

- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);

- Is not subject to requirements of Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the Clean Air Act; and

- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, this rule does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), because the SIP is not approved to apply in Indian country located in the state, and EPA notes that it will not impose substantial direct costs on tribal governments or preempt tribal law.

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 action 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).

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by January 7, 2011. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this action for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements. (See section 307(b)(2).)

**List of Subjects in 40 CFR Part 52**

Environmental protection, Air pollution control, Incorporation by

reference, Intergovernmental relations, Ozone, Particulate matter, Reporting and recordkeeping requirements, Volatile organic compounds.

Dated: October 27, 2010.

**Al Armendariz,**

*Regional Administrator, Region 6.*

■ 40 CFR part 52 is amended as follows:

**PART 52—[AMENDED]**

■ 1. The authority citation for part 52 continues to read as follows:

**Authority:** 42 U.S.C. 7401 *et seq.*

**Subpart GG—New Mexico**

■ 2. The second table in § 52.1620(e) entitled “EPA Approved Nonregulatory Provisions and Quasi-Regulatory Measures in the New Mexico SIP” is amended by adding an entry to the end to read as follows:

**§ 52.1620 Identification of plan.**

\* \* \* \* \*

(e) \* \* \*

EPA Approved Nonregulatory Provisions and Quasi-Regulatory Measures in the New Mexico SIP

Name of SIP provision	Applicable geographic or nonattainment area	State submittal/effective date	EPA approval date	Explanation
* Interstate transport for the 1997 ozone and PM <sub>2.5</sub> NAAQS.	* Bernalillo County .....	* 07/30/07	* 11/08/10 [ <i>insert FR page number where the document begins</i> ].	* 11/08/10 Approval for revisions to prohibit significant contribution to nonattainment in any other state.

[FR Doc. 2010–28003 Filed 11–5–10; 8:45 am]  
BILLING CODE 6560–50–P

**ENVIRONMENTAL PROTECTION AGENCY**

**40 CFR Parts 86, 1033, 1039, 1042, 1045, 1054, and 1065**

[EPA–HQ–OAR–2010–0142; FRL–9220–6]

RIN 2060–AO69

**Revisions to In-Use Testing for Heavy-Duty Diesel Engines and Vehicles; Emissions Measurement and Instrumentation; Not-to-Exceed Emission Standards; and Technical Amendments for Off-Highway Engines**

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

**ACTION:** Direct final rule.

**SUMMARY:** EPA is taking direct final action on several revisions to EPA’s mobile source emission programs standards and test procedures. EPA believes that each of these is minor and non-controversial in nature. Most of the changes arise from the results of the collaborative test program and related technical work we conducted for the highway heavy-duty diesel in-use testing program. Most noteworthy here is the adoption of a particulate matter measurement allowance for use with portable emission measurement systems. Related to this are two provisions to align the in-use program timing requirements with completion of the program as required in current regulations and the incorporation of revisions to a few technical requirements in the testing regulations based on information learned in this and one other test program. Finally, the

DFR modifies a few transitional flexibilities for locomotive, recreational marine, and Tier 4 nonroad engines and incorporates a handful of minor corrections.

**DATES:** This is effective on January 7, 2011 without further notice, unless EPA receives adverse comment by December 8, 2010 *on any amendment, paragraph, or section of this rule*. If EPA receives adverse comment on this rule or any discrete amendment, paragraph, or section of this rule, we will publish a timely withdrawal of the Direct Final Rule, or the amendment, paragraph, or section of the direct final rule that received adverse comment, in the **Federal Register** informing the public that the rule, or that amendment, paragraph, or section of the rule, will not take effect.

**ADDRESSES:** Submit your comments, identified by Docket ID No. EPA–HQ–

OA-2010-0142, by one of the following methods:

- <http://www.regulations.gov>: Follow the on-line instructions for submitting comments.

- E-mail: [a-and-r-docket@epa.gov](mailto:a-and-r-docket@epa.gov).
- Fax: (202) 566-9744.

- Mail: Environmental Protection Agency, Mail Code: 2822T, 1200 Pennsylvania Ave., NW., Washington, DC 20460. Please include two copies.

- Hand Delivery: U.S. Environmental Protection Agency, EPA Headquarters Library, EPA West Building, Room: 3334, 1301 Constitution Avenue, NW., Washington, DC. Such deliveries are only accepted during the Docket's normal hours of operation, and special arrangements should be made for deliveries of boxed information.

**Instructions:** Direct your comments to Docket ID No. EPA-HQ-OA-2010-0142. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through <http://www.regulations.gov> or e-mail. The <http://www.regulations.gov> Web site is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through <http://www.regulations.gov> your e-mail address will be automatically captured and included as part of the comment

that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment.

Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses. For additional information about EPA's public docket visit the EPA Docket Center homepage at <http://www.epa.gov/oar/dockets.html>.

**Docket:** All documents in the docket are listed in the <http://www.regulations.gov> index. 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, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in <http://www.regulations.gov> or in hard copy at the EPA Docket Center, EPA West Building, EPA Headquarters Library, Room 3334, 1301 Constitution Avenue, 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:** Rich Wilcox, Assessment and Standards Division, Office of Transportation and

Air Quality, 2000 Traverwood Drive, Ann Arbor, MI 48105; telephone number: (734) 214-4390; fax number: (734) 214-4050; e-mail address: [wilcox.rich@epa.gov](mailto:wilcox.rich@epa.gov).

**SUPPLEMENTARY INFORMATION:**

**I. Why is EPA using a Direct Final Rule?**

EPA is publishing this rule without a prior proposal because we view this action as noncontroversial and anticipate no adverse comment. However, in the "Proposed Rules" section of today's **Federal Register** publication, we are publishing a separate document that will serve as the proposal to adopt the provisions in this Direct Final Rule if adverse comments are received on this rule. We will not institute a second comment period on this action, however. Any parties interested in commenting must do so at this time. For further information about commenting on this rule, see the **ADDRESSES** section of this document.

If EPA receives adverse comment or a request for public hearing regarding this rule or any discrete portion of this rule, we will publish a timely withdrawal of the rule, or that portion of the rule that has received adverse comment, in the **Federal Register** informing the public that this direct final rule, or the portion of the rule that has received adverse comment, will not take effect. We would address all public comments in any subsequent final rule based on the proposed rule.

**II. Does this action apply to me?**

This action will affect companies that manufacture and certify all-terrain vehicles for sale in the United States.

Category	NAICS code <sup>a</sup>	Examples of potentially affected entities
Industry .....	336112, 336120	Engine and Truck Manufacturers.
Industry .....	333112	Manufacturers of lawn and garden tractors.
Industry .....	333618	Manufacturers of new engines.
Industry .....	482110, 482111, 482112	Railroad owners and operators.
Industry .....	811112, 811198	Independent commercial importers of vehicles and parts.

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

To determine whether particular activities may be affected by this action, you should carefully examine the regulations. You may direct questions regarding the applicability of this action as noted in **FOR FURTHER INFORMATION CONTACT**.

**III. What should I consider as I prepare my comments for EPA?**

**A. Submitting CBI.** Do not submit this information to EPA through <http://www.regulations.gov>

or e-mail. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD-ROM that you mail to EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not

contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

**B. Tips for Preparing Your Comments.** When submitting comments, remember to:

- Identify the rulemaking by docket number and other identifying

information (subject heading, **Federal Register** date and page number).

- Follow directions—The agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.

- Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.

- Describe any assumptions and provide any technical information and/or data that you used.

- If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.

- Provide specific examples to illustrate your concerns, and suggest alternatives.

- Explain your views as clearly as possible, avoiding the use of profanity or personal threats.

- Make sure to submit your comments by the comment period deadline identified.

#### IV. Details of the Rule

##### A. Revision of 40 CFR Part 86 Subpart T To Revise the In-Use Testing Program for Heavy-Duty Diesel Engines

###### 1. Background

The manufacturer-run, in-use testing program for heavy-duty diesel vehicles that are used on the highway was promulgated in June 2005 to monitor the emissions performance of the engines used in 2007 and later model year vehicles when operated under a wide range of real world driving conditions.<sup>1</sup> The program is specifically intended to monitor compliance with the applicable Not-to-Exceed (NTE) exhaust emission standards for non-methane hydrocarbons (NMHC), carbon monoxide (CO), oxides of nitrogen (NO<sub>x</sub>), and particulate matter (PM). It requires each manufacturer of heavy-duty highway diesel engines to assess the in-use exhaust emissions from their engines using onboard, portable emission measurement systems (PEMS) during typical operation while on the road. The PEMS unit must meet the requirements of 40 CFR part 1065 subpart J.

The program was amended in March 2008 to delay some of the implementation dates and reporting deadlines and to adopt final PEMS measurement “accuracy” margins for gaseous emissions (*i.e.*, NMHC, CO, and

NO<sub>x</sub>).<sup>2</sup> The development of PEMS accuracy margins are further described below.

The in-use testing program began with a mandatory two-year pilot program for gaseous emissions in calendar years 2005 and 2006. The program also included a pilot program for PM emissions in calendar years 2007 and 2008. The programs are fully enforceable after their respective pilot program ends, *i.e.*, the 2007 calendar year for gaseous emissions and the 2009 calendar year for PM emissions. Fully enforceable means that engines found not compliant after this time frame could be subject to a compliance action.

The in-use testing program is based on the NTE emission standards. For the purposes of the in-use testing program, EPA established a vehicle pass/fail criterion for each pollutant that compares a vehicle’s measured in-use emissions to a corresponding numerical compliance limit, *i.e.*, NTE threshold. The NTE threshold for each pollutant is the sum of the NTE standard, any in-use compliance testing margin that is already allowed by the regulations, and a new emission measurement accuracy margin associated with the use of PEMS. The PEMS accuracy margin is the difference between the emission measurement “error” for the portable instrument and the measurement “error” for “laboratory grade” instruments that are used to test vehicles or engines on a dynamometer in a laboratory setting. This accuracy margin is expressed in the same numerical terms as the applicable NTE emission standards, *i.e.*, grams of pollutant per brake horsepower-hour (g/bhp-hr).

When the in-use testing program was first established in June of 2005, there was uncertainty regarding what specific accuracy margins should be used in the in-use testing program, since the portable measurement devices that were expected to be used in the program had not been rigorously tested at that time. As a result, we originally promulgated interim accuracy margins for use in the pilot programs.<sup>3</sup> These interim values were believed to represent an upper bound of the possible instrumentation variability based on our experience with portable and laboratory instruments and test methods. Subsequently, we adopted final values for gaseous pollutants based

on the cooperative research program described below.<sup>4</sup>

In May of 2005, shortly before the in-use test program was promulgated, EPA entered into a memorandum of agreement (MOA) with the California Air Resources Board (CARB) and the manufacturers of heavy-duty highway diesel engines (through the Engine Manufacturers Association (EMA)) to develop “data driven” emission measurement allowances through a comprehensive research, development, and demonstration program for the fully enforceable programs.<sup>5</sup> The overall test program was designed to be completed in two phases. The first phase addressed gaseous emission accuracy margins and the second phase addressed the PM emission accuracy margin. The remainder of this discussion focuses on the final PEMS accuracy measurement for PM, since the final margins for gaseous emissions have already been adopted.

The MOA and the June 2005 final rulemaking addressed the consequences of failing to complete the accuracy margin development work in time for the scheduled start of the PM enforceable program.<sup>6,7</sup> Two provisions in these documents are most relevant to today’s rule. The first provision addresses short term delays in receiving the final accuracy margins. Specifically, for each month the accuracy margins are delayed beyond the agreed upon dates, then the affected enforceable program would be delayed by the same number of months up to three months. The second provision, which is most relevant to today’s action, addresses delays in excess of three months. In particular, if the final accuracy margin and documentation were delayed more than three months from November 1, 2008, then the affected PM enforceable program would be placed in abeyance for a year and the respective pilot program would be continued for calendar year 2009 using the interim

<sup>4</sup> The final additive accuracy margins for the enforceable gaseous programs are: NMHC = 0.01 g/bhp-hr, NO<sub>x</sub> = 0.15 g/bhp-hr, and CO = 0.25 g/bhp-hr.

<sup>5</sup> See “Memorandum of Agreement, Program to Develop Emission Measurement Accuracy Margins for Heavy-Duty In-Use Testing,” dated May 2005. A copy of the memorandum is available in the public docket for this rule and at the EPA/OTAQ Web site (<http://www.epa.gov/otaq/hd-hwy.htm>).

<sup>6</sup> See “Memorandum of Agreement, Program to Develop Emission Measurement Accuracy Margins for Heavy-Duty In-Use Testing,” dated May 2005. A copy of the memorandum is available in the public docket for this rule and at the EPA/OTAQ Web site (<http://www.epa.gov/otaq/hd-hwy.htm>).

<sup>7</sup> See “Control of Emissions of Air Pollution From New Motor Vehicles: In-Use Testing for Heavy-Duty Diesel Engines and Vehicles, 70 FR 34624 (June 14, 2005).

<sup>1</sup> See “Control of Emissions of Air Pollution From New Motor Vehicles: In-Use Testing for Heavy-Duty Diesel Engines and Vehicles, 70 FR 34594 (June 14, 2005).

<sup>2</sup> See “Control of Emissions of Air Pollution From New Motor Vehicles; Emission Measurement Accuracy Margins for Portable Emission Measurement Systems and Program Revisions, 73 FR 13441 (March 13, 2008).

<sup>3</sup> The interim additive accuracy margins for the pilot programs are: NMHC = 0.17 g/bhp-hr, NO<sub>x</sub> = 0.50 g/bhp-hr, CO = 0.60 g/bhp-hr, and PM = 0.10 g/bhp-hr.

allowance. If necessary, this programmatic adjustment would be repeated in subsequent years until the final PM accuracy margin was identified.

## 2. Particulate Matter Emission Measurement Margin for Portable Emission Measurement Systems

The MOA described above called for development of a comprehensive test plan for determining the final emission measurement accuracy margins for the manufacturer-run, in-use testing program.<sup>8</sup> Generally, the detailed plan included a methodology that called for: (1) Comprehensive engine testing in the laboratory to assess the agreed upon sources of possible error and the resultant measurement variability between the PEMS and laboratory instrumentation and measurement methods; (2) the effects of environmental conditions on PEMS error and the variability in key engine parameters supplied by the engine's electronic controls to the PEMS; (3) the development of a statistically-based computer model to simulate effects of all sources of error on the final measurement accuracy margin; and (4) validation of the simulation model results and resulting accuracy margin against data generated through actual in-use field testing using simultaneous on-vehicle measurements from a mobile emissions laboratory (*i.e.*, laboratory-grade instruments mounted inside a trailer) and a PEMS unit. This validation step is important because it provides confidence that the simulation model results reflect reasonable accuracy margin. If the two methods do not statistically agree, then there may be possible errors in the simulation model, the in-use mobile emissions testing results, or both. The test plan also contained the statistically-based algorithms for calculating the data-driven margin for PM from in-use data.

After the simulation modeling results were completed, the test plan called for the final accuracy margin to be determined by the following generalized process. First, select the PEMS with the lowest or minimum positive value. Second, select the calculation method that has the lowest or minimum positive value. Third, and finally, use the results

<sup>8</sup> See "Test Plan to Determine PEMS Measurement Allowance for the PM Emissions Regulated under the Manufacturer-Run Heavy-Duty Diesel Engine In-Use Testing Program, for the U.S. Environmental Protection Agency, California Air Resources Board, and Engine Manufacturers Association", dated November 11, 2008 (published by EPA August 2010), EPA report number: EPA-420-B-10-901. A copy of the report is available in the public docket for this rule and at the EPA/OTAQ Web site (<http://www.epa.gov/otaq/hd-hwy.htm>).

from that method to determine the final measurement accuracy margin.

The cooperative test program for PM as described in the MOA is complete and a final report has been issued.<sup>9</sup> Two PEMS units from different manufacturers were evaluated in the validation phase. When the predicted results from the model simulations for one of the PEMS units were compared to the mobile emissions laboratory results, the model did not validate for PM. It was determined from analyzing the results, that the PEMS exhibited a negative bias that was more pronounced during the validation tests when compared to the model development tests. The model did validate for the PEMS from the other manufacturer. Based on these results for that instrument, EPA, ARB, and EMA selected the final measurement allowance value and agreed to conclude the test program. The resultant final emission measurement accuracy margin is 0.006 g/bhp-hr for PM. The derivation of this value is documented in the final report referenced above.

## 3. Delaying the Enforceable PM Program From 2009 to 2011

As described above, the PM accuracy margin test program has been completed. However due to unexpected delays in beginning the test program, issues in the development of PM PEMS technology, and other challenges in conducting the work, the program took two years longer than originally anticipated. Accordingly, in-use test program regulations require that the first two years of the previously adopted enforceable program, which was originally scheduled for the calendar year 2009, be placed into abeyance for two years. Hence, the enforceable PM program will now begin in 2011 calendar year.

As already noted, the current in-use test program regulations require that the PM pilot program, which began in the 2007 calendar year, be continued for an additional two years through calendar year 2010. This would result in four years of pilot testing for PM. However, our current assessment shows that such extended pilot program testing is unnecessary as described below.

The intent of the original two-year pilot program for PM was to make certain that engine manufacturers had adequate real-world operational

<sup>9</sup> See "PM PEMS Measurement Allowance Determination: Final Report," U.S. Environmental Protection Agency, June 2010 (published by EPA August 2010), EPA report number: EPA-420-R-10-902. A copy of the report is available in the public docket for this rule and at the EPA/OTAQ Web site (<http://www.epa.gov/otaq/hd-hwy.htm>).

experience, *i.e.*, from recruiting vehicles to submitting test reports to EPA, to ensure a successful start of the subsequent fully enforceable program.<sup>10</sup> Manufacturers have reached the May 31, 2010 reporting deadline for the 2007 calendar year PM pilot program. Also, engine manufacturers have completed a substantial amount of in-use testing for gaseous pollutants, *i.e.*, NMHC, CO, and NO<sub>x</sub>. More specifically, two years of gaseous emissions pilot testing (2005 and 2006 calendar years) and two years of the fully enforceable program (2007 and 2008 calendar years) for these pollutants have been completed. Gaseous pollutant in-use testing is in many ways complementary to PM in-use testing because nearly all aspects of the test regime are the same. Even certain parts of the portable emission measurement system instrumentation are used to measure both types of pollutants. Engine manufacturers, therefore, have already had a substantial amount of experience conducting all aspects of in-use testing. As a result, we have concluded that the original intent for conducting the PM pilot program will be achieved by retaining the requirement for two years of pilot testing rather than expanding it to four years. Therefore, we are not extending the PM pilot testing program beyond its initial requirement of two years of testing.

As a result of the decision to delay the enforceable program for PM until the 2011 calendar year and the decision not to extend the two-year pilot program, we needed to reassess the schedule for conducting the required tests for the pilot program. Two considerations are especially important here. First, there is no apparent advantage to require that engine manufacturers conduct testing over a single, consecutive two-year period, *e.g.*, calendar years 2007 and 2008. Second, there may be a benefit to allowing each manufacturer to decide which two years out of the four possible years to conduct its PM pilot testing. This is because the PM PEMS technology has continued to improve and mature as a result of the ongoing cooperative test program for developing the final PM accuracy margin. As a result, a manufacturer may benefit from an additional flexibility in selecting when to complete the PM pilot program in order to gain experience with PEMS that will be more like the instrumentation they may use for the 2011 enforceable program. Therefore,

<sup>10</sup> See "Control of Emissions of Air Pollution From New Motor Vehicles: In-Use Testing for Heavy-Duty Diesel Engines and Vehicles, 70 FR 34614 (June 14, 2005).

we are allowing each manufacturer to report test results in any two out of the potentially four calendar years for completing its testing obligations under the PM pilot program.

Finally, we previously designated the engine families for the 2007, 2008, and 2009 calendar years that each engine manufacturer must test, and we have recently designated engine families for the 2010 calendar year program. Given the new flexibility in choosing which two of the four years to fulfill their testing obligations for the PM pilot program, each engine manufacturer must notify EPA by letter to the Agency's designated compliance officer to explicitly identify both: (1) The designated calendar year(s) where in-use PM pilot program testing will be forgone, and (2) the designated calendar year(s) when their obligations for PM pilot testing will be completed. This notification must be provided to the Agency by January 7, 2011 and must be quickly updated if planned testing changes for any calendar year.

#### 4. Removing the PM Accuracy Test Program From the Regulations

We are taking this opportunity to delete the references in § 86.1935 that pertain to the final report for PM emission accuracy margin and the consequences that would ensue if the report was delayed beyond certain dates. These provisions are no longer needed because accuracy margin for PM pollutants are being promulgated in this Direct Final Rule. This will result in removal of § 86.1935 from the regulations in its entirety and any references made to § 86.1935 throughout 40 CFR part 86.

#### B. Revisions to 40 CFR 1033.150 To Allow the Use of Earlier Model Year Switch Engines With Equivalent Emission Controls

Section 1033.150(e) allows the use of certified 2008 and later nonroad engines in switch locomotives. We are extending the allowance to include nonroad engines produced in model years before 2008 as long as they were certified to the same standards as 2008 engines. This extension will not have any emissions impact since the engines will be required to have the same emission controls with or without the revisions.

#### C. Revision of 40 CFR Part 1065 To Clarify the Requirements for PM PEMS Testing

We are taking this opportunity to make minor technical amendments to 40 CFR part 1065 that are mostly related to the requirements for in-use PM instrumentation and that arose from

knowledge gained during the accuracy margin laboratory and field work mentioned in Section A. above. The changes are specified in the following paragraph. The reasons for these changes are detailed in a separate document.<sup>11</sup> These amendments have no effect on the stringency of the regulations, but simply improve increase testing efficiency, allow new measurement techniques, or otherwise clarify the regulatory requirements.

The amendments are as follows:

1. The requirement to control dilution air temperature has been removed for in-use testing;

2. An in-use filter face velocity specification has been added;

3. An in-use filter face temperature specification has been added;

4. We are specifying that there is no requirement for control of humidity control for in-situ PM analyzers;

5. We are allowing the use of a fixed molar mass for the dilute exhaust mixture for field testing;

6. We are deleting the frequency and rise/fall time specs for inertial batch PM analyzers;

7. We are adding a statement that field testing applies at any ambient temperature, pressure and humidity, unless otherwise specified in the standard setting part (e.g., 40 CFR part 86 for heavy-duty highway engines);

8. We are adding language to state that EPA approves of electrostatic deposition technique for PM collection and that the technique must meet 95% collection efficiency, as validated by the manufacturer;

9. We are excluding PM PEMS from the system-response and updating-recording verification requirements;

10. We are clarifying when an HC contamination check of the sampling system should take place;

11. We are allowing the use of a PM loss correction to account for PM loss in the inertial balance, including the sample handling system for in-use testing only;

12. We are making a clarification on how to handle positive displacement pump (PDP) pressure calibrations at maximum pressure;

13. We are allowing a restart of the hot portion of the transient test if the hot start was void;

14. We are making some language changes to make the language used more consistent throughout the document; and

15. We are correcting typographical errors.

<sup>11</sup> See "List of Part 1065 Changes Resulting from HDIUT PM MA Program", dated June 2010. A copy of this list is available in the public docket for this rule.

#### D. Revision of 40 CFR 1065.140 To Allow the Use of Partial Flow Dilution Systems for Laboratory Transient Test Cycle PM Measurement

We are taking this opportunity to make changes to 40 CFR 1065.140(d) to allow the use of partial flow sampling systems for measurement of PM during transient test cycles for laboratory testing.

PM measurement has been traditionally performed using a full flow dilution tunnel where the entire amount of engine exhaust gas is collected and made available for sampling. With this sampling method, commonly referred to as a constant volume sampler (CVS), the size of the dilution tunnel depends on the exhaust gas volume, thus the greater the volume of exhaust gas emitted from the engine, the larger the dilution tunnel must be. As an alternative, a partial-flow dilution tunnel allows sampling of part of the total exhaust flow, which reduces the size of the sampling system. One of the drawbacks to partial flow sampling systems in the past was that the flow controllers did not have a fast enough response time to accurately respond to the changing exhaust flow rates during a transient cycle. Thus partial flow sampling systems were only allowed for use during steady-state cycle testing. Recent advancements in the development of fast response flow control systems, along with the advancement in the understanding of PM formation characteristics have made partial flow sampling systems a viable technology for use in transient applications when compared to the CVS reference method.

We currently allow the use of partial flow sampling systems for measurement of PM for steady-state and ramped modal cycle (RMC) testing and have put specifications in place in 40 CFR 1065.140(e) with respect to dilution air temperature, minimum dilution ratio, filter face temperature, and residence time to control PM formation. These specifications have further worked to improve the accuracy of partial flow systems when compared to the CVS.

We initially proposed this allowance in the locomotive and compression-ignition marine engines less than 30 liters per cylinder NPRM, but did not finalize it due to concerns over the viability of partial flow systems in transient applications.<sup>12 13</sup> Since

<sup>12</sup> See "Proposed Rule: Control of Emissions of Air Pollution from Locomotives and Marine Compression-Ignition Engines Less than 30 Liters per Cylinder", 72 FR 34594 (April 3, 2007).

<sup>13</sup> See "Final Rule: Control of Emissions of Air Pollution from Locomotives and Marine Compression-Ignition Engines Less Than 30 Liters per Cylinder", 73 FR (May 6, 2008).

promulgating that rule, EPA has worked with industry to gain a better understanding of partial flow systems and the improvements that have been made over the past decade. We have also reviewed additional data supplied by engine and partial flow system equipment manufacturers showing comparisons between the traditional CVS and partial flow systems for PM measurement.<sup>14</sup> These data have shown that partial flow measurement of PM is a viable tool for measurement in transient applications and these systems can meet the dilution parameter control requirements in 40 CFR 1065.140 as well as the flow rate linearity requirements in 40 CFR 1065.307, Table 1, and the validation of proportional flow control requirement in 40 CFR 1065.545. Further, correlation testing involving partial flow systems and CVS based systems has shown that the partial flow method is equivalent to the CVS method via t- and f-test analysis. In light of these recent disclosures, EPA will allow the use of this measurement technique.<sup>15</sup>

*E. Revision of 40 CFR 86.1370 To Clarify How To Handle NTE Events During Regeneration*

We are taking this opportunity to further define how to handle regeneration events that occur during real world in-use NTE tests. The current text as it exists in 40 CFR 86.1370–2007(d)(2) has caused confusion with respect to determination of the NTE minimum averaging period.

This revision establishes a new method to calculate the minimum averaging period. The intent here is to minimize the number of voided NTE events due to regeneration for systems that undergo frequent and/or infrequent regeneration, while ensuring that the NTE averaging time is appropriate based on the regeneration time.

The regeneration duty cycle fraction over the course of the entire test day can be determined by dividing the mean time of the complete regeneration events (state 2) by the sum of the mean time of the non-regeneration events (state 0) and the mean time of the complete

regeneration segments including time in those segments where regeneration is pending (states 1 and 2).

To determine whether an NTE that includes a regeneration event is valid, the minimum average time is determined by summing the portion of the NTE event that occurs during regeneration and dividing by the fraction of time over the entire sampling period, *i.e.*, shift-day, that regeneration occurred for complete regeneration events. This latter term is referred to as the regeneration fraction. If the duration of the NTE is greater than or equal to this minimum average time, then the NTE event is valid.<sup>16</sup> For example, if an NTE event was 125 seconds long and contained 25 seconds of regeneration, and regeneration fraction was 0.24, the minimum averaging time for this NTE event is 104 seconds ( $25/0.24=104$ ). In this example, the NTE event would be valid.

*F. Revision of 40 CFR 1065.915 To Allow the Use of ECM Fuel Rate To Determine NTE Mass Emission Rate*

We are taking this opportunity to allow the use of fuel rate data that is available from the engine's electronic control module (ECM) along with other information, including the CO<sub>2</sub>, CO, and hydrocarbon emissions to calculate the requisite exhaust flow rate for mass emission rate determination. We believe that all large horsepower nonroad diesel engines will be equipped with ECMs that report fuel flow within the time frame proposed for implementation of the in-use testing program. The ECM fuel flow rate-based methodology currently requires prior EPA approval under 40 CFR 1065.915(d)(5)(iv). This pre-approval requirement is based on past concerns with respect to the accuracy of the ECM broadcast fuel flow rate when calculating brake-specific emission results in the absence of an exhaust flow measurement. However, more recent information from the cooperative in-use emission measurement allowance program for PEMS showed that emission calculations incorporating the ECM fuel rate yielded results comparable to those using approved calculation methodology.<sup>17</sup> Based on that study and the inclusion of ECM derived BSFC in

the determination of the accuracy margin, we are proposing to eliminate the requirement that a manufacturer must have EPA approval to use this method to determine exhaust flow rates via an amendment to 40 CFR 1065.915.

*G. Revision of 40 CFR 1045.145 To Extend the Notification Deadline for Small-Volume Manufacturers of Marine SI Engines*

Our current regulations for sterndrive/inboard marine SI engines allow for delayed implementation of emission standards for small-volume manufacturers making sterndrive/inboard marine SI engines (*see* § 1045.145(a)). One requirement related to this delay is for the manufacturer to notify EPA before the standards take effect. However, we have learned that there are some small-volume engine manufacturers that have not yet learned about the new emission standards. We believe it is appropriate to extend the notification deadline for these manufacturers by one year to allow for further communications related to the new requirements. With the later deadline we also need to add language in the regulation to clarify that manufacturers need to notify EPA before introducing such engines into U.S. commerce for them to have a valid temporary exemption. These revisions address the logistical challenges related to implementing the new standards without changing the effective implementation schedule of the original rule.

*H. Revision of 40 CFR 1039.102 To Enable Phase Out of Tier 3 Diesel Engines*

When creating 40 CFR 1039.102 (69 FR 39213, June 29, 2004), we included provisions intended to allow engine manufacturers to use emission credits to continue producing a small number of Tier 3 nonroad diesel engines after the Tier 4 standards began to apply. However, we now realize that the provisions may not work as intended because the Tier 4 averaging programs inadvertently do not allow manufacturers to show compliance with the applicable 0.19 g/kW-hr NMHC standard using credits. In today's rulemaking, we are amending this section to allow manufacturers to use credits to show compliance with alternate NO<sub>x</sub> + HC standards. The alternate NO<sub>x</sub> + NMHC standards for each power category would be equal to the numerical value of the applicable alternate NO<sub>x</sub> standard of § 1039.102(e)(1) or (2) plus 0.10 g/kW-hr. Engines certified to these NO<sub>x</sub> + NMHC standards may not generate

<sup>14</sup> See "Sierra Instruments Model BG-3 vs. CVS Multiple Engine Correlation Study", dated November 2009. A copy of this list is available in the public docket for this rule.

<sup>15</sup> Compliance evaluation when conducted by the Administrator, independent of the method for dilution, become the official results. Manufacturers should be prepared to demonstrate compliance with the full flow CVS even if initial certification was conducted using a partial flow dilution system. EPA will continue to use the CVS-based PM measurement method for our own compliance testing regardless of what method the manufacturer used to certify the engine.

<sup>16</sup> See, Letter from EMA to EPA, "Treatment of Overlapping NTE and Regeneration Events, (July 29, 2009). A copy of the report is available in the public docket for this rule.

<sup>17</sup> See "Determination of PEMS Measurement Allowances for Gaseous Emissions Regulated under the Heavy-Duty Diesel Engine In-Use Testing Program, dated April 2007. A copy of the report is available in the public docket for this rule and at the EPA/OTAQ Web site (<http://www.epa.gov/otaq/hd-hwy.htm>).

emission credits. Since additional 0.10 g/kW-hr for the combined standard is less than the otherwise applicable NMHC standard, there would be a small environmental benefit when manufacturers choose to certify to the alternate standards.

*I. Revision of 40 CFR 1039.625 To Revise TPEM Provisions for Special High-Altitude Equipment*

We have been made aware of a number of unique challenges involved in implementing Tier 4 requirements for certain specialized high-altitude equipment. In setting the Tier 4 standards in 2004, we anticipated that typical engineering challenges would arise in redesigning machines to use the new engines, and we restructured our transition program for equipment manufacturers, first established in the Tier 2/Tier 3 rule, to help manufacturers deal with these challenges. This important flexibility program has been highly successful. We do feel that a minor adjustment is warranted for the specialized high-altitude equipment identified.

This equipment is designed for use on snow and, for at least some of its operating life, at elevations more than 9,000 feet above sea level. The applications are ski area snow groomers, both alpine and cross-country, and personnel transporters used in search and rescue operations, and maintenance of utility lines and towers.

One manufacturer of this equipment, has identified a number of technical issues specific to the equipment, including:<sup>18</sup>

1. *Reliability*: The performance of the new engine and aftertreatment components is untested at high altitudes in winter conditions. Engine operating temperatures may be elevated at higher altitudes with potential impacts on engine performance and reliability;

2. *Cold Starting*: Diesel cold starting is aggravated at high altitudes due to lower oxygen availability. No-start situations for high-altitude equipment may be life threatening;

3. *Engine power*: The degree to which a Tier 4 engine's power is reduced, *i.e.*, derated, with increasing altitude is unproven. Excessive derate would hinder the vehicles' snow grooming function and performance;

4. *Particulate filter regeneration*: These machines operate for long periods traveling downhill with little engine load. Regeneration must be validated;

5. *Functioning in extreme conditions*: Snow groomers must reliably push and

grind snow and ice in extreme conditions, including while moving up and down steep grades; and

6. *Weight*: The added weight of Tier 4 aftertreatment and cooling components will directly affect ground pressure, which can hamper a snow groomer's essential function.

In identifying these issues, the manufacturer stated that it expects two, possibly three, winters of prototype testing are needed to work through these issues and believes that flexibility in the use of exemptions provided by the Tier 4 transition program is key to enabling this. We have evaluated the technical issues, and have concluded there are likely to be some unique challenges in implementing Tier 4 for high-altitude equipment of this type.

In response, to provide modest but meaningful additional flexibility, we are removing the single engine family restriction for the use of the small volume provision allowing 700 exempted units over seven years. This additional flexibility would only apply for manufacturers of specialized high-altitude equipment (designed to commonly operate above 9,000 feet), and only in the first two model years of Tier 4 standards. Afterward, the single engine family restriction would apply. In no case would the 700 unit maximum over seven years be exceeded.

We do not expect that this change will result in a significant negative impact on any engine or equipment manufacturers. Engine manufacturers are already expecting to produce some Tier 4 engines for the transition program, and the number of additional exempted engines will be relatively small. Equipment manufacturers can either take advantage of this change, or are already able to exempt the same number of affected machines for several years under the existing transition program provisions.

We also believe the impact of this modification on Tier 4 environmental benefits will be negligible, given that: (1) It only applies to the small volume portion of the transition program, (2) the total U.S. annual sales of specialized high-altitude equipment is, at most, a few hundred, (3) much of this equipment operates for only a part of the year, (4) the modification only applies in the first two Tier 4 model years, and does not increase the overall exemption limit of 700 over seven years.

*J. Revision of 40 CFR 1054.101 To Clarify Prohibitions Related to Handheld Small SI Engines Installed in Nonhandheld Equipment*

The existing regulations related to emission standards for nonroad spark-

ignition engines below 19 kW specifically prohibit the sale of nonhandheld equipment equipped with handheld engines. The regulations in § 1054.101 state that handheld engines may not be installed in nonhandheld equipment, but the regulatory text does not state that this is prohibited under § 1068.101 or identify which penalty provisions apply. In this rule we are adding a statement to § 1054.101(e) to describe how this action violates the prohibited acts identified in § 1068.101, consistent with the regulations under 40 CFR part 90.

*K. Revision of 40 CFR 1042 Appendix II To Correct Time Weighting at Mode for Engines Certifying to the E2 RMC Cycle*

The existing regulations contain an error in the time at mode for each steady-state point when certifying an engine to the E2 ramped modal cycle (RMC). When the E2 RMC cycle was generated, the times at mode were not correct based on the weighting of the discrete-mode cycle. In this rule we are correcting the time at mode for all four steady-state portions of the E2 RMC cycle to correspond with the mode weighting for the discrete-mode test.

**V. Statutory and Executive Order Reviews**

*A. Executive Order 12866: Regulatory Planning and Review*

This action is not a "significant regulatory action" under the terms of Executive Order (EO) 12866 (58 FR 51735, October 4, 1993) and is therefore not subject to review under the EO. EPA is taking direct final action on several revisions to EPA's mobile source emission programs standards and test procedures. This direct final rule merely contains several minor and noncontroversial amendments to EPA's mobile source emission programs as described in the Summary and Section IV. Details of the Rule.

*B. Paperwork Reduction Act*

This action does not impose a new information collection burden under the provisions of the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* Burden is defined at 5 CFR 1320.3(b). It merely contains several minor and noncontroversial technical amendments to EPA's mobile source emission programs as described in the Summary and Section IV. Details of the Rule. Therefore, there are no new paperwork requirements associated with this rule.

*C. Regulatory Flexibility Act*

For purposes of assessing the impacts of this final rule on small entities, a small entity is defined as: (1) A small

<sup>18</sup>E-mail from Jean-Claude Perreault, Prinoth Ltd, to Byron Bunker, U.S. EPA, "Prinoth technical information", June 8, 2010.

business that meet the definition for business based on SBA size standards at 13 CFR 121.201; (2) 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 (3) 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 today's final rule on small entities, EPA has concluded that this action will not have a significant economic impact on a substantial number of small entities. This final rule will not impose any new requirements on small entities.

EPA has determined that it is not necessary to prepare a regulatory flexibility analysis in connection with this direct final rule. It merely contains several minor and noncontroversial technical amendments to EPA's mobile source emission programs as described in the Summary and Section IV. Details of the Rule. We have, therefore, concluded that today's final rule will not affect the regulatory burden for small entities and will not have a significant economic impact on a substantial number of small entities.

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

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for federal agencies to assess the effects of their regulatory actions on state, local, and tribal governments and the private sector. Under Section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "federal mandates" that may result in expenditures to state, local, and tribal governments, in the aggregate, or to the private sector, of \$100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, Section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of Section 205 do not apply when they are inconsistent with applicable law. Moreover, Section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation of why such an alternative was adopted.

Before EPA establishes any regulatory requirements that may significantly or

uniquely affect small governments, including tribal governments, it must have developed under Section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

This rule contains no federal mandates for state, local, or tribal governments as defined by the provisions of Title II of the UMRA. The rule imposes no enforceable duties on any of these governmental entities. Nothing in the rule would significantly or uniquely affect small governments. EPA has determined that this rule contains no federal mandates that may result in expenditures of more than \$100 million to the private sector in any single year. It merely contains several minor and noncontroversial technical amendments to EPA's mobile source emission programs as described in the Summary and Section IV. Details of the Rule. The requirements of UMRA, therefore, do not apply to this action.

#### *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" are 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."

Under Section 6 of Executive Order 13132, EPA may not issue a regulation that has federalism implications, that imposes substantial direct compliance costs, and that is not required by statute, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by State and local governments, or EPA consults with State and local officials early in the process of developing the regulation. EPA also may not issue a regulation that has federalism implications and that preempts State law, unless the Agency consults with State and local officials early in the process of developing the regulation.

Section 4 of the Executive Order contains additional requirements for rules that preempt State or local law, even if those rules do not have federalism implications (*i.e.*, the rules 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). Those requirements include providing all affected State and local officials notice and an opportunity for appropriate participation in the development of the regulation. If the preemption is not based on express or implied statutory authority, EPA also must consult, to the extent practicable, with appropriate State and local officials regarding the conflict between State law and Federally protected interests within the agency's area of regulatory responsibility.

This rule 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 direct final rule merely contains several minor and noncontroversial technical amendments to EPA's mobile source emission programs as described in the Summary and Section IV. Details of the Rule.

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

Executive Order 13175, entitled "Consultation and Coordination with Indian Tribal Governments" (59 FR 22951, November 6, 2000), requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." "Policies that have tribal implications" is defined in the Executive Order to include regulations that have "substantial direct effects on one or more Indian tribes, on the relationship between the Federal government and the Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes."

This rule does not have tribal implications. It will not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes, as specified in Executive Order 13175.

This rule does not uniquely affect the communities of Indian Tribal Governments. Further, no circumstances specific to such communities exist that would cause an impact on these communities beyond those discussed in the other sections of this rule. This direct final rule merely contains several minor and noncontroversial technical amendments to EPA's mobile source emission programs as described in the Summary and Section IV. Details of the Rule. Thus, Executive Order 13175 does not apply to this 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, Section 5-501 of the Order directs the Agency to 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.

This rule is not subject to the Executive Order because it is not economically significant as defined in EO 12866, and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children. This direct final rule merely contains several minor and noncontroversial technical amendments to EPA's mobile source emission programs as described in the Summary and Section IV. Details of the Rule.

*H. Executive Order 13211: Actions That Significantly Affect Energy Supply, Distribution, or Use*

This rule is not a "significant energy action" as defined in Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use" (66 FR 28355, May 22, 2001) because it is not likely to have a significant adverse effect on the supply, distribution or use of energy. This direct final rule merely contains several and noncontroversial minor technical amendments to EPA's mobile source emission programs as described in the Summary and Section IV. Details of the Rule.

*I. National Technology Transfer and Advancement Act*

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 ("NTTAA"), Public Law 104-113, Section 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (such as 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 direct final rule does not involve technical standards. It merely contains several minor and noncontroversial technical amendments to EPA's mobile source emission programs as described in the Summary and Section IV. Details of the Rule. Thus, we have determined that the requirements of the NTTAA do not apply.

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

Executive Order (EO) 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 rule will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because it does not affect the level of protection provided to human health or the environment. This direct final rule merely contains several minor and noncontroversial technical amendments to EPA's mobile source emission programs as described in the Summary and Section IV. Details of the Rule.

*K. Congressional Review Act*

The Congressional Review Act, 5 U.S.C. 801 et seq., as amended 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 Congress and the Comptroller General of the United States. We 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 before 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 direct final rule is effective on January 7, 2011.

*L. Statutory Authority*

The statutory authority for this action comes from 42 U.S.C. 7401-7671q and 33 U.S.C. 1901-1915.

**List of Subjects**

*40 CFR Part 86*

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

*40 CFR Part 1033*

Environmental protection, Administrative practice and procedure, Confidential business information, Incorporation by reference, Labeling, Penalties, Railroads, Reporting and recordkeeping requirements.

*40 CFR Part 1039*

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

*40 CFR Part 1042*

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

*40 CFR Part 1045*

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

*40 CFR Part 1054*

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

*40 CFR Part 1065*

Administrative practice and procedure, Air pollution control, Reporting and recordkeeping requirements, Research.

Dated: October 29, 2010.

**Lisa P. Jackson,**  
*Administrator.*

■ For the reasons set out in the preamble, title 40, chapter I of the Code of Federal Regulations is amended 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 N—[Amended]**

■ 2. Section 86.1370–2007 is amended revising paragraph (d) to read as follows:

**§ 86.1370–2007 Not-To-Exceed test procedures.**

\* \* \* \* \*

(d) *Not-to-exceed control area limits.*

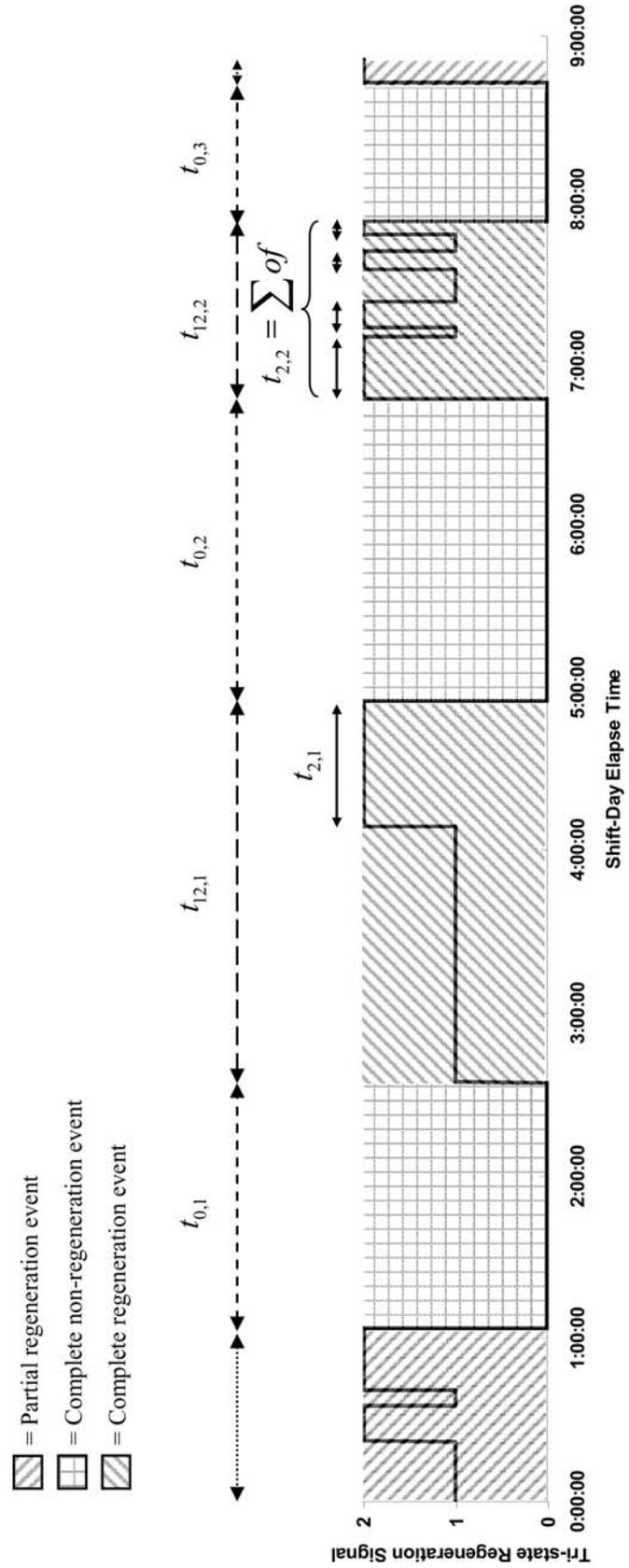
(1) When operated within the Not-To-Exceed Control Area defined in paragraph (b) of this section, diesel engine emissions shall not exceed the applicable Not-To-Exceed Limits specified in § 86.007–11(a)(4) when averaged over any time period greater than or equal to 30 seconds, except where a longer minimum averaging period is required by paragraph (d)(2) of this section.

(2) For engines equipped with emission controls that include discrete regeneration events and that send a recordable electronic signal indicating the start and end of the regeneration event, determine the minimum averaging period for each NTE event that includes regeneration active operation as described in paragraph (d)(2)(i) of this section. This minimum averaging period is used to determine whether the individual NTE event is a valid NTE event. For engines equipped with emission controls that include multiple discrete regeneration events (e.g., de-soot, de-NO<sub>x</sub>, de-SO<sub>x</sub>, etc.) and associated electronic signals, if an NTE event includes regeneration active operation on multiple regeneration signals, determine the minimum averaging period for each regeneration

signal according to paragraph (d)(2)(i) of this section and use the longest period. This minimum averaging period applies if it is longer than 30 seconds. The electronic signal from the engine's ECU must indicate non-regeneration and regeneration operation. Regeneration operation may be further divided into regeneration pending and regeneration active operation. These are referred to as states 0, 1, and 2 for non-regeneration, regeneration pending, and regeneration active operation, respectively. No further subdivision of these states are allowed for use in this paragraph (d)(2). Where the electronic signal does not differentiate between regeneration pending and active operation, take the regeneration signal to mean regeneration active operation (state 2). A complete non-regeneration event is a time period that occurs during the course of the shift-day that is bracketed by regeneration operation, which is either regeneration active operation (state 2) or regeneration pending operation (state 1). A complete regeneration event is a time period that occurs during the course of the shift-day that is bracketed before and after by non-regeneration operation (state 0); a complete regeneration event includes any time in the event where regeneration is pending (state 1). The following figure provides an example of regeneration events during a shift-day:

**BILLING CODE 6560–50–P**

Figure 1 of § 86.1370-2007  
 Regeneration Events During a Shift-day



(i) Calculate the minimum averaging period,  $t_{NTE,min}$ , for each candidate NTE event as follows:

$$t_{NTE,min} = \frac{\sum_{i=1}^N t_{2,NTE,i}}{RF}$$

Where:

- $i$  = an indexing variable that represents periods of time within the candidate NTE event where the electronic signal indicates regeneration active operation (state 2).
- $N$  = the number of periods of time within the candidate NTE event where the electronic signal indicates regeneration active operation (state 2).
- $t_{2,NTE,i}$  = the duration of the  $i$ -th time period within the candidate NTE event where the electronic signal indicates regeneration active operation (state 2), in seconds.
- $RF$  = regeneration fraction over the course of the shift-day, as determined in paragraph (d)(2)(ii) of this section.

(ii) Calculate the regeneration fraction,  $RF$ , over the course of a shift-day as follows:

$$RF = \frac{\sum_{i=1}^{N_{12}} \sum_{j=1}^{N_{2,i}} t_{2,i,j}}{N_{12} \left( \frac{\sum_{k=1}^{N_0} t_{0,k}}{N_0} + \frac{\sum_{i=1}^{N_{12}} t_{12,i}}{N_{12}} \right)}$$

Where:

- $i$  = an indexing variable that represents complete regeneration events within the shift-day.

- $j$  = an indexing variable that represents periods of time within the  $i$ -th complete regeneration event where the electronic signal indicates regeneration active operation (state 2).
- $k$  = an indexing variable that represents complete non-regeneration events within the shift-day.
- $N_0$  = the number of complete non-regeneration events within the shift-day.
- $N_{12}$  = the number of complete regeneration events within the shift-day.
- $N_{2,i}$  = the number of periods of within the  $i$ -th complete regeneration event where the electronic signal indicates regeneration active operation (state 2).
- $t_{0,k}$  = the duration of the  $k$ -th complete non-regeneration event within the shift-day, in seconds.
- $t_{12,i}$  = the duration of the  $i$ -th complete regeneration event within the shift-day, in seconds, including time in those events where regeneration is pending (state 1).
- $t_{2,i,j}$  = the duration of the  $j$ -th time period within the  $i$ -th complete regeneration event where the electronic signal indicates regeneration active operation (state 2), in seconds. Note that this excludes time in each complete regeneration event where regeneration is pending (state 1).

(iii) If either  $N_0$  or  $N_{12}$  are zero, then  $RF$  cannot be calculated and all candidate NTE events that include regeneration active operation are void.

(iv) Compare the minimum averaging period for the candidate NTE event,  $t_{NTE,min}$ , to the actual NTE duration,  $t_{NTE}$ . If  $t_{NTE} < t_{NTE,min}$  the candidate NTE event is void. If  $t_{NTE} \geq t_{NTE,min}$  the candidate NTE event is valid. It can also therefore be included in the overall determination of vehicle-pass ratio according to § 86.1912.

(v) You may choose to not void emission results for a candidate NTE event even though we allow you to void the NTE event

under paragraph (d)(2)(iii) or (iv) of this section. If you choose this option, you must include the results for all regulated pollutants that were measured and validated during the NTE event for a given NTE monitoring system.

(vi)(A) The following is an example of calculating the minimum averaging period,  $t_{NTE,min}$ , for a candidate NTE event. See Figure 1 of this section for an illustration of the terms to calculate the regeneration fraction,  $RF$ . For this example there are three complete non-regeneration events and two complete regeneration events in the shift-day.

$$N_0 = 3$$

$$N_{12} = 2$$

(B) The duration of the three complete non-regeneration events within the shift-day are:

$$t_{0,1} = 5424 \text{ s}$$

$$t_{0,2} = 6676 \text{ s}$$

$$t_{0,3} = 3079 \text{ s}$$

(C) The sums of all the regeneration active periods in the two complete regeneration events are:

$$\sum_{j=1}^{N_{2,1}} t_{2,1,j} = t_{2,1} = 2769 \text{ s}$$

$$\sum_{j=1}^{N_{2,2}} t_{2,2,j} = t_{2,2} = 2639 \text{ s}$$

(D) The duration of each of the two complete regeneration events within the shift-day are:

$$t_{12,1} = 8440 \text{ s}$$

$$t_{12,2} = 3920 \text{ s}$$

(E) The  $RF$  for this shift-day is:

$$RF = \frac{\frac{2769 + 2639}{2}}{\frac{5424 + 6676 + 3079}{3} + \frac{8440 + 3920}{2}} = 0.2406$$

(F) For this example, consider a candidate NTE event where there are two periods of regeneration active operation (state 2).

$$t_{2,NTE,1} = 37 \text{ s}$$

$$t_{2,NTE,2} = 40 \text{ s}$$

(G) The minimum averaging period for this candidate NTE event is:

$$t_{NTE,min} = \frac{37 + 40}{0.2406}$$

$$t_{NTE,min} = 320.0 \text{ s}$$

\* \* \* \* \*

**Subpart T—[Amended]**

■ 3. Section 86.1901 is amended by revising paragraph (a) to read as follows:

**§ 86.1901 What testing requirements apply to my engines that have gone into service?**

(a) If you manufacture diesel heavy-duty engines above 8,500 lbs. GVWR that are subject to engine-based exhaust emission standards under this part, you must test them as described in this subpart. You must measure all emissions listed in § 86.1910(d) other than PM beginning in calendar year 2005 and you must measure PM emissions beginning in calendar year 2007. See § 86.1930 for special provisions that may apply to manufacturers in the early years of this program.

\* \* \* \* \*

■ 4. Section 86.1905 is amended by revising paragraph (c)(2) to read as follows:

**§ 86.1905 How does this program work?**

\* \* \* \* \*

(c) \* \* \*  
(2) 2011 for PM testing.

\* \* \* \* \*

■ 5. Section 86.1910 is amended by revising paragraph (g) to read as follows:

**§ 86.1910 How must I prepare and test my in-use engines?**

\* \* \* \* \*

(g) Once an engine is set up for testing, test the engine for at least one shift-day. To complete a shift-day's

worth of testing, start sampling at the beginning of a shift and continue sampling for the whole shift, subject to the calibration requirements of the portable emissions measurement systems. A shift-day is the period of a normal workday for an individual employee. If the first shift-day of testing does not involve at least 3 hours of accumulated non-idle operation, repeat the testing for a second shift-day and report the results from both days of testing. If the second shift-day of testing also does not result in at least 3 hours of accumulated non-idle operation, you may choose whether or not to continue testing with that vehicle. If after two shift-days you discontinue testing before accumulating 3 hours of non-idle operation on either day, evaluate the valid NTE samples from both days of testing as described in § 86.1912 and include the data in the reporting and record keeping requirements specified in §§ 86.1920 and 1925. Count the engine toward meeting your testing requirements under this subpart and use the data for deciding whether additional engines must be tested under the applicable Phase 1 or Phase 2 test plan.

\* \* \* \* \*

■ 6. Section 86.1912 is amended by revising paragraphs (a)(4)(xiii) and (a)(5)(iv) to read as follows:

**§ 86.1912 How do I determine whether an engine meets the vehicle-pass criteria?**

\* \* \* \* \*

- (a) \* \* \*
- (4) \* \* \*
- (xiii) PM: 0.006 grams per brake horsepower-hour.
- (5) \* \* \*
- (iv) PM: 0.006 grams per brake horsepower-hour.

\* \* \* \* \*

■ 7. Section 86.1920 is amended by revising paragraph (b)(4)(xii)(E) to read as follows:

**§ 86.1920 What in-use testing information must I report to EPA?**

\* \* \* \* \*

- (b) \* \* \*
  - (4) \* \* \*
  - (xii) \* \* \*
- (E) Emissions of THC, NMHC, CO, CO<sub>2</sub> or O<sub>2</sub>, and NO<sub>x</sub> (as appropriate). Report results for PM if it was measured in a manner that provides one-hertz test data. Report results for CH<sub>4</sub> if it was measured and used to determine NMHC.

\* \* \* \* \*

■ 8. Section 86.1930 is amended as follows:

- a. By revising the section heading.
- b. By redesignating paragraph (b) as paragraph (c).

- c. By revising paragraph (a).
- d. By adding a new paragraph (b).
- e. By revising the newly redesignated paragraph (c)(1)(iii).

**§ 86.1930 What special provisions apply from 2005 through 2010?**

(a) We may direct you to test engines under this subpart for emissions other than PM in 2005 and 2006, and for PM emissions in 2007 through 2010. In those interim periods, all the provisions of this subpart apply, except as specified in this paragraph (a). You may apply the exceptions identified in this section for both years of the applicable years for emissions other than PM. You may omit testing and reporting in two of the four applicable years for PM emissions.

(1) We will select engine families for testing of emissions other than PM only when the manufacturer's Statement of Compliance specifically describes the family as being designed to comply with NTE requirements.

(2) We will not direct you to do the Phase 2 testing in § 86.1915(c), regardless of measured emission levels.

(3) For purposes of calculating the NTE thresholds under § 86.1912(a) for any 2006 and earlier model year engine that is not subject to the emission standards in § 86.007–11, determine the applicable NTE standards as follows:

(i) If any numerical NTE requirements specified in the terms of any consent decree apply to the engine family, use those values as the NTE standards for testing under this subpart.

(ii) If a numerical NTE requirement is not specified in a consent decree for the engine family, the NTE standards are 1.25 times the applicable FELs or the applicable emission standards specified in § 86.004–11(a)(1) or § 86.098–11(a)(1).

(4) In the report required in § 86.1920(b), you must submit the deficiencies and limited testing region reports (see §§ 86.007–11(a)(4)(iv) and 86.1370–2007(b)(6) and (7)) for 2006 and earlier model year engines tested under this section.

(5) You must notify the Designated Compliance Officer by September 30, 2010 whether or not you will submit test reports for PM emissions for each of the four years from 2007 through 2010. See 40 CFR 1068.30 for the contact information for the Designated Compliance Officer.

(6) You must submit reports by the deadlines specified in paragraph (b) of this section.

(b) The following deadlines apply for reporting test results under this subpart:

(1) You must complete all the required testing and reporting under this subpart related to emissions other than PM by the following dates:

(i) November 30, 2007 for engine families that we designate for testing in 2005.

(ii) November 30, 2008 for engine families that we designate for testing in 2006.

(iii) November 30, 2009 for engine families that we designate for testing in 2007.

(iv) March 31, 2010 for engine families we designate for testing in 2008.

(v) April 30, 2011 for engine families we designate for testing in 2009.

(2) You must complete all the required testing and reporting under this subpart related to PM emissions by the following dates:

(i) May 31, 2010 for engine families that we designate for testing in 2007.

(ii) September 30, 2010 for engine families we designate for testing in 2008.

(iii) April 30, 2011 for engine families we designate for testing in 2009.

(iv) November 30, 2011 for engine families we designate for testing in 2009.

(c) \* \* \*

(1) \* \* \*

(iii) April 30, 2011 for engine families that we designate for non-PM testing in 2009.

\* \* \* \* \*

**§ 86.1935—[Removed]**

■ 9. Section 86.1935 is removed.

**PART 1033—CONTROL OF EMISSIONS FROM LOCOMOTIVES**

■ 10. The authority citation for part 1033 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

**Subpart B—[Amended]**

■ 11. Section 1033.150 is amended by revising paragraph (e)(1) to read as follows:

**§ 1033.150 Interim provisions.**

\* \* \* \* \*

(e) \* \* \*

(1) All of the engines on the switch locomotive must be covered by a certificate of conformity issued under 40 CFR part 89 or 1039 for model year 2008 or later (or earlier model years if the same standards applied as in 2008). Engines over 750 hp certified to the Tier 4 standards for non-generator set engines are not eligible for this allowance after 2014.

\* \* \* \* \*

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

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

Authority: 42 U.S.C. 7401–7671q.

**Subpart B—[Amended]**

■ 13. Section 1039.102 is amended by revising paragraph (e) to read as follows:

**§ 1039.102 What exhaust emission standards and phase-in allowances apply for my engines in model year 2014 and earlier?**

\* \* \* \* \*

(e) *Alternate NO<sub>x</sub> standards.* For engines in 56–560 kW power categories during the phase-in of Tier 4 standards, you may certify engine families to the alternate NO<sub>x</sub> or NO<sub>x</sub> + NMHC standards in this paragraph (e) instead of the phase-in and phase-out NO<sub>x</sub> and NO<sub>x</sub> + NMHC standards described in Tables 4 through 6 of this section. Engines certified to an alternate NO<sub>x</sub> standard under this section must be certified to an NMHC standard of 0.19 g/kW-hr. Do not include engine families certified under this paragraph (e) in determining whether you comply with the percentage phase-in requirements of paragraphs (c) and (d)(2) of this section. Except for the provisions for alternate FEL caps in § 1039.104(g), the NO<sub>x</sub> and NO<sub>x</sub> + NMHC standards and FEL caps under this paragraph (e) are as follows:

(1) For engines in the 56–130 kW power category, apply the following alternate NO<sub>x</sub> standards and FEL caps:

(i) If you use the provisions of paragraph (d)(1) of this section, your alternate NO<sub>x</sub> standard for any engine family in the 56–130 kW power category is 2.3 g/kW-hr for model years 2012 and 2013. Engines certified to this standard may not exceed a NO<sub>x</sub> FEL cap of 3.0 g/kW-hr.

(ii) If you use the provisions of paragraph (d)(2) of this section, your alternate NO<sub>x</sub> standard for any engine family in the 56–130 kW power category is 3.4 g/kW-hr for model years 2012 through 2014. Engines below 75 kW

certified to this standard may not exceed a NO<sub>x</sub> FEL cap of 4.4 g/kW-hr; engines at or above 75 kW certified to this standard may not exceed a NO<sub>x</sub> FEL cap of 3.8 g/kW-hr.

(iii) If you do not use the provisions of paragraph (d) of this section, you may apply the alternate NO<sub>x</sub> standard and the appropriate FEL cap from either paragraph (e)(1)(i) or (ii) of this section.

(2) For engines in the 130–560 kW power category, the alternate NO<sub>x</sub> standard is 2.0 g/kW-hr for model years 2011 through 2013. Engines certified to this standard may not exceed a NO<sub>x</sub> FEL cap of 2.7 g/kW-hr.

(3) You use NO<sub>x</sub> + NMHC emission credits to certify an engine family to the alternate NO<sub>x</sub> + NMHC standards in this paragraph (e)(3) instead of the otherwise applicable alternate NO<sub>x</sub> and NMHC standards. Calculate the alternate NO<sub>x</sub> + NMHC standard by adding 0.1 g/kW-hr to the numerical value of the applicable alternate NO<sub>x</sub> standard of paragraph (e)(1) or (2) of this section. Engines certified to the NO<sub>x</sub> + NMHC standards of this paragraph (e)(3) may not generate emission credits. The FEL caps for engine families certified under this paragraph (e)(3) are the previously applicable NO<sub>x</sub> + NMHC standards of 40 CFR 89.112 (generally the Tier 3 standards).

\* \* \* \* \*

■ 14. Section 1039.104 is amended by adding paragraph (g)(5) to read as follows:

**§ 1039.104 Are there interim provisions that apply only for a limited time?**

\* \* \* \* \*

(g) \* \* \*

(5) You may certify engines under this paragraph (g) without regard to whether or not the engine family's FEL is at or below the otherwise applicable FEL cap. For example, a 200 kW engine certified to the NO<sub>x</sub> + NMHC standard of § 1039.102(e)(3) with an FEL equal to the FEL cap of 2.8 g/kW-hr may be certified under this paragraph (g) and count toward the sales limit specified in paragraph (g)(1) of this section.

\* \* \* \* \*

**Subpart G—[Amended]**

■ 15. Section 1039.625 is amended by adding paragraph (b)(2)(iii) read as follows:

**§ 1039.625 What requirements apply under the program for equipment-manufacturer flexibility?**

\* \* \* \* \*

(b) \* \* \*

(2) \* \* \*

(iii) In each power category at or above 56 kW, you may apply the provisions of paragraph (b)(2)(i) of this section in the first two model years for which Tier 4 standards apply, regardless of the number of engine families you use in your equipment, provided you exceed the single engine family restriction of that paragraph primarily due to production of equipment intended specifically to travel on snow and to commonly operate at more than 9,000 feet above sea level. After the first two Tier 4 model years in a power category, you may continue to apply the provisions of paragraph (b)(2)(i) of this section, subject to the single engine family restriction.

\* \* \* \* \*

**PART 1042—CONTROL OF EMISSIONS FROM NEW AND IN-USE MARINE COMPRESSION-IGNITION ENGINES AND VESSELS**

■ 16. The authority citation for part 1042 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

**Subpart J—[Amended]**

■ 17. Appendix II to part 1042 is amended by revising paragraph (c)(2) to read as follows:

**Appendix II to Part 1042—Steady-State Duty Cycles**

\* \* \* \* \*

(c) \* \* \*

(2) The following duty cycle applies for ramped-modal testing:

RMC mode	Time in mode (seconds)	Engine speed	Torque (percent) <sup>1 2</sup>
1a Steady-state .....	229	Engine Governed .....	100.
1b Transition .....	20	Engine Governed .....	Linear transition.
2a Steady-state .....	166	Engine Governed .....	25.
2b Transition .....	20	Engine Governed .....	Linear transition.
3a Steady-state .....	570	Engine Governed .....	75.
3b Transition .....	20	Engine Governed .....	Linear transition.
4a Steady-state .....	175	Engine Governed .....	50.

<sup>1</sup> The percent torque is relative to the maximum test torque as defined in 40 CFR part 1065.

<sup>2</sup> Advance from one mode to the next within a 20-second transition phase. During the transition phase, command a linear progression from the torque setting of the current mode to the torque setting of the next mode.

**PART 1045—CONTROL OF EMISSIONS FROM SPARK-IGNITION PROPULSION MARINE ENGINES AND VESSELS**

■ 18. The authority citation for part 1045 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

**Subpart B—[Amended]**

■ 19. Section 1045.145 is amended by revising paragraph (a) introductory text to read as follows:

**§ 1045.145 Are there interim provisions that apply only for a limited time?**

\* \* \* \* \*

(a) *Small-volume engine manufacturers.* Special provisions apply to you for sterndrive/inboard engines if you are a small-volume engine manufacturer subject to the requirements of this part. You may delay complying with emission standards and other requirements that would otherwise apply until the 2011 model year for conventional sterndrive/inboard engines and until the 2013 model year for high-performance engines. For an engine to be exempt under this paragraph (a), you must contact us before January 1, 2011 or before you introduce such engines into U.S. commerce, whichever comes first. Add a permanent label to a readily visible part of each engine exempted under this paragraph (a). This label must include at least the following items:

\* \* \* \* \*

**PART 1054—CONTROL OF EMISSIONS FROM NEW, SMALL NONROAD SPARK-IGNITION ENGINES AND EQUIPMENT**

■ 20. The authority citation for part 1054 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

**Subpart B—[Amended]**

■ 21. Section 1054.101 is amended by revising paragraph (e) to read as follows:

**§ 1054.101 What emission standards and requirements must my engines meet?**

\* \* \* \* \*

(e) *Relationship between handheld and nonhandheld engines.* Any engines certified to the nonhandheld emission standards in § 1054.105 may be used in either handheld or nonhandheld equipment. Engines above 80 cc certified to the handheld emission standards in § 1054.103 may not be used in nonhandheld equipment. 40 CFR 1068.101 prohibits the introduction into commerce or importation of such nonhandheld equipment except as

specified in this paragraph (e). For purposes of the requirements of this part, engines at or below 80 cc are considered handheld engines, but may be installed in either handheld or nonhandheld equipment. These engines are subject to handheld exhaust emission standards; the equipment in which they are installed are subject to handheld evaporative emission standards starting with the model years specified in this part 1054. See § 1054.701(c) for special provisions related to emission credits for engine families with displacement at or below 80 cc where those engines are installed in nonhandheld equipment.

\* \* \* \* \*

**PART 1065—ENGINE-TESTING PROCEDURES**

■ 22. The authority citation for part 1065 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

**Subpart B—[Amended]**

■ 23. Section 1065.140 is amended by revising paragraphs (d) introductory text and (d)(1) to read as follows:

**§ 1065.140 Dilution for gaseous and PM constituents.**

\* \* \* \* \*

(d) *Partial-flow dilution (PFD).* You may dilute a partial flow of raw or previously diluted exhaust before measuring emissions. Section 1065.240 describes PFD-related flow measurement instruments. PFD may consist of constant or varying dilution ratios as described in paragraphs (d)(2) and (3) of this section. An example of a constant dilution ratio PFD is a “secondary dilution PM” measurement system.

(1) *Applicability.* (i) You may use PFD to extract a proportional raw exhaust sample for any batch or continuous PM emission sampling over any transient duty cycle, any steady-state duty cycle, or any ramped-modal cycle.

(ii) You may use PFD to extract a proportional raw exhaust sample for any batch or continuous gaseous emission sampling over any transient duty cycle, any steady-state duty cycle, or any ramped-modal cycle.

(iii) You may use PFD to extract a proportional raw exhaust sample for any batch or continuous field-testing.

(iv) You may use PFD to extract a proportional diluted exhaust sample from a CVS for any batch or continuous emission sampling.

(v) You may use PFD to extract a constant raw or diluted exhaust sample for any continuous emission sampling.

(vi) You may use PFD to extract a constant raw or diluted exhaust sample for any steady-state emission sampling.

\* \* \* \* \*

■ 24. Section 1065.260 is amended by revising paragraph (e) to read as follows:

**§ 1065.260 Flame-ionization detector.**

\* \* \* \* \*

(e) *Methane.* FID analyzers measure total hydrocarbons (THC). To determine nonmethane hydrocarbons (NMHC), quantify methane, CH<sub>4</sub>, either with a nonmethane cutter and a FID analyzer as described in § 1065.265, or with a gas chromatograph as described in § 1065.267. Instead of measuring methane, you may assume that 2% of measured total hydrocarbon is methane, as described in § 1065.650(c)(1)(vi). For a FID analyzer used to determine NMHC, determine its response factor to methane, *RF*<sub>CH<sub>4</sub></sub>, as described in § 1065.360. Note that NMHC-related calculations are described in § 1065.660.

■ 25. Section 1065.290 is amended by revising paragraph (b) to read as follows:

**§ 1065.290 PM gravimetric balance.**

\* \* \* \* \*

(b) *Component requirements.* We recommend that you use a balance that meets the specifications in Table 1 of § 1065.205. Note that your balance-based system must meet the linearity verification in § 1065.307. If the balance uses internal calibration weights for routine spanning and the weights do not meet the specifications in § 1065.790, the weights must be verified independently with external calibration weights meeting the requirements of § 1065.790. While you may also use an inertial balance to measure PM, as described in § 1065.295, use a reference procedure based on a gravimetric balance for comparison with any proposed alternate measurement procedure under § 1065.10.

\* \* \* \* \*

■ 26. Section 1065.295 is amended by adding paragraphs (c) and (d) to read as follows:

**§ 1065.295 PM inertial balance for field-testing analysis.**

\* \* \* \* \*

(c) *Loss correction.* You may use PM loss corrections to account for PM loss in the inertial balance, including the sample handling system.

(d) *Deposition.* You may use electrostatic deposition to collect PM as long as its collection efficiency is at least 95%.

■ 27. Section 1065.307 is amended by adding paragraph (d)(9) to read as follows:

**§ 1065.307 Linearity verification.**

\* \* \* \* \*

(d) \* \* \*

(9) *Mass.* For linearity verification for gravimetric PM balances, use external calibration weights that meet the requirements in § 1065.790.

\* \* \* \* \*

■ 28. Section 1065.340 is amended by revising paragraph (e)(8) to read as follows:

**§ 1065.340 Diluted exhaust flow (CVS) calibration.**

\* \* \* \* \*

(e) \* \* \*

(8) Repeat the steps in paragraphs (e)(6) and (7) of this section to record data at a minimum of six restrictor positions ranging from the wide open restrictor position to the minimum expected pressure at the PDP inlet.

\* \* \* \* \*

■ 29. Section 1065.390 is amended by revising paragraph (c)(2) to read as follows:

**§ 1065.390 PM balance verifications and weighing process verification.**

\* \* \* \* \*

(c) \* \* \*

(2) You may use an automated procedure to verify balance performance. For example many balances have internal calibration weights that are used automatically to verify balance performance.

\* \* \* \* \*

■ 30. Section 1065.525 is amended by revising the section heading and paragraphs (c)(3) and (d) and removing paragraph (e) to read as follows:

**§ 1065.525 Engine starting, restarting, and shutdown.**

\* \* \* \* \*

(c) \* \* \*

(3) Void the entire test if the engine stalls at any time after emission sampling begins, except as described in § 1065.526. If you do not void the entire test, you must void the individual test mode or test interval in which the engine stalls.

\* \* \* \* \*

(d) Shut down the engine according to the manufacturer's specifications.

■ 31. A new § 1065.526 is added to read as follows:

**§ 1065.526 Repeating void modes or test intervals.**

(a) Test modes and test intervals can be voided because of instrument malfunctions, engine stalling, or emissions exceeding instrument ranges. This section specifies circumstances for which a test mode or test interval can

be repeated without repeating the entire test.

(b) This section is intended to result in replicate test modes and test intervals that are identical to what would have occurred if the cause of the voiding had not occurred. It does not allow you to repeat test modes or test intervals in any circumstances that would be inconsistent with good engineering judgment. For example, the procedures specified here for repeating a mode or interval may not apply for certain engines that include hybrid energy storage features or emission controls that involve physical or chemical storage of pollutants. This section applies for circumstances in which emission concentrations exceed the analyzer range only if it is due to operator error or analyzer malfunction. It does not apply for circumstances in which the emission concentrations exceed the range because they were higher than expected.

(c) If one of the modes of a discrete-mode test is voided as provided in this section, you may void the results for that individual mode and continue the test as follows:

(1) If the engine has stalled or been shut down, restart the engine.

(2) Use good engineering judgment to restart the test sequence using the appropriate steps in § 1065.530(b).

(3) Precondition the engine by operating it at the previous mode for approximately the same amount of time it operated at that mode for the previous emission measurement.

(4) Advance to the mode at which the test was interrupted and continue with the duty cycle as specified in the standard-setting part.

(d) If a transient or ramped-modal cycle test interval is voided as provided in this section, you may repeat the test interval as follows:

(1) Use good engineering judgment to restart (as applicable) and precondition the engine and emission sampling system to the same condition as would apply for normal testing. This may require you to complete the voided test interval. For example, you may generally repeat a hot-start test of a heavy-duty highway engine after completing the voided hot-start test and allowing the engine to soak for 20 minutes.

(2) Complete the remainder of the test according to the provisions in this subpart.

(e) Keep records from the voided test mode or test interval in the same manner as required for unvoided tests, and include a description of the reason for voiding the test mode or test interval.

■ 32. Section 1065.550 is amended by revising paragraphs (b)(1)(ii), (b)(2), and (b)(4) to read as follows:

**§ 1065.550 Gas analyzer range validation, drift validation, and drift correction.**

\* \* \* \* \*

(b) \* \* \*

(1) \* \* \*

(ii) For the entire duty cycle and for each measured exhaust constituent, the difference between the uncorrected and corrected composite brake-specific emission values over the entire duty cycle is within  $\pm 4\%$  of the uncorrected value or the applicable emission standard, whichever is greater. Note that for purposes of drift validation using composite brake-specific emission values over the entire duty cycle, leave unaltered any negative emission results over a given test interval (*i.e.*, do not set them to zero). A third calculation of composite brake-specific emission values is required for final reporting. This calculation uses drift-corrected mass (or mass rate) values from each test interval and sets any negative mass (or mass rate) values to zero before calculating the composite brake-specific emission values over the entire duty cycle. This requirement also applies for CO<sub>2</sub>, whether or not an emission standard applies for CO<sub>2</sub>. Where no emission standard applies for CO<sub>2</sub>, the difference must be within  $\pm 4\%$  of the uncorrected value. *See* paragraph (b)(4) of this section for exhaust constituents other than CO<sub>2</sub> for which no emission standard applies.

(2) For standards consisting of combined, individual measurements of exhaust constituents (such as NO<sub>x</sub> + NMHC or separate NO and NO<sub>2</sub> measurements to comply with a NO<sub>x</sub> standard), the duty cycle shall be validated for drift if you satisfy one of the following:

(i) For each test interval of the duty cycle and for each individually measured exhaust constituent (*e.g.* NO, NO<sub>2</sub>, NO<sub>x</sub>, or NMHC), the difference between the uncorrected and the corrected brake-specific emission values over the test interval is within  $\pm 4\%$  of the uncorrected value; or

(ii) For each test interval of the duty cycle or for the entire duty cycle the difference between the combined (*e.g.* NO<sub>x</sub> + NMHC) uncorrected and combined (*e.g.* NO<sub>x</sub> + NMHC) corrected composite brake-specific emissions values over each test interval of the duty cycle or the entire duty cycle is within  $\pm 4\%$  of the uncorrected value or the applicable emissions standard, whichever is greater.

\* \* \* \* \*

(4) The provisions of this paragraph (b)(4) apply for measurement of pollutants other than CO<sub>2</sub> for which no emission standard applies (for purposes of this provision, standards consisting of combined, individual measurements are considered to be standards for each individual pollutant). You may use measurements that do not meet the drift validation criteria specified in paragraph (b)(1). For example, this allowance may be appropriate for measuring and reporting very low concentrations of CH<sub>4</sub> and N<sub>2</sub>O as long as no emission standard applies for these compounds.

■ 33. Section 1065.640 is amended by revising paragraph (c)(5) to read as follows:

**§ 1065.640 Flow meter calibration calculations.**

\* \* \* \* \*

(c) \* \* \*

(5) The following example illustrates the use of the governing equations to calculate the discharge coefficient, C<sub>d</sub>, of an SSV flow meter at one reference flow meter value. Note that calculating C<sub>d</sub> for a CFV flow meter would be similar, except that C<sub>f</sub> would be determined from Table 2 of this section or calculated iteratively using values of β and γ as described in paragraph (c)(2) of this section.

*Example:*

$\dot{n}_{ref} = 57.625$  mol/s  
 $Z = 1$   
 $M_{mix} = 28.7805$  g/mol = 0.0287805 kg/mol  
 $R = 8.314472$  J/(mol·K)

$T_{in} = 298.15$  K  
 $A_t = 0.01824$  m<sup>2</sup>  
 $p_{in} = 99132.0$  Pa  
 $\gamma = 1.399$   
 $\beta = 0.8$   
 $\Delta p = 2.312$  kPa

$$r_{SSV} = 1 - \frac{2.312}{99.132} = 0.977$$

$$C_f = \left[ \frac{2 \cdot 1.399 \cdot \left( 0.977^{1.399} - 1 \right)}{(1.399 - 1) \cdot \left( 0.8^4 - 0.977^{1.399} \right)} \right]^{\frac{1}{2}}$$

C<sub>f</sub> = 0.274

$$C_d = 57.625 \cdot \frac{\sqrt{1 \cdot 0.0287805 \cdot 8.314472 \cdot 298.15}}{0.274 \cdot 0.01824 \cdot 99132.0}$$

C<sub>d</sub> = 0.982

\* \* \* \* \*

■ 34. Section 1065.642 is amended by revising paragraph (c) to read as follows:

**§ 1065.642 SSV, CFV, and PDP molar flow rate calculations.**

\* \* \* \* \*

(c) *CFV molar flow rate.* Some CFV flow meters consist of a single venturi and some consist of multiple venturis, where different combinations of

venturis are used to meter different flow rates. If you use multiple venturis and you calibrated each venturi independently to determine a separate discharge coefficient, C<sub>d</sub>, for each venturi, calculate the individual molar flow rates through each venturi and sum all their flow rates to determine  $\dot{n}$ . If you use multiple venturis and you calibrated each combination of venturis, calculate  $\dot{n}$  as using the sum of the active venturi throat areas as A<sub>t</sub>, the square root of the sum of the squares of the active venturi

throat diameters as d<sub>t</sub>, and the ratio of the venturi throat to inlet diameters as the ratio of the square root of the sum of the active venturi throat diameters, d<sub>t</sub>, to the diameter of the common entrance to all of the venturis, D. To calculate the molar flow rate through one venturi or one combination of venturis, use its respective mean C<sub>d</sub> and other constants you determined according to § 1065.640 and calculate its molar flow rate  $\dot{n}$  during an emission test, as follows:

$$\dot{n} = C_d \cdot C_f \cdot \frac{A_t \cdot p_{in}}{\sqrt{Z \cdot M_{mix} \cdot R \cdot T_{in}}} \quad \text{Eq. 1065.642-4}$$

*Example:*  
 $C_d = 0.985$   
 $C_f = 0.7219$   
 $A_t = 0.00456$  m<sup>2</sup>

$p_{in} = 98836$  Pa  
 $Z = 1$   
 $M_{mix} = 28.7805$  g/mol = 0.0287805 kg/mol

$R = 8.314472$  J/(mol·K)  
 $T_{in} = 378.15$  K

$$\dot{n} = 0.985 \cdot 0.7219 \cdot \frac{0.00456 \cdot 98836}{\sqrt{1 \cdot 0.0287805 \cdot 8.314472 \cdot 378.15}}$$

$\dot{n} = 33.690$  mol/s

■ 35. Section 1065.660 is amended by revising the section heading and paragraph (b)(2) to read as follows:

**§ 1065.660 THC, NMHC, and CH<sub>4</sub> determination.**

\* \* \* \* \*

(b) \* \* \*

(2) For nonmethane cutters, calculate X<sub>NMHC</sub> using the nonmethane cutter's penetration fractions (PF) of CH<sub>4</sub> and C<sub>2</sub>H<sub>6</sub> from § 1065.365, and using the HC contamination and dry-to-wet corrected THC concentration X<sub>THC[THC-FID]<sub>cor</sub> as determined in paragraph (a) of this section.</sub>

(i) Use the following equation for penetration fractions determined using an NMC configuration as outlined in § 1065.365(d):

$$x_{\text{NMHC}} = \frac{x_{\text{THC}}[\text{THC-FID}]_{\text{cor}} - x_{\text{THC}}[\text{NMC-FID}]_{\text{cor}} \cdot RF_{\text{CH4}}[\text{THC-FID}]}{1 - RFPF_{\text{C2H6}}[\text{NMC-FID}] \cdot RF_{\text{CH4}}[\text{THC-FID}]}$$
 Eq. 1065.660-2

Where:

$x_{\text{NMHC}}$  = concentration of NMHC.  
 $x_{\text{THC}}[\text{THC-FID}]_{\text{cor}}$  = concentration of THC, HC contamination and dry-to-wet corrected, as measured by the THC FID during sampling while bypassing the NMC.  
 $x_{\text{THC}}[\text{NMC-FID}]_{\text{cor}}$  = concentration of THC, HC contamination (optional) and dry-to-wet corrected, as measured by the NMC FID during sampling through the NMC.

$RF_{\text{CH4}}[\text{THC-FID}]$  = response factor of THC FID to CH<sub>4</sub>, according to § 1065.360(d).  
 $RFPF_{\text{C2H6}}[\text{NMC-FID}]$  = nonmethane cutter combined ethane response factor and penetration fraction, according to § 1065.365(d).

$RF_{\text{CH4}}[\text{THC-FID}] = 1.05$

$$x_{\text{NMHC}} = \frac{150.3 - 20.5 \cdot 1.05}{1 - 0.019 \cdot 1.05}$$

$x_{\text{NMHC}} = 131.4 \mu\text{mol/mol}$

(ii) For penetration fractions determined using an NMC configuration as outlined in section § 1065.365(e), use the following equation:

$$x_{\text{NMHC}} = \frac{x_{\text{THC}}[\text{THC-FID}]_{\text{cor}} \cdot PF_{\text{CH4}}[\text{NMC-FID}] - x_{\text{THC}}[\text{NMC-FID}]_{\text{cor}}}{PF_{\text{CH4}}[\text{NMC-FID}] - PF_{\text{C2H6}}[\text{NMC-FID}]}$$
 Eq. 1065.660-3

Where:

$x_{\text{NMHC}}$  = concentration of NMHC.  
 $x_{\text{THC}}[\text{THC-FID}]_{\text{cor}}$  = concentration of THC, HC contamination and dry-to-wet corrected, as measured by the THC FID during sampling while bypassing the NMC.  
 $PF_{\text{CH4}}[\text{NMC-FID}]$  = nonmethane cutter CH<sub>4</sub> penetration fraction, according to § 1065.365(e).  
 $x_{\text{THC}}[\text{NMC-FID}]_{\text{cor}}$  = concentration of THC, HC contamination (optional) and dry-to-wet

corrected, as measured by the THC FID during sampling through the NMC.  
 $PF_{\text{C2H6}}[\text{NMC-FID}]$  = nonmethane cutter ethane penetration fraction, according to § 1065.365(e).

$$x_{\text{NMHC}} = \frac{150.3 \cdot 0.990 - 20.5}{0.990 - 0.020}$$

$x_{\text{NMHC}} = 132.3 \mu\text{mol/mol}$

(iii) For penetration fractions determined using an NMC configuration as outlined in section § 1065.365(f), use the following equation:

*Example:*  
 $x_{\text{THC}}[\text{THC-FID}]_{\text{cor}} = 150.3 \mu\text{mol/mol}$   
 $PF_{\text{CH4}}[\text{NMC-FID}] = 0.990$   
 $x_{\text{THC}}[\text{NMC-FID}]_{\text{cor}} = 20.5 \mu\text{mol/mol}$   
 $PF_{\text{C2H6}}[\text{NMC-FID}] = 0.020$

$$x_{\text{NMHC}} = \frac{x_{\text{THC}}[\text{THC-FID}]_{\text{cor}} \cdot PF_{\text{CH4}}[\text{NMC-FID}] - x_{\text{THC}}[\text{NMC-FID}]_{\text{cor}} \cdot RF_{\text{CH4}}[\text{THC-FID}]}{PF_{\text{CH4}}[\text{NMC-FID}] - RFPF_{\text{C2H6}}[\text{NMC-FID}] \cdot RF_{\text{CH4}}[\text{THC-FID}]}$$
 Eq. 1065.660-4

Where:

$x_{\text{NMHC}}$  = concentration of NMHC.  
 $x_{\text{THC}}[\text{THC-FID}]_{\text{cor}}$  = concentration of THC, HC contamination and dry-to-wet corrected, as measured by the THC FID during sampling while bypassing the NMC.  
 $PF_{\text{CH4}}[\text{NMC-FID}]$  = nonmethane cutter CH<sub>4</sub> penetration fraction, according to § 1065.365(f).

$x_{\text{THC}}[\text{NMC-FID}]_{\text{cor}}$  = concentration of THC, HC contamination (optional) and dry-to-wet corrected, as measured by the THC FID during sampling through the NMC.  
 $RFPF_{\text{C2H6}}[\text{NMC-FID}]$  = nonmethane cutter CH<sub>4</sub> combined ethane response factor and penetration fraction, according to § 1065.365(f).

$RF_{\text{CH4}}[\text{THC-FID}]$  = response factor of THC FID to CH<sub>4</sub>, according to § 1065.360(d).

*Example:*

$x_{\text{THC}}[\text{THC-FID}]_{\text{cor}} = 150.3 \mu\text{mol/mol}$   
 $PF_{\text{CH4}}[\text{NMC-FID}] = 0.990$   
 $x_{\text{THC}}[\text{NMC-FID}]_{\text{cor}} = 20.5 \mu\text{mol/mol}$   
 $RFPF_{\text{C2H6}}[\text{NMC-FID}] = 0.019$   
 $RF_{\text{CH4}}[\text{THC-FID}] = 0.980$

$$x_{\text{NMHC}} = \frac{150.3 \cdot 0.990 - 20.5 \cdot 0.980}{0.990 - 0.019 \cdot 0.980}$$

$x_{\text{NMHC}} = 132.5 \mu\text{mol/mol}$

\* \* \* \* \*

■ 36. Section 1065.750 is amended by revising paragraph (a)(3)(xi) to read as follows:

**§ 1065.750 Analytical gases.**

\* \* \* \* \*

- (a) \* \* \*
- (3) \* \* \*

(xi) N<sub>2</sub>O, balance purified synthetic air and/or N<sub>2</sub> (as applicable).

\* \* \* \* \*

■ 37. Section 1065.905 is amended by revising paragraphs (c)(6), (d)(2), and Table 1 to read as follows:

**§ 1065.905 General provisions.**

\* \* \* \* \*

(c) \* \* \*

(6) What are the limits on ambient conditions for field testing? Note that the ambient condition limits in § 1065.520 do not apply for field testing. Field testing may occur at any ambient temperature, pressure, and humidity

unless otherwise specified in the standard-setting part.

\* \* \* \* \*

(d) \* \* \*

(2) Use equipment specifications in § 1065.101 and in the sections from § 1065.140 to the end of subpart B of this part, with the exception of § 1065.140(e)(1) and (4), § 1065.170(c)(1)(vi), and § 1065.195(c). Section 1065.910 identifies additional equipment that is specific to field testing.

(i) For PM samples, configure dilution systems as follows:

(A) Use good engineering judgment to control diluent (i.e., dilution air) temperature. If you choose to directly and actively control diluent temperature, set the temperature to 25 °C.

(B) Control sample temperature to a (32 to 62) °C tolerance, as measured

anywhere within 20 cm upstream or downstream of the PM storage media (such as a filter or oscillating crystal), where the tolerance applies only during sampling.

(C) Maintain filter face velocity to a (5 to 100) cm/s tolerance for flow-through media. Compliance with this provision

can be verified by engineering analysis. This provision does not apply for non-flow-through media.

(ii) For inertial PM balances, there is no requirement to control the stabilization environment temperature or dewpoint.

\* \* \* \* \*

TABLE 1 OF § 1065.905—SUMMARY OF TESTING REQUIREMENTS SPECIFIED OUTSIDE OF THIS SUBPART J

Subpart	Applicability for field testing <sup>1</sup>	Applicability for laboratory or similar testing with PEMS without restriction <sup>1</sup>	Applicability for laboratory or similar testing with PEMS with restrictions <sup>1</sup>
A: Applicability and general provisions.	Use all .....	Use all .....	Use all.
B: Equipment for testing .....	Use §1065.101 and §1065.140 through the end of subpart B, except §1065.140(e)(1) and (4), §1065.170(c)(1)(vi), and §1065.195(c). §1065.910 specifies equipment specific to field testing.	Use all .....	Use all. §1065.910 specifies equipment specific to laboratory testing with PEMS.
C: Measurement instruments.	Use all. §1065.915 allows deviations .....	Use all except §1065.295(c).	Use all except §1065.295(c). §1065.915 allows deviations.
D: Calibrations and verifications.	Use all except §1065.308 and §1065.309. §1065.920 allows deviations, but also has additional specifications.	Use all .....	Use all. §1065.920 allows deviations, but also has additional specifications.
E: Test engine selection, maintenance, and durability.	Do not use. Use standard-setting part .....	Use all .....	Use all.
F: Running an emission test in the laboratory.	Use §§1065.590 and 1065.595 for PM §1065.930 and §1065.935 to start and run a field test.	Use all .....	Use all.
G: Calculations and data requirements.	Use all. §1065.940 has additional calculation instructions.	Use all .....	Use all. §1065.940 has additional calculation instructions.
H: Fuels, engine fluids, analytical gases, and other calibration materials.	Use all .....	Use all .....	Use all.
I: Testing with oxygenated fuels.	Use all .....	Use all .....	Use all.
K: Definitions and reference materials.	Use all .....	Use all .....	Use all.

<sup>1</sup> Refer to paragraphs (d) and (e) of this section for complete specifications.

■ 38. Section 1065.915 is amended by revising paragraphs (a), (d)(5) introductory text, and (d)(5)(iv), and adding paragraph (d)(5)(v), to read as follows:

**§ 1065.915 PEMS instruments.**

(a) *Instrument specifications.* We recommend that you use PEMS that meet the specifications of subpart C of this part. For unrestricted use of PEMS in a laboratory or similar environment, use a PEMS that meets the same

specifications as each lab instrument it replaces. For field testing or for testing with PEMS in a laboratory or similar environment, under the provisions of §1065.905(b), the specifications in the following table apply instead of the specifications in Table 1 of §1065.205:

TABLE 1 OF § 1065.915—RECOMMENDED MINIMUM PEMS MEASUREMENT INSTRUMENT PERFORMANCE

Measurement	Measured quantity symbol	Rise time, $t_{10-90}$ , and Fall time, $t_{90-10}$	Recording update frequency	Accuracy <sup>1</sup>	Repeatability <sup>1</sup>	Noise <sup>1</sup>
Engine speed transducer .....	$f_n$ .....	1 s .....	1 Hz means	5.0% of pt. or 1.0% of max	2.0% of pt. or 1.0% of max.	0.5% of max.
Engine torque estimator, BSFC (This is a signal from an engine's ECM).	$T$ or BSFC ...	1 s .....	1 Hz means	8.0% of pt. or 5% of max ..	2.0% of pt. or 1.0% of max.	1.0% of max.
General pressure transducer (not a part of another instrument).	$p$ .....	5 s .....	1 Hz .....	5.0% of pt. or 5.0% of max	2.0% of pt. or 0.5% of max.	1.0% of max.
Atmospheric pressure meter	$p_{atmos}$ .....	50 s .....	0.1 Hz .....	250 Pa .....	200 Pa .....	100 Pa.

TABLE 1 OF § 1065.915—RECOMMENDED MINIMUM PEMS MEASUREMENT INSTRUMENT PERFORMANCE—Continued

Measurement	Measured quantity symbol	Rise time, $t_{10-90}$ , and Fall time, $t_{90-10}$	Recording update frequency	Accuracy <sup>1</sup>	Repeatability <sup>1</sup>	Noise <sup>1</sup>
General temperature sensor (not a part of another instrument).	$T$ .....	5 s .....	1 Hz .....	1.0% of pt. K or 5 K .....	0.5% of pt. K or 2 K.	0.5% of max 0.5 K.
General dewpoint sensor .....	$T_{dew}$ .....	50 s .....	0.1 Hz .....	3 K .....	1 K .....	1 K.
Exhaust flow meter .....	$\dot{n}$ .....	1 s .....	1 Hz means	5.0% of pt. or 3.0% of max	2.0% of pt. ....	2.0% of max.
Dilution air, inlet air, exhaust, and sample flow meters.	$\dot{n}$ .....	1 s .....	1 Hz means	2.5% of pt. or 1.5% of max	1.25% of pt. or 0.75% of max.	1.0% of max.
Continuous gas analyzer .....	$x$ .....	5 s .....	1 Hz .....	4.0% of pt. or 4.0% of meas.	2.0% of pt. or 2.0% of meas.	1.0% of max.
Gravimetric PM balance .....	$m_{PM}$ .....	N/A .....	N/A .....	See § 1065.790 .....	0.5 $\mu$ g .....	N/A.
Inertial PM balance .....	$m_{PM}$ .....	N/A .....	N/A .....	4.0% of pt. or 4.0% of meas.	2.0% of pt. or 2.0% of meas.	1.0% of max.

<sup>1</sup> Accuracy, repeatability, and noise are all determined with the same collected data, as described in § 1065.305, and based on absolute values. "pt." refers to the overall flow-weighted mean value expected at the standard; "max." refers to the peak value expected at the standard over any test interval, not the maximum of the instrument's range; "meas" refers to the actual flow-weighted mean measured over any test interval.

\* \* \* \* \*

(d) \* \* \*

(5) *ECM signals for determining brake-specific emissions.* You may use any combination of ECM signals, with or without other measurements, to estimate engine speed, torque, brake-specific fuel consumption (BSFC, in units of mass of fuel per kW-hr), and fuel rate for use in brake-specific emission calculations. We recommend that the overall performance of any speed, torque, or BSFC estimator should meet the performance specifications in Table 1 of this section. We recommend using one of the following methods:

\* \* \* \* \*

(iv) *ECM fuel rate.* Use the fuel rate signal directly from the ECM and chemical balance to determine the molar flow rate of exhaust. Use § 1065.655(d) to determine the carbon mass fraction of fuel. You may alternatively develop and use your own combination of ECM signals to determine fuel mass flow rate.

(v) *Other ECM signals.* You may ask to use other ECM signals for determining brake-specific emissions, such as ECM air flow. We must approve the use of such signals in advance.

\* \* \* \* \*

■ 39. Section 1065.920 is amended by revising the section heading and paragraph (a) to read as follows:

**§ 1065.920 PEMS calibrations and verifications.**

(a) *Subsystem calibrations and verifications.* Use all the applicable calibrations and verifications in subpart D of this part, including the linearity verifications in § 1065.307, to calibrate and verify PEMS. Note that a PEMS

does not have to meet the system-response and updating-recording verifications of § 1065.308 and § 1065.309 if it meets the overall verification described in paragraph (b) of this section. This section does not apply to ECM signals.

\* \* \* \* \*

■ 40. Section 1065.925 is amended by revising paragraph (h) introductory text to read as follows:

**§ 1065.925 PEMS preparation for field testing.**

\* \* \* \* \*

(h) Verify the amount of contamination in the PEMS HC sampling system before the start of the field test as follows:

\* \* \* \* \*

■ 41. Section 1065.940 is revised to read as follows:

**§ 1065.940 Emission calculations.**

(a) Perform emission calculations as described in § 1065.650 to calculate brake-specific emissions for each test interval using any applicable information and instructions in the standard-setting part.

(b) You may use a fixed molar mass for the diluted exhaust mixture for field testing. Determine this fixed value by engineering analysis.

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**DEPARTMENT OF TRANSPORTATION**

**49 CFR Part 39**

[Docket OST-2007-26829]

RIN 2105-AB87

**Transportation for Individuals With Disabilities: Passenger Vessels**

**AGENCY:** Department of Transportation, Office of the Secretary.

**ACTION:** Response to comments; stay of effective date.

**SUMMARY:** On July 6, 2010, the Department of Transportation issued a new Americans with Disabilities Act (ADA) final rule to ensure nondiscrimination on the basis of disability by passenger vessel operators (PVOs). The final rule requested comment on three issues: Service animals, mobility devices, and the consistency of the rule with recent Department of Justice ADA rules. This document responds to those comments and makes certain adjustments in effective dates for the final rule.

**DATES:** 49 CFR 39.39 is stayed effective from November 8, 2010 through January 3, 2012; the remainder of 49 CFR part 39 is stayed effective from November 8, 2010 through January 3, 2011.

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