iii);
  - c. Revising paragraph (b)(6)(i)(H);
  - d. Adding paragraph (b)(6)(i)(I); and
  - e. Revising paragraph (b)(6)(ii) introductory text.

The revisions and additions read as follows:

**§ 86.1834-01 Allowable maintenance.**

\* \* \* \* \*

(b) \* \* \*

(4) For diesel-cycle vehicles, emission-related maintenance in addition to, or at shorter intervals than the following will not be accepted as technologically necessary, except as provided in paragraph (b)(7) of this section:

\* \* \* \* \*

(iii) For vehicles that use selective catalytic reduction, the replenishment of diesel exhaust fluid shall occur at an interval that is no less than 4,000 miles for typical operation.

\* \* \* \* \*

(6) \* \* \*

(i) \* \* \*

(H) Components comprising the selective catalytic reduction system (including diesel exhaust fluid tank).

(I) Any other component whose primary purpose is to reduce emissions or whose failure would commonly increase emissions of any regulated pollutant without significantly degrading engine performance.

(ii) All critical emission-related scheduled maintenance must have a reasonable likelihood of being performed in-use. The manufacturer shall be required to show the reasonable likelihood of such maintenance being performed in-use, and such showing shall be made prior to the performance of the maintenance on the durability data vehicle. Critical emission-related scheduled maintenance items which satisfy one of the conditions defined in paragraphs (b)(6)(ii)(A) through (F) of this section will be accepted as having a reasonable likelihood of the maintenance item being performed in-use, except that DEF replenishment must satisfy paragraph (b)(6)(ii)(A) or (b)(6)(ii)(F) of this section to be accepted as having a reasonable likelihood of the maintenance item being performed in-use.

\* \* \* \* \*

**PART 1039—CONTROL OF EMISSIONS FROM NEW AND IN-USE NONROAD  
COMPRESSION-IGNITION ENGINES**

7. The authority citation for part 1039 continues to read as follows:

**Authority:** 42 U.S.C. 7401-7671q.

**Subpart B– Emission Standards and Related Requirements**

8. Section 1039.125 is amended by revising paragraph (a)(1) introductory text and adding paragraphs (a)(2)(iii) and (a)(3)(iii) to read as follows:

**§ 1039.125 What maintenance instructions must I give to buyers?**

\* \* \* \* \*

(a) \* \* \*

(1) You demonstrate that the maintenance is reasonably likely to be done at the recommended intervals on in-use engines. We will accept scheduled maintenance as reasonably likely to occur if you satisfy any of the following conditions, with the exception that paragraphs (a)(1)(ii) and (iii) of this section do not apply for DEF replenishment:

\* \* \* \* \*

(2) \* \* \*

(iii) For SCR systems, the minimum interval for replenishing the diesel exhaust fluid (DEF) is the number of engine operating hours necessary to consume a full tank of fuel based on normal usage starting from full fuel capacity for the equipment. Use good engineering judgment to ensure that equipment manufacturers will meet this requirement for worst-case operation by following your installation instructions. For example, if your highest rate of DEF consumption (relative to fuel consumption) will occur under a steady state operating conditions characterized by one of the modes of the applicable steady-state certification test (to the extent that continuous operation at such mode is representative of real-world conditions), the DEF tank should be large

enough that a single tank of DEF would be enough to continue proper operation of the SCR system for the expected operating range with a single tank of fuel at that mode. For engine testing in a laboratory, any size DEF tank and fuel tank may be used; however, for our testing of engines, we may require you to provide us with a production-type DEF tank, including any associated sensors.

(3) \* \* \*

(iii) The provisions of paragraph (a)(2)(iii) of this section apply for SCR systems.

\* \* \* \* \*

9. Section 1039.130 is amended by revising paragraph (b)(3) to read as follows:

**§ 1039.130 What installation instructions must I give to equipment manufacturers?**

\* \* \* \* \*

(b) \* \* \*

(3) Describe the instructions needed to properly install the exhaust system and any other components. Include instructions consistent with the requirements of §1039.205(u). Also describe how to properly size the DEF tank consistent with the specifications in §1039.125(a), if applicable.

\* \* \* \* \*

10. Section 1039.135 is amended by revising paragraph (c)(15) to read as follows:

**§1039.135 How must I label and identify the engines I produce?**

\* \* \* \* \*

(c) \* \* \*

(15) For engines with one or more approved auxiliary emission control devices for emergency equipment applications under §1039.115(g)(4), the statement: “THIS ENGINE IS FOR INSTALLATION IN EMERGENCY EQUIPMENT ONLY.” Note that this label requirement does not apply for engines that include emergency AECDs under §1039.665 rather than §1039.115(g)(4).

\* \* \* \* \*

**Subpart F– Test Procedures**

11. Section 1039.501 is amended by revising paragraph (g) to read as follows:

**§ 1039.501 How do I run a valid emission test?**

\* \* \* \* \*

(g) You may disable any AECDs that have been approved solely for emergency equipment applications under § 1039.115(g)(4). The emission standards do not apply when any of these AECDs are active.

**Subpart G– Special Compliance Provisions**

12. A new §1039.665 is added to subpart G to read as follows:

**§1039.665 Special provisions for use of engines in emergency situations.**

This section specifies provisions that allow for temporarily disabling emission controls during qualified emergency situations. For purposes of this section, a qualified emergency situation is one in which the condition of an engine’s emission controls poses a significant direct or indirect risk to human life. An example of a direct risk would be an emission control condition that inhibits the performance of an engine being used to rescue a person from a life-threatening

situation. An example of an indirect risk would be an emission control condition that inhibits the performance of an engine being used to provide electrical power to a data center that routes “911” emergency response telecommunications.

(a) *Scope.* To facilitate temporarily disabling emission controls during a qualified emergency situation, manufacturers may apply for approval of auxiliary emission control devices (AECDs) under this section. Once activated, an AECD approved under this section may disable any emission controls as necessary to address a qualified emergency situation, subject to the limitations in this section. For the purposes of this section, automatically limiting engine performance to induce an operator to perform emission-related maintenance—such as refilling a DEF tank—is considered an emission control. AECDs approved under this section are not defeat devices, and their proper use during a qualified emergency situation is not prohibited under Clean Air Act section 203 (42 U.S.C. 7522). Manufacturers may apply for AECD approval at any time; however, we encourage manufacturers to obtain preliminary approval before submitting an application for certification. We may allow manufacturers to apply an approved AECD to engines and equipment that have already been placed into service.

(b) *AECD approval criteria.* We will approve an AECD where we determine that the following criteria have been met:

(1) The AECD’s design must be consistent with good engineering judgment and the manufacturer must show that the AECD deactivates emission controls only to the extent necessary to address the expected emergency situation.

(2) Manufacturers must discourage improper activation of the AECD by displaying information where it is clearly visible to the equipment operator when the operator is in a position to activate the AECD. Unless we approve alternate language, state the following:

“EMERGENCY USE ONLY. SEE OWNERS MANUAL. PENALTIES APPLY FOR MISUSE.”

(3) Manufacturers may design and produce their engines with the AECD initially armed to allow operators to activate the AECD one time per engine without any further input or permission from the manufacturer. The AECD may be subsequently reset as specified in paragraph (b)(8) of this section.

(4) Except as allowed by paragraph (b)(3) of this section, AECD activation must require either input of a temporary code, reconfiguration of the engine’s electronic control module by a qualified service technician, or an equivalent security feature that is unique to each engine.

(5) The engine controls must be configured to record the total number of AECD activations in that engine’s nonvolatile electronic memory.

(6) The engine controls must include an operator-activated switch or other element of design to allow the operator to manually deactivate the AECD once a qualified emergency situation has ended. This manual control may include a “confirm-delete” function, as needed, to prevent unintentionally deactivating the AECD. This control may allow for manual reactivation of the AECD provided that the AECD’s automatic deactivation limits in paragraph (b)(7) of this section have not yet been reached, but such reactivation by operators would be allowed only under emergency situations. This manual deactivation control must not deactivate operator inducements required by paragraph (b)(9) of this section.

(7) The AECD must automatically deactivate within a cumulative engine run time of 120 hours after the AECD was initially activated (excluding any time the AECD was deactivated). The AECD may be subsequently reset as specified in paragraph (b)(8) of this section. For emission controls that involve a sequence of increasingly severe engine

performance limits to induce operators to perform emission-related maintenance, the emission controls may be reset to the initial point of that sequence when the AECD is deactivated.

(8) The manufacturer must ensure that resetting the AECD cannot occur without the manufacturer's specific permission, and that resetting the AECD requires either input of a temporary code, reconfiguration of the engine's electronic control module by a qualified service technician, or an equivalent security feature that is unique to each engine. AECD resets may not occur unless either the manufacturer has evidence that the emergency situation is continuing or the operator provides the information required in paragraph (e) of this section, in writing or by any other means.

(9) The manufacturer must take appropriate additional steps to induce operators to report AECD activation and request resetting the AECD. We recommend including one or more persistent visible and/or audible alarms that are active from the point when the AECD is activated to the point when it is reset.

(c) *Required information.* Manufacturers producing engines equipped with an AECD approved under this section must communicate at least the following information in writing to the operator:

(1) Instructions for activating, deactivating, and reactivating the AECD; reporting AECD use; and requesting AECD resets.

(2) A warning that federal regulations prohibit activating the emergency AECD for something other than a qualified emergency situation, failing to disable the emergency AECD after a qualified emergency situation ends, and failing to notify the manufacturer and

send reports as required under paragraph (e) of this section. The warning must also identify the maximum civil penalty for such violations as described in 40 CFR 1068.101.

(3) Notification that the manufacturer will send the information from the operator's report under paragraph (e) of this section to EPA and that federal regulation separately prohibits submitting false information.

(d) *Resetting AECDs.* The operator (or other person responsible for the engine/equipment) may request resetting the AECD at any time. The manufacturer may reset the AECD only if the manufacturer has evidence that the emergency situation is continuing, or after the operator provides the information required in paragraph (e) of this section, in writing or by any other means.

(e) *Operator reporting of AECD use.* The operator (or other person responsible for the engine/equipment) must send a written report to the manufacturer within 60 calendar days after activating an AECD approved under this section. The report must include the following:

(1) Contact name, mail and e-mail addresses, and telephone number for the responsible company or entity.

(2) A description of the emergency situation, the location of the engine during the emergency, and the contact information for an official who can verify the emergency situation (such as a county sheriff, fire marshal, or hospital administrator).

(3) The reason for AECD activation during the emergency situation, such as the lack of DEF, or the failure of an emission-related sensor when the engine was needed to respond to an emergency situation.

(4) The engine's serial number (or equivalent).

(5) A description of the extent and duration of the engine operation while the AECD was active, including a statement describing whether or not the AECD was manually deactivated after the emergency situation ended.

(f) *Operator failure to report.* If the operator fails to submit the report required by paragraph (e) of this section to the manufacturer within 60 days of activating an AECD approved under this section, the manufacturer, to the extent it has been made aware of the AECD activation, must send written notification to the operator that failure to meet the submission requirements may subject the operator to penalties under 40 CFR 1068.101.

(g) *Prohibited acts.* The following actions by the operator are improper use of the AECD and are prohibited under Clean Air Act section 203 (42 U.S.C. 7522):

(1) Activating the emergency AECD for any use other than a qualified emergency situation where the emission control strategy would curtail engine performance.

(2) Failing to disable the emergency AECD after a qualified emergency situation has ended.

(3) Failing to disable the emergency AECD after the problem causing the emission control strategy to interfere with engine performance has been or can reasonably be fixed.

(4) Failing to provide the information required under paragraph (e) of this section within 60 days of AECD activation.

(h) *Manufacturer reporting to EPA.* Within 90 days after each calendar year, the manufacturer must send an annual report to the Designated Compliance Officer describing the use of AECDs approved under this section. A manufacturer may request an extension if it is impractical to meet this deadline as the result of an emergency situation occurring late in a given calendar year. The annual report must include a description of each emergency situation leading to each AECD

activation and copies of the reports submitted by operators (or statements that an operator did not submit a report, to the extent of the manufacturer's knowledge).

(i) *Submissions to EPA.* Notifications and reports submitted to comply with this section are deemed to be submissions to EPA.

(j) *Recordkeeping.* The manufacturer must keep records to document the use of AECDs approved under this section until the end of the calendar year five years after the onset of the relevant emergency situation. We may approve alternate recordkeeping and reporting requirements.

(k) *Anti-circumvention.* We may set other reasonable conditions to ensure that the provisions in this section are not used to circumvent the emission standards of this part.

13. Section 1039.670 is amended by revising paragraphs (b) and (c)(3)(ii) to read as follows:

**§1039.670 Approval of an emergency equipment field modification (EEFM).**

\* \* \* \* \*

(b) Include in your notification a full description of the EEFM and any documentation to support your determination that the EEFM is necessary to prevent the equipment from losing speed, torque, or power due to abnormal conditions of its emission control system during operation related to emergency response, or to prevent such abnormal conditions from occurring during operation related to emergency response. Examples of such abnormal conditions may include excessive exhaust backpressure from an overloaded particulate trap, or running out of diesel exhaust fluid (DEF) for engines that rely on urea-based selective catalytic reduction. Your determination must be based on an engineering evaluation or testing or both.

(c) \* \* \*

(3) \* \* \*

(ii) We will deny your request if we determine that the EEFM is not necessary to prevent the equipment from losing speed, torque, or power due to abnormal conditions of the emission control system during operation related to emergency response, or to prevent such abnormal conditions from occurring during operation related to emergency response.

\* \* \* \* \*

### **Subpart I– Definitions and Other Reference Information**

14. Section 1039.801 is amended by revising the definitions for “Diesel exhaust fluid (DEF)” and “Emergency equipment” to read as follows:

#### **§ 1039.801 What definitions apply to this part?**

\* \* \* \* \*

*Diesel exhaust fluid (DEF)* means a liquid reducing agent (other than the engine fuel) used in conjunction with selective catalytic reduction to reduce NO<sub>x</sub> emissions. *Diesel exhaust fluid* is generally understood to be an aqueous solution of urea conforming to the specifications of ISO 22241.

\* \* \* \* \*

*Emergency equipment* means any of the following types of equipment that is not a motor vehicle:

(1) Specialized vehicles used to perform aircraft rescue and/or fire-fighting functions at airports, with particular emphasis on saving lives and reducing injuries coincident with aircraft fires following impact, or aircraft ground fires.

(2) Wildland firefighting equipment designed primarily to support wildland fire suppression operations. For example, a bulldozer designed with special features for fighting wildfires would be a piece of emergency equipment.

(3) Any other equipment that we have determined will likely be used in emergency situations where emission control function or malfunction may cause a significant risk to human life. For example, we would consider nonroad equipment that is certain to be retrofitted with a slip-on firefighting module to be emergency equipment, irrespective of the equipment manufacturer's original design. In making this determination, we may consider any factor that has an effect on the totality of the actual risk to human life. For example, we may consider how frequently the equipment will be used in emergency situations or how likely it is that the emission controls will cause a significant risk to human life when the equipment is used in emergency situations. We will consider to what extent the flexibility provisions of §1039.665 already address the risk. In the example above, we would not consider equipment to be emergency equipment if there is merely a possibility (rather than a certainty) that the equipment will be retrofitted with a slip-on firefighting module.

\* \* \* \* \*

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