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DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Part 165

[Docket No. USCG–2021–0193]

Safety Zone; Marine Events Within the Eighth Coast Guard District

AGENCY: Coast Guard, Department of Homeland Security (DHS).

ACTION: Notice of enforcement of regulation.

SUMMARY: The Coast Guard will enforce a safety zone for the St. John the Baptist Independence Day Fireworks on July 1, 2021 from 8:45 p.m. through 9:45 p.m. to provide for the safety of life on navigable waterways during this event. Our regulation for marine events within the Eighth Coast Guard District identifies the regulated area for this event on the Lower Mississippi River, by Reserve Louisiana. During the enforcement periods, the operator of any vessel in the regulated area must comply with directions from the Patrol Commander or any Official Patrol displaying a Coast Guard ensign.

DATES: The regulations in 33 CFR 165.801, Table 5, line 2, will be enforced from 8:45 p.m. though 9:45 p.m. on July 1, 2021.

FOR FURTHER INFORMATION CONTACT: If you have questions about this notice of enforcement, call or email Lieutenant Commander Thao V. Nguyen, Vessel Traffic Service Lower Mississippi River Director, U.S. Coast Guard Sector New Orleans; (504) 365–2231, *Thao.V.Nguyen@uscg.mil*.

SUPPLEMENTARY INFORMATION: The Coast Guard will enforce the safety zone located in 33 CFR 165.801, Table 5, line 2, for the St. John the Baptist Independence Day Celebration event. The regulations will be enforced from 8:45 p.m. through 9:45 p.m. on July 1, 2021. This action is being taken to provide for the safety of life on these navigable waterways during this event. Our regulations for marine events within the Eighth Coast Guard District, 33 CFR 165.801, as updated by the **Federal Register** document published at 83 FR 55488, specifies the location of the regulated area on the Mississippi River between mile markers 137.5 and 138.5 on the Mississippi River near Reserve, Louisiana. During the enforcement period, as reflected in § 165.801(a) through (d), if you are the operator of a vessel in the safety zone, you must comply with directions from the Patrol Commander or any Official Patrol displaying a Coast Guard ensign.

In addition to this notice of enforcement in the **Federal Register**, the Coast Guard plans to provide notification of this enforcement period via a Marine Safety Information Bulletin and/or Broadcast Notice to Mariners.

Dated: June 24, 2021.

W.E. Watson,

Captain, U.S. Coast Guard, Captain of the Port Sector New Orleans.

[FR Doc. 2021–13879 Filed 6–28–21; 8:45 am]

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DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2021–0265; Project Identifier MCAI–2020–01541–R; Amendment 39–21603; AD 2021–12–16]

RIN 2120–AA64

Airworthiness Directives; Airbus Helicopters Deutschland GmbH (AHD) Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for Airbus Helicopters Deutschland GmbH (AHD) Model MBB–BK117 C–2 and MBB–BK117 D–2 helicopters. This AD was prompted by a report of increased control force in the collective axis. This AD requires repetitive visual inspections of the main rotor actuator (MRA), as specified in a European Union Aviation Safety Agency (EASA) AD, which is incorporated by reference. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective August 3, 2021.

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of August 3, 2021.

ADDRESSES: For material incorporated by reference (IBR) in this AD, contact the EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; telephone +49 221 8999 000; email *ADs@easa.europa.eu*; internet *www.easa.europa.eu*. You may find this material on the EASA website at *https://ad.easa.europa.eu*. You may view this material at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N–321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222–5110. It is also available in the AD docket on the internet at *https://www.regulations.gov* by searching for and locating Docket No. FAA–2021–0265.

Examining the AD Docket

You may examine the AD docket on the internet at *https://www.regulations.gov* by searching for and locating Docket No. FAA–2021–0265; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Katherine Venegas, Aviation Safety Engineer, Los Angeles ACO Branch, FAA, 3960 Paramount Blvd., Lakewood, California 90712; telephone (562) 627–5353; email *katherine.venegas@faa.gov*.

SUPPLEMENTARY INFORMATION:

Background

The EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2018–0283, dated December 20, 2018 (EASA AD 2018–0283), to correct an unsafe condition for AHD Model MBB–BK117 C–2 and MBB–BK117 D–2 helicopters. EASA later issued EASA AD 2020–0257, dated November 17,

2020 (EASA AD 2020–0257), to supersede EASA AD 2018–0283.

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to AHD Model MBB–BK117 C–2 and MBB–BK117 D–2 helicopters. The NPRM published in the **Federal Register** on April 8, 2021 (86 FR 18221). The NPRM was prompted by a report of increased control force in the collective axis on an AHD Model EC135 helicopter. Subsequent inspections determined that a nut on a piston of the MRA had cracked and separated from the piston rod. Due to design similarity, Model MBB–BK117 C–2 and MBB–BK117 D–2 helicopters are also affected by this unsafe condition. The NPRM proposed to require repetitive visual inspections of the MRA as specified in EASA AD 2020–0257.

The FAA is issuing this AD to prevent failure of the MRA and subsequent loss of control of the helicopter. See the EASA AD for additional background information.

Discussion of Final Airworthiness Directive

Comments

The FAA gave the public the opportunity to participate in developing this final rule. The FAA received no comments on the NPRM or on the determination of the cost to the public.

Conclusion

The FAA reviewed the relevant data and determined that air safety and the public interest require adopting this final rule as proposed, except the compliance time for the reporting requirement has changed from within 30 days after the effective date of this AD to within 30 days after accomplishing each inspection and determining that there is a crack, damage, black coloration, or corrosion. The FAA has determined that this change:

- Is consistent with the intent that was proposed in the NPRM for addressing the unsafe condition; and
- Does not add any additional burden upon the public than was already proposed in the NPRM.

The FAA also determined that this change will not increase the economic burden on any operator or increase the scope of this final rule.

Related Service Information Under 1 CFR Part 51

EASA AD 2020–0257 specifies procedures for a repetitive visual inspection of the MRA and depending on the results, replacing the affected parts.

This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

Differences Between This AD and the EASA AD

The EASA AD requires contacting Airbus Helicopters or replacing an affected part, whereas this AD requires performing the corrective action in accordance with FAA-approved procedures or removing the affected parts from service instead. The service information referenced in the EASA AD refers to calendar time when specifying the compliance time for the inspections, whereas this AD uses hours time-in-service. The EASA AD allows a tolerance to the compliance times, whereas this AD does not. The EASA AD does not specify a compliance time for the reporting requirements; whereas this AD requires performing the reporting action within 30 days after accomplishing each inspection and determining that there is a crack, damage, black coloration, or corrosion.

Interim Action

The FAA considers this AD interim action. If final action is later identified, the FAA might consider further rulemaking then.

Costs of Compliance

The FAA estimates that this AD affects 216 helicopters of U.S. Registry. Labor rates are estimated at $85 per work-hour. Based on these numbers, the FAA estimates that operators may incur the following costs in order to comply with this AD.

Inspecting the nuts on the MRA pistons takes about 1 work-hour for an estimated cost of $85 per helicopter and $18,360 for the U.S. fleet, per inspection cycle.

Replacing the MRA takes about 7 work-hours and parts cost about $286,554 for an estimated cost of $287,149 per helicopter.

Repairing the MRA takes up to about 8 work-hours and parts cost about $110 for an estimated cost of up to $790 per MRA.

If required, reporting information takes about 1 work-hour for an estimated cost of $85 per instance.

Paperwork Reduction Act

A federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to penalty for failure to comply with a collection of information subject to the requirements of the Paperwork Reduction Act unless that collection of information displays a current valid OMB control number. The control number for the collection of information required by this AD is 2120–0056. The paperwork cost associated with this AD has been detailed in the Costs of Compliance section of this document and includes time for reviewing instructions, as well as completing and reviewing the collection of information. Therefore, all reporting associated with this AD is mandatory. Comments concerning the accuracy of this burden and suggestions for reducing the burden should be directed to Information Collection Clearance Officer, Federal Aviation Administration, 10101 Hillwood Pkwy., Fort Worth, TX 76177–1524.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect 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.

For the reasons discussed above, I certify that this AD:

(1) Is not a ''significant regulatory action'' under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2021–12–16 Airbus Helicopters Deutschland GmbH (AHD): Amendment 39–21603; Docket No. FAA–2021–0265; Project Identifier MCAI–2020–01541–R.

(a) Effective Date

This airworthiness directive (AD) is effective August 3, 2021.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Airbus Helicopters Deutschland GmbH (AHD) Model MBB–BK117 C–2 and MBB–BK117 D–2 helicopters, certificated in any category.

(d) Subject

Joint Aircraft System Component (JASC) Code: 6710, Main Rotor Control.

(e) Reason

This AD was prompted by a report of increased control force in the collective axis. The FAA is issuing this AD to prevent failure of the main rotor actuator and subsequent loss of control of the helicopter.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Requirements

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, European Union Aviation Safety Agency (EASA) AD 2020–0257, dated November 17, 2020 (EASA AD 2020–0257).

(h) Exceptions to EASA AD 2020–0257

(1) Where EASA AD 2020–0257 refers to its effective date, this AD requires using the effective date of this AD.

(2) Where Note 1 of EASA AD 2020–0257 specifies a tolerance of 3 months may be applied to the initial threshold and to the repetitive inspection interval, this AD does not allow this tolerance.

(3) Where paragraph (2) of EASA AD 2020–0257 specifies contacting Airbus Helicopters, this AD requires performing the corrective action in accordance with FAA-approved procedures.

(4) Where paragraph (3) of EASA AD 2020–0257 specifies an alternative method to comply with the requirements of paragraph (2) of EASA AD 2020–0257 by replacing an affected part, this AD requires removing an affected part from service as an alternative method.

(5) Where paragraph (1) of EASA AD 2020–0257 specifies a compliance time for the initial inspection of ''before an affected part exceeds 12 months since new, or since last overhaul, or within 3 months after the effective date of this AD, whichever occurs later'' and repetitive inspections at intervals not to exceed 12 months, this AD requires a compliance time for the initial inspection of before an affected part exceeds 319 total hours time-in-service (TIS), or within 319 hours TIS after the date of the last overhaul, or within 80 hours TIS after the effective date of this AD, whichever occurs later, and repetitive inspections at intervals not to exceed 319 hours TIS.

(6) Although the service information referenced in EASA AD 2020–0257 does not specify a compliance time for the reporting requirement, this AD requires the reporting action to be performed within 30 days after accomplishing each inspection and determining that there is a crack, damage, black coloration, or corrosion.

(7) The ''Remarks'' section of EASA AD 2020–0257 does not apply to this AD.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, send it to the attention of the person identified in paragraph (j) of this AD. Information may be emailed to: *9-AVS-AIR-730-AMOC@faa.gov*.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

For more information about this AD, contact Katherine Venegas, Aviation Safety Engineer, Los Angeles ACO Branch, FAA, 3960 Paramount Blvd., Lakewood, California 90712; telephone (562) 627–5353; email *katherine.venegas@faa.gov.*

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) European Union Aviation Safety Agency (EASA) AD 2020–0257, dated November 17, 2020.

(ii) [Reserved]

(3) For EASA AD 2020–0257, contact the EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; telephone +49 221 8999 000; email *ADs@easa.europa.eu;* internet *www.easa.europa.eu.* You may find this EASA AD on the EASA website at *https://ad.easa.europa.eu.*

(4) You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N–321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222–5110. This material may be found in the AD docket on the internet at *https://www.regulations.gov* by searching for and locating Docket No. FAA–2021–0265.

(5) You may view this material that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fedreg.legal@nara.gov,* or go to *https://www.archives.gov/federal-register/cfr/ibr-locations.html.*

Issued on June 4, 2021.

Gaetano A. Sciortino,

Deputy Director for Strategic Initiatives, Compliance & Airworthiness Division, Aircraft Certification Service.

[FR Doc. 2021–13710 Filed 6–28–21; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2021–0304; Project Identifier 2017–SW–108–AD; Amendment 39–21606; AD 2021–13–01]

RIN 2120–AA64

Airworthiness Directives; Leonardo S.p.a. (Type Certificates Previously Held by Agusta S.p.A. and AgustaWestland S.p.A.) Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for Leonardo S.p.a. (Type Certificate previously held by Agusta S.p.A.) Model AB139 and AW139 helicopters and Leonardo S.p.a. (Type Certificate previously held by AgustaWestland S.p.A.) Model AW189 helicopters. This AD was prompted by reports of missing lock wire and loose fasteners. This AD requires a one-time inspection of the main rotor (M/R) slip ring and depending on the outcome, removing the M/R slip ring from service, removing screws and washers from service,

applying torque, installing lock wire, and re-identifying the M/R slip ring. This AD also prohibits the installation of certain M/R slip rings. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective August 3, 2021.

The Director of the Federal Register approved the incorporation by reference of certain documents listed in this AD as of August 3, 2021.

ADDRESSES: For Leonardo Helicopters and Moog service information identified in this final rule, contact Leonardo S.p.A. Helicopters, Emanuele Bufano, Head of Airworthiness, Viale G.Agusta 520, 21017 C.Costa di Samarate (Va) Italy; telephone +39–0331–225074; fax +39–0331–229046; or at *https://www.leonardocompany.com/en/home*. You may view the referenced service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy, Room 6N–321, Fort Worth, TX 76177. Service information that is incorporated by reference is also available at *https://www.regulations.gov* by searching for and locating Docket No. FAA–2021–0304.

Examining the AD Docket

You may examine the AD docket at *https://www.regulations.gov* by searching for and locating Docket No. FAA–2021–0304; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the European Aviation Safety Agency (now European Union Aviation Safety Agency) (EASA) ADs, any comments received, and other information. The street address for Docket Operations is U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Steven Warwick, Aerospace Engineer, Certification Section, Fort Worth ACO Branch, Compliance & Airworthiness Division, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222–5225; email *steven.r.warwick@faa.gov*..

SUPPLEMENTARY INFORMATION:

Background

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to Leonardo S.p.a. (Type Certificate previously held by Agusta S.p.A.) Model AB139 and AW139 helicopters and Leonardo S.p.a. (Type Certificate previously held by AgustaWestland S.p.A.) Model AW189 helicopters with an M/R slip ring part number (P/N) 4G6220V00151 with a serial number (S/N) up to and including S/N 0141, except those marked with an ''L'' following the S/N, installed. The NPRM published in the **Federal Register** on April 19, 2021 (86 FR 20338). In the NPRM, the FAA proposed to require, with the M/R slip ring removed, inspecting each screw and double-twist lock wire of the upper (connecter) end and lower (pigtail or standpipe) end fasteners of the M/R slip ring. Depending on the outcome, the NPRM proposed to require marking the M/R slip ring; removing the M/R slip ring from service; or removing screws and washers, lock wire, and ferrule ended safety cable from service, installing new screws and washers, applying torque, installing double-twist lock wire, and marking the M/R slip ring. The NPRM also proposed to prohibit the installation of an affected M/R slip ring unless the proposed requirements have been completed. The NPRM was prompted by EASA AD 2017–0083, dated May 10, 2017 (EASA AD 2017–0083), to correct an unsafe condition for Leonardo S.p.A. (formerly Finmeccanica S.p.A, AgustaWestland S.p.A., Agusta S.p.A), AgustaWestland Philadelphia Corporation (formerly Agusta Aerospace Corporation) Model AB139 and AW139 helicopters, and EASA AD 2017–0087, dated May 12, 2017 (EASA AD 2017–0087), to correct the same unsafe condition for Leonardo S.p.A. Helicopters (formerly Finmeccanica S.p.A, AgustaWestland S.p.A.) Model AW189 helicopters, each issued by EASA, which is the Technical Agent for the Member States of the European Union. EASA advises of reports of missing lock wire and loose fasteners found during inspections of the M/R slip ring of Model AW139 helicopters. EASA also advises that the same part-numbered M/R slip ring may also be installed on Model AW189 helicopters. Model AB139 helicopters may also be affected by this unsafe condition due to having the same type design as Model AW139 helicopters. EASA ADs 2017–0083 and 2017–0087 require a one-time visual inspection of the M/R slip ring fastener installation, and depending on the outcome, replacing the M/R slip ring, replacing fasteners, applying torque, installing lock wire, and re-identifying the M/R slip ring. EASA ADs 2017–0083 and 2017–0087 also prohibit installation of an affected M/R slip ring. EASA states, this condition, if not detected and corrected, could lead to failure of the M/R slip ring bearing inner race, possibly resulting in damage to drive system components and subsequent reduced control of the helicopter.

Discussion of Final Airworthiness Directive

Comments

The FAA received no comments on the NPRM or on the determination of the costs.

Conclusion

These helicopters have been approved by EASA and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the European Union, EASA has notified the FAA about the unsafe condition described in its ADs. The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these helicopters. Except for minor editorial changes, this AD is adopted as proposed in the NPRM.

Related Service Information Under 1 CFR Part 51

The FAA reviewed Leonardo Helicopters Alert Service Bulletin (ASB) No. 139–472, dated May 9, 2017 (ASB 139–472), for Model AB139 and AW139 helicopters, and Leonardo Helicopters ASB No. 189–138, dated May 12, 2017 (ASB 189–138), for Model AW189 helicopters. ASB 139–472 and ASB 189–138 specify inspecting the M/R slip ring by following the procedures in Moog Service Bulletin SB 16–01, Revision 5, undated (SB 16–01), which is attached as Annex A to both ASB 139–472 and ASB 189–138. ASB 139–472 and ASB 189–138 are incorporated by reference in this AD. SB 16–01 is not incorporated by reference in this AD.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

Other Related Service Information

The FAA also reviewed SB 16–01, which specifies procedures to visually inspect the M/R slip ring upper (connecter) end and lower (pigtail or standpipe) end fastener screws and double-twist lock wire.

Differences Between This AD and the EASA ADs

EASA ADs 2017–0083 and 2017–0087 include the compliance time of at the next M/R slip ring removal, whereas this AD does not because it could be difficult to track. This AD has a shorter compliance time for all affected M/R slip rings that have accumulated 900 or

more total hours time-in-service, whereas EASA AD 2017–0087 allows a longer compliance time for these affected M/R slip rings that are installed on Model AW189 helicopters. EASA ADs 2017–0083 and 2017–0087 specify inspecting for the proper lock wire installed, while this AD specifies inspecting for correct installation of lock wire 0.20 CRES NAS 33540 P/N MS20995C20 (double-twist lock wire) and any missing double-twist lock wire. If a screw is missing from the inner diameter (the connector flange) of the upper end of the M/R slip ring, EASA ADs 2017–0083 and 2017–0087 specify replacing the M/R slip ring with a serviceable part, whereas this AD requires removing the M/R slip ring from service instead. If a screw is missing from the outer diameter of the upper end, from the inner diameter of the lower end (shaft extension attachment area), or from the outer diameter of the lower end, this AD requires installing a new screw and washer, applying torque, and installing lock wire, whereas corrective action for this condition is not specified in EASA AD 2017–0083 or 2017–0087.

Costs of Compliance

The FAA estimates that this AD affects 134 helicopters of U.S. Registry. Labor rates are estimated at $85 per work-hour. Based on these numbers, the FAA estimates the following costs to comply with this AD.

Inspecting an M/R slip ring takes about 10 work-hours for an estimated cost of $850 per helicopter and $113,900 for the U.S. fleet. Marking an M/R slip ring takes a minimal amount of time and parts cost a nominal amount. Replacing an M/R slip ring takes about 3 work-hours and parts cost about $65,000 for an estimated cost of $65,255 per helicopter. Removing any ferrule ended safety cable; replacing screws and washers; applying torque; and installing lock wire takes about 1 work-hour and parts cost a nominal amount for an estimated cost of $85 per helicopter.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on helicopters identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect 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.

For the reasons discussed above, I certify that this AD:

(1) Is not a ''significant regulatory action'' under Executive Order 12866,

(2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2021–13–01 Leonardo S.p.a. (Type Certificates Previously Held by Agusta S.p.A. and AgustaWestland S.p.A.): Amendment 39–21606; Docket No. FAA–2021–0304; Project Identifier 2017–SW–108–AD.

(a) Effective Date

This airworthiness directive (AD) is effective August 3, 2021.

(b) Affected ADs

None.

(c) Applicability

This AD applies to Leonardo S.p.a. (Type Certificate previously held by Agusta S.p.A.) Model AB139 and AW139 helicopters and Leonardo S.p.a. (Type Certificate previously held by AgustaWestland S.p.A.) Model AW189 helicopters, certificated in any category, with a main rotor (M/R) slip ring part number (P/N) 4G6220V00151 with a serial number (S/N) up to and including S/N 0141, except those marked with an ''L'' following the S/N, installed.

(d) Subject

Joint Aircraft Service Component (JASC) Code: 6200, Main Rotor System.

(e) Unsafe Condition

This AD was prompted by reports of missing lock wire and loose fasteners. The FAA is issuing this AD to address failure of an M/R slip ring fastener. The unsafe condition, if not addressed, could result in failure of the M/R slip ring bearing inner race, reduced M/R control, and subsequent loss of control of the helicopter.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) For an M/R slip ring that has accumulated 900 or more total hours time-in-service (TIS), within 50 hours TIS after the effective date of this AD; and for an M/R slip ring that has accumulated less than 900 total hours TIS, within 300 hours TIS after the effective date of this AD or before accumulating 950 total hours TIS, whichever occurs first:

(i) With the M/R slip ring removed, visually inspect for the presence of each screw, the presence of any ferrule ended safety cable, the correct installation of lock wire 0.20 CRES NAS 33540 P/N MS20995C20 (double-twist lock wire), and any missing double-twist lock wire for each set of upper (connecter) end and lower (pigtail or standpipe) end fasteners of the M/R slip ring as depicted in Figures 1 and 2 of Annex A to Leonardo Helicopters Alert Service Bulletin (ASB) No. 139–472, dated May 9, 2017 (ASB 139–472), or Leonardo Helicopters ASB No. 189–138, dated May 12, 2017 (ASB 189–138), as applicable to your model helicopter. Figures 2 and 3 of Annex A to ASB 139–472 and ASB 189–138 also show examples of a ferrule ended safety cable installed that are not approved.

Note 1 to paragraph (g)(1)(i): Annex A to ASB 139–472 and ASB 189–138 is Moog Service Bulletin SB 16–01, Revision 5, undated.

(ii) If all of the screws are present, there is not any ferrule ended safety cable installed, the double-twist lock wire is correctly installed, and none of the double-twist lock wire is missing on each set of upper end and lower end fasteners of the M/R slip ring, before further flight, mark the letter ''L'' following the S/N on the identification label by following the Compliance Instructions, paragraph 3) of Annex A to ASB 139–472 or ASB 189–138, as applicable to your model helicopter.

(iii) If a screw is missing from the inner diameter (the connector flange) of the upper

end of the M/R slip ring, before further flight, remove the M/R slip ring from service.

(iv) If a screw is missing from the outer diameter of the upper end, from the inner diameter of the lower end (shaft extension attachment area), or from the outer diameter of the lower end, before further flight, install a new screw and washer, apply a torque to 1–1.25 Nm, and install double-twist lock wire by following the Compliance Instructions, paragraphs 9)a) through g) of Annex A to ASB 139–472 or ASB 189–138, as applicable to your model helicopter.

(v) If any double-twist lock wire is not correctly installed, is missing, or if there is a ferrule ended safety cable installed on any set of upper end or lower end fasters of the M/R slip ring, before further flight, remove the incorrectly installed lock wire or ferrule ended safety cable from service, as applicable, and inspect the fastener torque by applying 1–1.25 Nm of torque.

(A) If the torque of a screw installed in the inner diameter (the connector flange) of the upper end of the M/R slip ring is below 1 Nm of torque, do not remove or replace the screw, before further flight, apply a torque of 1–1.25 Nm.

(B) If the torque of a screw installed in the outer diameter of the upper end, in the inner diameter of the lower end (shaft extension attachment area), or in the outer diameter of the lower end is below 1 Nm of torque, before further flight, remove the affected screw and washer from service, install a new screw and washer, and apply a torque of 1–1.25 Nm.

(C) Install double-twist lock wire by following the Compliance Instructions, paragraphs 9)a) through g) of Annex A to ASB 139–472 or ASB 189–138, as applicable to your model helicopter.

(vi) Mark the letter ''L'' following the S/N on the identification label by following the Compliance Instructions, paragraph 3) of Annex A to ASB 139–472 or ASB 189–138, as applicable to your model helicopter.

(2) As of the effective date of this AD, do not install an M/R slip ring identified in paragraph (c) of this AD unless the requirements of paragraph (g)(1) of this AD have been accomplished.

(h) Special Flight Permits

Special flight permits are prohibited.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, send it to the attention of the person identified in paragraph (j)(1) of this AD. Information may be emailed to: *9-AVS-AIR-730-AMOC@faa.gov*.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

(1) For more information about this AD, contact Steven Warwick, Aerospace Engineer, Certification Section, Fort Worth ACO Branch, Compliance & Airworthiness Division, 10101 Hillwood Pkwy., Fort Worth, TX 76177; telephone (817) 222–5225; email *steven.r.warwick@faa.gov*.

(2) Moog Service Bulletin SB 16–01, Revision 5, undated, is attached as Annex A to both ASB 139–472 and ASB 189–138. As the design approval holder for the products identified in paragraph (c) of this AD, contact Leonardo Helicopters for the Moog service information at the contact information specified in paragraph (k)(3) of this AD. It is also available at the contact information specified in paragraph (k)(4) of this AD.

(3) The subject of this AD is addressed in European Aviation Safety Agency (now European Union Aviation Safety Agency) (EASA) AD 2017–0083, dated May 10, 2017, and EASA AD 2017–0087, dated May 12, 2017. You may view the EASA ADs at *https://www.regulations.gov* in Docket No. FAA–2021–0304.

(k) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Leonardo Helicopters Alert Service Bulletin (ASB) No. 139–472, dated May 9, 2017.

(ii) Leonardo Helicopters ASB No. 189–138, dated May 12, 2017.

(3) For Leonardo Helicopters service information identified in this AD, contact Leonardo S.p.A. Helicopters, Emanuele Bufano, Head of Airworthiness, Viale G.Agusta 520, 21017 C.Costa di Samarate (Va) Italy; telephone +39–0331–225074; fax +39–0331–229046; or at *https://www.leonardocompany.com/en/home*.

(4) You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N–321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222–5110.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: *fedreg.legal@nara.gov,* or go to: *https://www.archives.gov/federal-register/cfr/ibr-locations.html*.

Issued on June 8, 2021.

Lance T. Gant,

Director, Compliance & Airworthiness Division, Aircraft Certification Service.

[FR Doc. 2021–13711 Filed 6–28–21; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Docket No. FAA–2021–0225; Airspace Docket No. 20–AAL–13]

RIN 2120–AA66

Amendment of Class E Airspace; Anaktuvuk Pass, AK

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: This action modifies the Class E airspace extending upward from 700 feet above the surface at Anaktuvuk Pass Airport, Anaktuvuk Pass, AK. This action updates the airport's geographic coordinates and removes the Anaktuvuk Pass NDB from the Class E5 text header and airspace description. The airspace supports instrument flight rules (IFR) operations at the airport.

DATES: Effective 0901 UTC, October 7, 2021. The Director of the Federal Register approves this incorporation by reference action under 1 CFR part 51, subject to the annual revision of FAA Order 7400.11 and publication of conforming amendments.

ADDRESSES: FAA Order 7400.11E, Airspace Designations and Reporting Points, and subsequent amendments can be viewed online at *https://www.faa.gov//air_traffic/publications/*. For further information, you can contact the Airspace Policy Group, Federal Aviation Administration, 800 Independence Avenue SW, Washington, DC 20591; telephone: (202) 267–8783. The Order is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of FAA Order 7400.11E at NARA, email *fedreg.legal@nara.gov* or go to *https://www.archives.gov/federal-register/cfr/ibr-locations.html*.

FOR FURTHER INFORMATION CONTACT: Matthew Van Der Wal, Federal Aviation Administration, Western Service Center, Operations Support Group, 2200 . 216th Street, Des Moines, WA 98198; telephone (206) 231–3695.

SUPPLEMENTARY INFORMATION:

Authority for This Rulemaking

The FAA's authority to issue rules regarding aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority. This rulemaking is

promulgated under the authority described in Subtitle VII, Part A, Subpart I, Section 40103. Under that section, the FAA is charged with prescribing regulations to assign the use of airspace necessary to ensure the safety of aircraft and the efficient use of airspace. This regulation is within the scope of that authority as it modifies the Class E airspace at Anaktuvuk Pass Airport, Anaktuvuk Pass, AK, to ensure the safety and management of IFR operations at the airport.

History

The FAA published a notice of proposed rulemaking in the **Federal Register** (86 FR 18490; April 9, 2021) for Docket No. FAA–2021–0225 to modify the Class E airspace at Anaktuvuk Pass Airport, Anaktuvuk Pass, AK. Interested parties were invited to participate in this rulemaking effort by submitting written comments on the proposal to the FAA. No comments were received.

The NPRM for this action proposed to establish Class E airspace extending upward from 1,200 feet above the surface at Anaktuvuk Pass Airport. However, after the publication of the NPRM, the FAA determined that a previous Final Rule (76 FR 78144; December 16, 2011) for Docket No. FAA–2011–0867 established Class E airspace extending upward from 1,200 feet above the surface within a 66-mile radius of the airport. This airspace area was not included in the Class E5 airspace description published in FAA Order 7400.11E. Since Class E airspace, extending upward from 1,200 feet above the surface, already exists for the airport, the FAA is not modifying this airspace area. The airspace area has been added to the Class E5 airspace legal description.

Class E5 airspace designations are published in paragraph 6005 of FAA Order 7400.11E, dated July 21, 2020, and effective September 15, 2020, which is incorporated by reference in 14 CFR 71.1. The Class E airspace designation listed in this document will be published subsequently in the Order.

Availability and Summary of Documents for Incorporation by Reference

This document amends FAA Order 7400.11E, Airspace Designations and Reporting Points, dated July 21, 2020, and effective September 15, 2020. FAA Order 7400.11E is publicly available as listed in the **ADDRESSES** section of this document. FAA Order 7400.11E lists Class A, B, C, D, and E airspace areas, air traffic service routes, and reporting points.

The Rule

This amendment to 14 CFR part 71 modifies the Class E airspace, extending upward from 700 feet above the surface, at Anaktuvuk Pass Airport, Anaktuvuk Pass, AK. The modification properly sizes the airspace to contain IFR departures until reaching 1,200 feet above the surface, and IFR arrivals descending below 1,500 feet above the surface. The airspace's circular radius is reduced from 6.4 miles to 4 miles and three areas are added to the 4-mile radius. Two areas northeast of the airport and one area southwest of the airport.

This action also removes the Anaktuvuk Pass NDB from the Class E5 text header and airspace description. The Navigational Aid (NAVAID) is not needed to describe the airspace and removal of the NAVAID simplifies the airspace's description.

This action also updates the airport's geographical coordinates to ''lat. 68°08′01″ N, long. 151°44′36″ W.''

FAA Order 7400.11, Airspace Designations and Reporting Points, is published yearly and effective on September 15.

Regulatory Notices and Analyses

The FAA has determined that this regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current, is non-controversial, and unlikely to result in adverse or negative comments. It, therefore: (1) Is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule, when promulgated, would not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Environmental Review

The FAA has determined that this action qualifies for categorical exclusion under the National Environmental Policy Act in accordance with FAA Order 1050.1F, ''Environmental Impacts: Policies and Procedures,'' paragraph 5–6.5a. This airspace action is not expected to cause any potentially significant environmental impacts, and no extraordinary circumstances exist that warrant the preparation of an environmental assessment.

List of Subjects in 14 CFR Part 71

Airspace, Incorporation by reference, Navigation (air).

Adoption of the Amendment

In consideration of the foregoing, the Federal Aviation Administration amends 14 CFR part 71 as follows:

PART 71—DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS

■ 1. The authority citation for 14 CFR part 71 continues to read as follows:

Authority: 49 U.S.C. 106(f), 106(g), 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

§ 71.1 [Amended]

■ 2. The incorporation by reference in 14 CFR 71.1 of FAA Order 7400.11E, Airspace Designations and Reporting Points, dated July 21, 2020, and effective September 15, 2020, is amended as follows:

Paragraph 6005 Class E Airspace Areas Extending Upward From 700 Feet or More Above the Surface of the Earth.

* * * * *

AAL AK E5 Anaktuvuk Pass, AK [Amended]

Anaktuvuk Pass Airport, AK
(Lat. 68°08′01″ N, long. 151°44′36″ W)

That airspace extending upward from 700 feet above the surface within a 4-mile radius of the airport, and within 1.0 mile west and 1.2 miles east of the 022° bearing from the airport, extending from the 4-mile radius to 23.7 miles north of the airport, and within 2.4 miles west and 1.8 miles east of the 038° bearing from the airport, extending from the 4-mile radius to 13 miles northeast of the airport, and within 1 mile each side of the 233° bearing from the airport, extending from the 4-mile radius to 4.5 miles southwest of the airport; and that airspace extending upward from 1,200 feet above the surface within a 66-mile radius of the airport.

Issued in Des Moines, Washington, on June 22, 2021.

B.G. Chew,

Acting Group Manager, Operations Support Group, Western Service Center.

[FR Doc. 2021–13704 Filed 6–28–21; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF THE INTERIOR

Bureau of Safety and Environmental Enforcement

30 CFR Part 250

[Docket ID: BSEE–2021–0002; EEE500000 21XE1700DX EX1SF0000.EAQ000]

RIN 1014–AA43

Oil and Gas and Sulfur Operations on the Outer Continental Shelf—Maximum Daily Civil Penalty Amounts for Violations of the Federal Oil and Gas Royalty Management Act

AGENCY: Bureau of Safety and Environmental Enforcement, Interior.

ACTION: Final rule.

SUMMARY: This final rule amends the Bureau of Safety and Environmental Enforcement (BSEE) regulations that set Maximum Daily Civil Penalty (MDCP) amounts for violations of the Federal Oil and Gas Royalty Management Act (FOGRMA). The amended BSEE regulations will cross-reference regulations of the Office of Natural Resources Revenue (ONRR) that also set MDCP amounts for FOGRMA violations. This cross-reference will ensure consistency between BSEE's FOGRMA MDCP amounts and ONRR's FOGRMA MDCP amounts. It will also ensure consistent compliance with the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015 (FCPIAAIA of 2015) and related Office of Management and Budget (OMB) guidance, while reducing unnecessary duplication of effort and costs to the agency.

DATES: This rule is effective on June 29, 2021.

FOR FURTHER INFORMATION CONTACT: Kirk Malstrom, Bureau of Safety and Environmental Enforcement, Office of Offshore Regulatory Programs, Regulations and Standards Branch at (202) 258–1518 or by email: *regs@bsee.gov.*

SUPPLEMENTARY INFORMATION:

I. Background and Legal Authority

On November 2, 2015, the FCPIAAIA of 2015, Public Law 114–74, section 701 (codified at 28 U.S.C. 2461 note) became law. The FCPIAAIA of 2015 required Federal agencies to adjust the level of civil monetary penalties imposed under each agency's regulations with an initial ''catch-up'' adjustment through rulemaking, if warranted, and then to make subsequent annual adjustments for inflation. Under the FCPIAAIA of 2015, agencies were required to publish the initial annual inflation adjustments in the **Federal Register** by no later than January 15, 2017 and are required to publish annual adjustments by no later than January 15th of each subsequent year. The purpose of these adjustments is to maintain the deterrent effect of civil penalties and to further the policy goals of the underlying statutes that authorized the penalties.

BSEE has authority to impose civil penalties for violations of the Outer Continental Shelf Lands Act, 43 U.S.C. 1331–1356a (OCSLA). BSEE regulations implementing its authority to impose civil penalties under OCSLA are found at 30 CFR 250.1400–250.1409. In addition, BSEE has authority to impose civil penalties for violations of FOGRMA, 30 U.S.C. 1701 *et seq.,* under section 109 of that Act (30 U.S.C. 1719). BSEE's regulations implementing its authority to impose penalties under FOGRMA are found at 30 CFR 250.1450–250.1456, 250.1460–250.1464, and 250.1470–250.1477. Specifically, BSEE may impose civil penalties under FOGRMA—after providing a Notice of Noncompliance (NONC) and an opportunity to correct the violation(s)—for noncompliance with any applicable statute, regulation, order, or lease term relating to any Federal oil or gas lease. *See* 30 CFR 250.1451. BSEE may also impose penalties under FOGRMA, without providing prior notice or an opportunity to correct the violation, for certain knowing or willful violations of the substantive provisions of FOGRMA (*e.g.,* failure or refusal to permit lawful entry, inspection, or audit; knowing or willful submission of false or misleading information). *See id.* at § 250.1460.

Sections 250.1453 and 250.1460 of BSEE's existing regulations specify the MDCP amounts, as prescribed by section 109 of FOGRMA (30 U.S.C. 1719), for the violations described in sections 250.1451, 250.1453, and 250.1460.[1] As required by the FCPIAAIA of 2015, however, BSEE's FOGRMA civil penalty amounts must be adjusted annually for inflation.

Within the Department of the Interior (the Department), ONRR is the agency responsible for collecting revenue from energy leases and auditing royalty payments under FOGRMA. Like BSEE, ONRR also has authority to impose civil penalties for certain violations of FOGRMA. ONRR's civil penalty regulations are found in 30 CFR part 1241. As required by the FCPIAAIA of 2015, ONRR also must annually adjust, for inflation, the MDCP amounts in its regulations for FOGRMA violations. ONRR published such a final rule for calendar year 2017 on April 24, 2017, adjusting the MDCP amounts in 30 CFR part 1241 for FOGRMA violations. *See* 82 FR 18858. Each year since, ONRR has calculated and adjusted the MDCP amounts in 30 CFR part 1241 in accordance with the FCPIAAIA of 2015. On February 2, 2021, ONRR published the final rule adjusting the MDCP amounts in 30 CFR part 1241 for calendar year 2021. *See* 86 FR 7808.[2]

Because FOGRMA sets the MDCP amounts for penalties assessed by BSEE and ONRR for violations of FOGRMA, and the FCPIAAIA of 2015 uniformly applies to require adjustments to the civil penalties that may be assessed by both agencies as calculated from the same base year, BSEE's FOGRMA MDCP amounts must be the same as ONRR's FOGRMA MDCP amounts.

II. Changes Made to Existing BSEE Regulations

BSEE is amending §§ 250.1453 and 250.1460 of its FOGRMA civil penalty regulations in order to cross-reference the ONRR civil penalty regulations in 30 CFR part 1241. By cross-referencing the ONRR regulations, BSEE's MDCP amounts for FOGRMA violations will be the same as ONRR's MDCP amounts, ensuring ongoing consistency within the Department as ONRR adjusts the FOGRMA MDCP amounts annually for inflation. In addition, this rule will avoid the duplication of effort and unnecessary expenditures within the Department that would occur if both BSEE and ONRR were to develop and publish separate final rules every year adjusting their corresponding FOGRMA MDCP amounts.

[1] Under existing § 250.1453(a), BSEE may initially impose civil penalties of up to $500 per day for each violation of FOGRMA that is not corrected within 20 days of receipt of a NONC identifying the violation. Under existing § 250.1453(b), BSEE may increase the MDCP amount up to $5,000 per day for each violation not corrected within 40 days of the NONC. In addition, under existing § 250.1460(a) and (b), BSEE may impose penalties, without prior notice, of up to $10,000 or $25,000 per day, respectively, for the FOGRMA violations specified in those provisions.

[2] Specifically, ONRR amended 30 CFR 1241.52(a)(2) to authorize civil penalties of up to $1,288 per day for each violation of FOGRMA that is not corrected within 20 days of receipt of a NONC identifying the violation. *See* 86 FR 7808, 7810. Under the amended 30 CFR 1241.52(b), ONRR may impose civil penalties of up to $12,891 per day for each violation that is not corrected within 40 days of receipt of the NONC. Finally, ONNR amended 30 CFR 1241.60(b)(1) and (b)(2) to authorize imposition of penalties, without prior notice, of up to $25,780 or $64,452 per day, respectively, for certain specified violations of FOGRMA. *Id.*

III. Administrative Procedure Act Requirements

In general, an agency must first publish a proposed rule, to provide prior notice and an opportunity for public comment, before adopting a final rule. However, no such proposal is necessary for this final rule. Section 4(b)(2) of the FCPIAAIA of 2015 states that agencies shall adjust civil monetary penalties ''notwithstanding Section 553 of the Administrative Procedure Act.'' In this manner, Congress exempted the annual inflation adjustments implemented pursuant to the FCPIAAIA of 2015 from the notice and comment requirements of the Administrative Procedure Act, 5 U.S.C. 551 *et seq.* (the APA), allowing agencies to publish FCPIAAIA adjustments as final rules without prior proposed rules.

This interpretation of the APA's application to FCPIAAIA of 2015 is confirmed by the most recent annual guidance issued by OMB Memorandum on December 23, 2020, in Memorandum M–21–10, *Implementation of Penalty Inflation Adjustments for 2021, Pursuant to the FCPIAAIA of 2015,* OMB Memorandum M–21–10 (M–21–10), available at *https://www.whitehouse.gov/wp-content/uploads/2020/12/M-21-10.pdf*). OMB Memorandum M–21–10 explains the agency responsibilities under the FCPIAAIA of 2015 as: Identifying applicable penalties and performing the annual adjustment; publishing revisions to regulations to implement the adjustment in the **Federal Register**; applying adjusted penalty levels; and performing agency oversight of inflation adjustments. As stated in that Memorandum, ''the public procedure the APA generally requires—notice, an opportunity for comment, and a delay in effective date—is not required for agencies to issue regulations implementing the annual adjustment.'' OMB M–21–10 at p. 3.

In addition, section 553(b) of the APA provides that an opportunity for notice and comment on a proposed rule is not required when an agency finds, for good cause, that prior notice and public procedure are impracticable, unnecessary, or contrary to the public interest. BSEE finds that it is unnecessary to issue a proposed rule prior to this final rule because the FCPIAAIA of 2015 does not leave any discretion to BSEE—specifying the adjustments to be made, the methodology to be employed, and the index for inflation to be utilized—and that BSEE thus cannot choose to take a different course in response to comments.

Section 553(b) also provides that the requirement for notice and comment does not apply to ''rules of agency, organization, procedure, or practice.'' BSEE's decision to address the civil penalty adjustment required by the FCPIAAIA by cross-referencing ONRR regulations, subject to the same standards for adjustment, rather than annually amending the FOGRMA penalties in each affected BSEE regulation, is an exercise of procedural rulemaking, which primarily concerns BSEE's internal operations. Here, BSEE is organizing its internal procedures to meet its own legal duties. Moreover, while notice and comment is required for rules that affect rights or duties of the public, BSEE's reliance on cross-referencing does not affect the rights of any regulated parties because the civil penalty amount will be the same regardless of whether those amounts are cross-referenced to ONRR's regulations. ONRR must calculate and adjust the MDCP amounts in 30 CFR part 1241 annually in accordance with the FCPIAAIA of 2015 and related OMB guidance, just as BSEE must do.

IV. Procedural Requirements

A. Regulatory Planning and Review (E.O. 12866 and 13563)

Executive Order (E.O.) 12866 provides that the OMB Office of Information and Regulatory Affairs (OIRA) will review all significant rules. OIRA has determined that this rule is not significant. OMB M–18–03 at 3.

E.O. 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. E.O. 13563 directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 further emphasizes that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements, to the extent permitted by statute.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act (RFA) requires an agency to prepare a regulatory flexibility analysis for all rules unless the agency certifies that the rule will not have a significant economic impact on a substantial number of small entities. The RFA applies only to rules for which an agency is required to first publish a proposed rule. (*See* 5 U.S.C. 603(a) and 604(a)). For the reasons discussed in part III of this notice, BSEE is not required to publish a proposed rule prior to this final rule. Thus, the RFA does not apply to this rulemaking.

C. Small Business Regulatory Enforcement Fairness Act

This rule is not a major rule under 5 U.S.C. 804(2), the Small Business Regulatory Enforcement Fairness Act. This rule:

(1) Does not have an annual effect on the economy of $100 million or more.

(2) Will not cause a major increase in costs or prices for consumers, individual industries, Federal, State, or local government agencies, or geographic regions.

(3) Does not have significant adverse effects on competition, employment, investment, productivity, innovation, or the ability of U.S.-based enterprises to compete with foreign-based enterprises.

D. Unfunded Mandates Reform Act

This rule does not impose an unfunded mandate on State, local, or tribal governments, or the private sector of more than $100 million per year. The rule does not have a significant or unique effect on State, local, or tribal governments or the private sector. Therefore, a statement containing the information required by the Unfunded Mandates Reform Act (2 U.S.C. 1531 *et seq.*) is not required.

E. Takings (E.O. 12630)

This rule does not affect a taking of private property or otherwise have takings implications under E.O. 12630. Therefore, a takings implication assessment is not required.

F. Federalism (E.O. 13132)

Under the criteria in section 1 of E.O. 13132, this rule does not have sufficient federalism implications to warrant the preparation of a federalism summary impact statement. This rule will not substantially and directly affect the relationship between the Federal and State governments. To the extent that State and local governments have a role in OCS activities, this rule will not affect that role. Therefore, a federalism summary impact statement is not required.

G. Civil Justice Reform (E.O. 12988)

This rule complies with the requirements of E.O. 12988. Specifically, this rule:

(1) Meets the criteria of section 3(a) requiring that all regulations be reviewed to eliminate errors and ambiguity and be written to minimize litigation; and

(2) Meets the criteria of section 3(b)(2) requiring that all regulations be written in clear language and contain clear legal standards.

H. Consultation With Indian Tribes (E.O. 13175 and Departmental Policy)

The Department strives to strengthen its government-to-government relationship with Indian tribes through a commitment to consultation with Indian tribes and recognition of their right to self-governance and tribal sovereignty. We evaluated this rule under the Department's consultation policy, under Departmental Manual Part 512 Chapters 4 and 5, and under the criteria in E.O. 13175. We determined that this rule has no substantial direct effects on Federally-recognized Indian tribes or Alaska Native Claims Settlement Act (ANCSA) Corporations, and that consultation under the Department's tribal and ANCSA consultation policies is not required.

I. Paperwork Reduction Act

This rule does not contain information collection requirements, and a submission to the OMB under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*) is not required.

J. National Environmental Policy Act

This rule does not constitute a major Federal action significantly affecting the quality of the human environment. A detailed statement under the National Environmental Policy Act of 1969 (NEPA) is not required because the rule is covered by a categorical exclusion (*see* 43 CFR 46.210(i)). This rule is excluded from the requirement to prepare a detailed statement because it is a regulation of an administrative nature. BSEE also determined that the rule does not implicate any of the extraordinary circumstances listed in 43 CFR 46.215 that would require further NEPA analysis.

K. Effects on the Energy Supply (E.O. 13211)

This rule is not a significant energy action under the definition in E.O. 13211. Therefore, a Statement of Energy Effects is not required.

List of Subjects in 30 CFR Part 250

Administrative practice and procedure, Continental shelf, Continental Shelf—mineral resources, Continental Shelf—rights-of-way, Environmental impact statements, Environmental protection, Government contracts, Investigations, Oil and gas exploration, Penalties, Pipelines, Reporting and recordkeeping requirements, Sulfur.

Laura Daniel-Davis,

Principal Deputy Assistant Secretary, Land and Minerals Management.

For the reasons given in the preamble, the Bureau of Safety and Environmental Enforcement amends title 30, chapter II, subchapter B, part 250 Code of Federal Regulations as follows.

PART 250—OIL AND GAS AND SULFUR OPERATIONS IN THE OUTER CONTINENTAL SHELF

■ 1. The authority citation for part 250 continues to read as follows:

Authority: 30 U.S.C. 1751, 31 U.S.C. 9701, 33 U.S.C. 1321(j)(1)(C), 43 U.S.C. 1334.

■ 2. Revise § 250.1453 to read as follows:

§ 250.1453 What if I do not correct the violation?

(a) We may send you a Notice of Civil Penalty if you do not correct all of the violations identified in the Notice of Noncompliance within 20 days after you receive the Notice of Noncompliance (or within a longer time period specified in that Notice). The Notice of Civil Penalty will tell you how much penalty you must pay for each day, beginning with the date of the Notice of Noncompliance, for each violation identified in the Notice of Noncompliance for as long as you do not correct the violation. The maximum civil penalty amount for each day of such an uncorrected violation is as specified in 30 CFR 1241.52(a)(2).

(b) If you do not correct all of the violations identified in the Notice of Noncompliance within 40 days after you receive the Notice of Noncompliance (or 20 days following the expiration of a longer time period specified in that Notice), we may increase the penalty for each day, beginning with the date of the Notice of Noncompliance, for each violation for as long as you do not correct the violations. The maximum civil penalty amount for each day of such an uncorrected violation is as specified in 30 CFR 1241.52(b).

■ 3. Revise § 250.1460 to read as follows:

§ 250.1460 May I be subject to penalties without prior notice and an opportunity to correct?

The Federal Oil and Gas Royalty Management Act sets out several specific violations for which penalties accrue without an opportunity to first correct the violation.

(a) Under 30 U.S.C. 1719(c), you may be subject to civil penalties up to the maximum amount specified in 30 CFR 1241.60(b)(1) for each violation for each day that it continues if you:

(1) Fail or refuse to permit lawful entry, inspection, or audit; or

(2) Knowingly or willfully fail or refuse to notify the Secretary, within 5 business days after any well begins production on a lease site or allocated to a lease site, or resumes production in the case of a well which has been off production for more than 90 days, of the date on which production has begun or resumed.

(b) Under 30 U.S.C. 1719(d), you may be subject to civil penalties up to the maximum amount specified in 30 CFR 1241.60(b)(2) for each violation for each day that it continues if you:

(1) Knowingly or willfully prepare, maintain, or submit false, inaccurate, or misleading reports, notices, affidavits, records, data, or other written information;

(2) Knowingly or willfully take or remove, transport, use or divert any oil or gas from any lease site without having valid legal authority to do so; or

(3) Purchase, accept, sell, transport, or convey to another person, any oil or gas knowing or having reason to know that such oil or gas was stolen or unlawfully removed or diverted.

[FR Doc. 2021–13805 Filed 6–28–21; 8:45 am]

BILLING CODE 4310–VH–P

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Part 165

[Docket Number USCG–2021–0379]

RIN 1625–AA00

Safety Zone; Lake Charles, Lake Charles, LA

AGENCY: Coast Guard, DHS.

ACTION: Temporary final rule.

SUMMARY: The Coast Guard is establishing a temporary safety zone for all navigable waters of Lake Charles west of 93°13′51.2″ W, east of 93°14′8.3″ W, and extending 500 yards south from the northern shore of Lake Charles. This safety zone is necessary to protect persons and vessels from hazards associated with a Pro Watercross event on August 28 and 29, 2021 in Lake Charles, LA. This regulation prohibits persons and vessels from being in the

safety zone unless authorized by the Captain of the Port Marine Safety Unit Port Arthur or a designated representative.

DATES: This rule is effective from 8 a.m. through 6 p.m. on August 28, 2021 and August 29, 2021.

ADDRESSES: To view documents mentioned in this preamble as being available in the docket, go to *https://www.regulations.gov,* type USCG–2021–0379 in the search box and click ''Search.'' Next, in the Document Type column, select ''Supporting & Related Material.''

FOR FURTHER INFORMATION CONTACT: If you have questions on this rule, call or email LT Christpher Saylor, MSU Lake Charles, U.S. Coast Guard; telephone 337–491–7816, email *Christopher.M.Saylor@uscg.mil.*

SUPPLEMENTARY INFORMATION:

I. Table of Abbreviations

CFR Code of Federal Regulations
DHS Department of Homeland Security
FR Federal Register
NPRM Notice of proposed rulemaking
§ Section
U.S.C. United States Code

II. Background Information and Regulatory History

On May 19, 2021, the Pro Watercross Orginzation notified the Coast Guard that it would be conducting watercross races from 8 a.m. through 6 p.m. on August 28 and 29, 2021. These watercross races are scheduled to be conducted along the north shore of Lake Charles in waters west of 93°13′51.2″ W, east of 93°14′8.3″ W, and extending 500 yards south from the north shoreline of Lake Charles, LA. The Captain of the Port Marine Safety Unit Port Arthur (COTP) determined that potential hazards associated with the pro watercross races would be a safety concern for spectator craft and vessels in the vicinity of these race events. In response, on June 3, 2021, the Coast Guard published a notice of proposed rulemaking (NPRM) titled Safety Zone; Lake Charles, Lake Charles, LA (86 FR 29725). There we stated why we issued the NPRM, and invited comments on our proposed regulatory action related to this marine event. During the comment period that ended June 18, 2021, we received one comment concurring with the proposed rule.

Under 5 U.S.C. 553(d)(3), the Coast Guard finds that good cause exists for making this rule effective less than 30 days after publication in the **Federal Register**. Delaying the effective date of this rule would be impracticable because immediate action is needed to respond to the potential safety hazards associated with high speed boat races.

III. Legal Authority and Need for Rule

The Coast Guard is issuing this rule under authority in 46 U.S.C. 70034 (previously 33 U.S.C. 1231). The Captain of the Port Port Arthur (COTP) has determined that potential hazards associated with pro watercross races at this location would a safety concern for spectator craft and vessels in the vicinity of these race events.

The purpose of this rule is to ensure safety of vessels and the navigable waters in the safety zone before, during, and after the scheduled event.

IV. Discussion of Comments, Changes, and the Rule

As noted above, we received one concurring comment on our NPRM published June 3, 2021. There are no changes in the regulatory text of this rule from the proposed rule in the NPRM.

This rule establishes a safety zone from 8 a.m. on August 28, 2021 through 6 p.m. on August 29, 2021. The safety zone will cover all navigable waters west of 93°13′51.2″ W, east of 93°14′8.3″ W, and extending 500 yards south from the north shoreline of Lake Charles, LA. The duration of the safety zone is intended to protect participants, spectators, and other persons and vessels, in the navigable waters of the Lake Charles during the watercross races.

No vessel or person will be permitted to enter the safety zone without obtaining permission from the COTP or a designated representative.

V. Regulatory Analyses

We developed this rule after considering numerous statutes and Executive orders related to rulemaking. Below we summarize our analyses based on a number of these statutes and Executive orders, and we discuss First Amendment rights of protestors.

A. Regulatory Planning and Review

Executive Orders 12866 and 13563 direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits. This rule has not been designated a ''significant regulatory action,'' under Executive Order 12866. Accordingly, this rule has not been reviewed by the Office of Management and Budget (OMB).

This regulatory action determination is based on the proposed size, location, and duration of the safety zone. The temporary safety zone would be enforced on a 500-yards by 500-yards portion of navigable waters of Lake Charles, LA for only two days. This rule would be enforced to protect personnel, vessels, and the marine environment from hazards associated with the pro watercross race.

The Coast Guard will notify the public by issuing Local Notice to Mariners (LNM), and/or Marine Safety Information Bulletin (MSIB) and Broadcast Notice to Mariners via VHF–FM radio and the rule will allow vessels to seek permission to enter the zone during scheduled breaks.

B. Impact on Small Entities

The Regulatory Flexibility Act of 1980, 5 U.S.C. 601–612, as amended, requires Federal agencies to consider the potential impact of regulations on small entities during rulemaking. The term ''small entities'' comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000. The Coast Guard received one concurring comment from Lauren Jones on this rulemaking. The Coast Guard certifies under 5 U.S.C. 605(b) that this rule will not have a significant economic impact on a substantial number of small entities.

While some owners or operators of vessels intending to transit the safety zone may be small entities, for the reasons stated in section V.A above, this rule will not have a significant economic impact on any vessel owner or operator.

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121), we want to assist small entities in understanding this rule. If the rule would affect your small business, organization, or governmental jurisdiction and you have questions concerning its provisions or options for compliance, please call or email the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

Small businesses may send comments on the actions of Federal employees who enforce, or otherwise determine compliance with, Federal regulations to the Small Business and Agriculture Regulatory Enforcement Ombudsman and the Regional Small Business Regulatory Fairness Boards. The Ombudsman evaluates these actions annually and rates each agency's responsiveness to small business. If you wish to comment on actions by employees of the Coast Guard, call 1–888–REG–FAIR (1–888–734–3247).

The Coast Guard will not retaliate against small entities that question or complain about this rule or any policy or action of the Coast Guard.

C. Collection of Information

This rule will not call for a new collection of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520).

D. Federalism and Indian Tribal Governments

A rule has implications for federalism under Executive Order 13132, Federalism, if it has a substantial direct effect 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. We have analyzed this rule under that Order and have determined that it is consistent with the fundamental federalism principles and preemption requirements described in Executive Order 13132.

Also, this rule does not have tribal implications under Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, because it does not have a substantial direct effect on one or more Indian tribes, 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.

E. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of $100,000,000 (adjusted for inflation) or more in any one year. Though this rule will not result in such an expenditure, we do discuss the effects of this rule elsewhere in this preamble.

F. Environment

We have analyzed this rule under Department of Homeland Security Directive 023–01, Rev. 1, associated implementing instructions, and Environmental Planning COMDTINST 5090.1 (series), which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (42 U.S.C. 4321–4370f), and have determined that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human environment. This rule involves a safety zone lasting 10 hours on each of the two event days, and prohibits entry within 500 yards of the beach area of North Lake Charles. It is categorically excluded from further review under paragraph L60(a) of Appendix A, Table 1 of DHS Instruction Manual 023–01–001–01, Rev. 1. A Record of Environmental Consideration supporting this determination is available in the docket. For instructions on locating the docket, see the **ADDRESSES** section of this preamble.

G. Protest Activities

The Coast Guard respects the First Amendment rights of protesters. Protesters are asked to call or email the person listed in the **FOR FURTHER INFORMATION CONTACT** section to coordinate protest activities so that your message can be received without jeopardizing the safety or security of people, places or vessels.

List of Subjects in 33 CFR Part 165

Harbors, Marine safety, Navigation (water), Reporting and recordkeeping requirements, Security measures, Waterways.

For the reasons discussed in the preamble, the Coast Guard amends 33 CFR part 165 as follows:

PART 165—REGULATED NAVIGATION AREA AND LIMITED ACCESS AREAS

■ 1. The authority citation for part 165 continues to read as follows:

Authority: 46 U.S.C. 70034, 70051; 33 CFR 1.05–1, 6.04–1, 6.04–6, and 160.5; Department of Homeland Security Delegation No. 0170.1.

■ 2. Add § 165.T08–0379 to read as follows:

§ 165.T08–0379 Safety Zone; Lake Charles, Lake Charles, Louisiana.

(a) *Location.* The following area is a safety zone: All navigable waters of the Lake Charles west of 93°13′51.2″ W, east of 93°14′8.3″ W, and extending 500 yards south from the northern shore of Lake Charles. The duration of the safety zone is intended to protect participants, spectators, and other persons and vessels, on the navigable waters of the Lake Charles during the watercross races.

(b) *Enforcement period.* This section is effective from 8 a.m. through 6 p.m. on August 28, 2021 and August 29, 2021.

(c) *Regulations.* (1) In accordance with the general regulations in § 165.23 of this part, entry of vessels or persons into this zone is prohibited unless authorized by the Captain of the Port Marine Safety Unit Port Arthur (COTP) or a designated representative. They may be contacted on VHF–FM channel 13 or 16, or by phone at by telephone at 337–912–0073.

(2) The COTP or a designated representative may forbid and control the movement of all vessels in the regulated area. When hailed or signaled by an official patrol vessel, a vessel shall come to an immediate stop and comply with the directions given. Failure to do so may result in expulsion from the area, citation for failure to comply, or both.

(3) The COTP or a designated representative may terminate the event or the operation of any vessel at any time it is deemed necessary for the protection of life or property.

(4) The COTP or a designated representative will terminate enforcement of the special local regulations at the conclusion of the event.

(e) *Informational broadcasts.* The COTP or a designated representative will inform the public of the effective period for the safety zone as well as any changes in the dates and times of enforcement through Local Notice to Mariners (LNMs), Broadcast Notices to Mariners (BNMs), and/or Marine Safety Information Bulletins (MSIBs) as appropriate.

Dated: June 22, 2021.

James B. Suffern,

Commander, U.S. Coast Guard, Acting Captain of the Port Marine Safety Unit Port Arthur.

[FR Doc. 2021–13817 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–04–P

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Part 165

[Docket Number USCG–2021–0324]

RIN 1625–AA00

Safety Zone; Fireworks Display, Delaware Bay, Lewes, DE

AGENCY: Coast Guard, Department of Homeland Security (DHS).

ACTION: Temporary final rule.

SUMMARY: The Coast Guard is establishing a temporary safety zone for waters of Delaware Bay off Lewes, DE, for a fireworks display. The safety zone is needed to protect personnel, vessels, and the marine environment from potential hazards created by a fireworks display. Entry of vessels or persons into this zone is prohibited unless specifically authorized by the Captain of the Port (COTP) Delaware Bay.

DATES: This rule is effective from 9 p.m. through 10 p.m. on July 4, 2021.

ADDRESSES: To view documents mentioned in this preamble as being available in the docket, go to *https://www.regulations.gov,* type USCG–2021–0324 in the ''SEARCH'' box and click ''SEARCH.'' Click on Open Docket Folder on the line associated with this rule.

FOR FURTHER INFORMATION CONTACT: If you have questions on this rule, call or email Petty Officer Jennifer Padilla, Sector Delaware Bay, Waterways Management Division, U.S. Coast Guard; telephone (215) 271–4814, email *Jennifer.L.Padilla@uscg.mil*.

SUPPLEMENTARY INFORMATION:

I. Table of Abbreviations

CFR Code of Federal Regulations
DHS Department of Homeland Security
FR Federal Register
NPRM Notice of proposed rulemaking
§ Section
U.S.C. United States Code

II. Background Information and Regulatory History

The Coast Guard is issuing this temporary rule without prior notice and opportunity to comment pursuant to authority under section 4(a) of the Administrative Procedure Act (APA) (5 U.S.C. 553(b)). This provision authorizes an agency to issue a rule without prior notice and opportunity to comment when the agency for good cause finds that those procedures are ''impracticable, unnecessary, or contrary to the public interest.'' Under 5 U.S.C. 553(b)(B), the Coast Guard finds that good cause exists for not publishing a notice of proposed rulemaking (NPRM) with respect to this rule because it is impracticable and contrary to the public interest to do so. There is insufficient time to allow for a reasonable comment period prior to the event. The rule must be in force by July 4, 2021. We are taking immediate action to ensure the safety of spectators and the general public from hazards associated with the fireworks display. Hazards include accidental discharge of fireworks, dangerous projectiles, and falling hot embers or other debris.

Under 5 U.S.C. 553(d)(3), the Coast Guard finds that good cause exists for making this rule effective less than 30 days after publication in the **Federal Register**. Delaying the effective date of this rule would be impracticable and contrary to the public interest. The rule needs to be in place by July 4, 2021, to mitigate the potential safety hazards associated with a fireworks display in this location.

III. Legal Authority and Need for Rule

The Coast Guard is issuing this rule under authority in 46 U.S.C. 70034 (previously 33 U.S.C. 1231). The Captain of the Port, Delaware Bay (COTP) has determined that potential hazards associated with the fireworks to be used in this July 4, 2021, display will be a safety concern for anyone within a 350-yard radius of the barge. The purpose of this rule is to ensure safety of vessels and the navigable waters in the safety zone before, during, and after the scheduled event.

IV. Discussion of the Rule

This rule establishes a temporary safety zone on the waters of the Delaware Bay off Lewes, DE, during a fireworks display from a barge. The event is scheduled to take place between 9 p.m. and 10 p.m. on July 4, 2021. The safety zone will extend 350 yards around the barge, which will be anchored at approximate position latitude 38°47′12.07″ N longitude 075°07′48.89″ W. The duration of the zone is intended to protect personnel, vessels, and the marine environment in these navigable waters during the fireworks display. No vessel or person will be permitted to enter the safety zone without obtaining permission from the COTP or a designated representative.

V. Regulatory Analyses

We developed this rule after considering numerous statutes and Executive orders related to rulemaking. Below we summarize our analyses based on a number of these statutes and Executive orders, and we discuss First Amendment rights of protestors.

A. Regulatory Planning and Review

Executive Orders 12866 and 13563 direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits. This rule has not been designated a ''significant regulatory action'' under Executive Order 12866. Accordingly, this rule has not been reviewed by the Office of Management and Budget (OMB).

This regulatory action determination is based on (1) the safety zone will not impact a navigational channel; (2) although persons and vessels may not enter, transit through, anchor in, or remain within the safety zone without authorization from the COTP Delaware Bay or a designated representative, they may operate in the surrounding area during the enforcement period; (3) persons and vessels will still be able to enter, transit through, anchor in, or remain within the regulated area if authorized by the COTP Delaware Bay; and (4) the Coast Guard will provide advance notification of the safety zone to the local maritime community by Local Notice to Mariners and Broadcast Notice to Mariners.

B. Impact on Small Entities

The Regulatory Flexibility Act of 1980, 5 U.S.C. 601–612, as amended, requires Federal agencies to consider the potential impact of regulations on small entities during rulemaking. The term ''small entities'' comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000. The Coast Guard certifies under 5 U.S.C. 605(b) that this rule will not have a significant economic impact on a substantial number of small entities.

While some owners or operators of vessels intending to transit the safety zone may be small entities, for the reasons stated in section V.A above, this rule will not have a significant economic impact on any vessel owner or operator.

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121), we want to assist small entities in understanding this rule. If the rule would affect your small business, organization, or governmental jurisdiction and you have questions concerning its provisions or options for compliance, please call or email the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

Small businesses may send comments on the actions of Federal employees who enforce, or otherwise determine compliance with, Federal regulations to the Small Business and Agriculture Regulatory Enforcement Ombudsman and the Regional Small Business Regulatory Fairness Boards. The Ombudsman evaluates these actions annually and rates each agency's responsiveness to small business. If you wish to comment on actions by employees of the Coast Guard, call 1–888–REG–FAIR (1–888–734–3247). The Coast Guard will not retaliate against small entities that question or complain about this rule or any policy or action of the Coast Guard.

C. Collection of Information

This rule will not call for a new collection of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520).

D. Federalism and Indian Tribal Governments

A rule has implications for federalism under Executive Order 13132, Federalism, if it has a substantial direct effect 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. We have analyzed this rule under that order and have determined that it is consistent with the fundamental federalism principles and preemption requirements described in Executive Order 13132.

Also, this rule does not have tribal implications under Executive Order 13175, Consultation and Coordination with Indian Tribal Governments, because it does not have a substantial direct effect on one or more Indian tribes, 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.

E. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of $100,000,000 (adjusted for inflation) or more in any one year. Though this rule will not result in such an expenditure, we do discuss the effects of this rule elsewhere in this preamble.

F. Environment

We have analyzed this rule under Department of Homeland Security Directive 023–01, Rev. 1, associated implementing instructions, and Environmental Planning COMDTINST 5090.1 (series), which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (42 U.S.C. 4321–4370f), and have determined that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human environment. This rule involves a temporary safety zone that prohibits persons and vessels from entering, transiting through, anchoring in, or remaining within a limited area on the navigable water in the Delaware Bay, during a fireworks display lasting approximately one hour. It is categorically excluded from further review under paragraph L60(a) of Appendix A, Table 1 of DHS Instruction Manual 023–01–001–01, Rev. 1. A Record of Environmental Consideration supporting this determination is available in the docket. For instructions on locating the docket, see the **ADDRESSES** section of this preamble.

G. Protest Activities

The Coast Guard respects the First Amendment rights of protesters. Protesters are asked to call or email the person listed in the **FOR FURTHER INFORMATION CONTACT** section to coordinate protest activities so that your message can be received without jeopardizing the safety or security of people, places or vessels.

List of Subjects in 33 CFR Part 165

Harbors, Marine safety, Navigation (water), Reporting and recordkeeping requirements, Security measures, Waterways.

For the reasons discussed in the preamble, the Coast Guard amends 33 CFR part 165 as follows:

PART 165—REGULATED NAVIGATION AREAS AND LIMITED ACCESS AREAS

■ 1. The authority citation for part 165 continues to read as follows:

Authority: 46 U.S.C. 70034, 70051; 33 CFR 1.05–1, 6.04–1, 6.04–6, and 160.5; Department of Homeland Security Delegation No. 0170.1.

■ 2. Add § 165.T05–0324 to read as follows:

§ 165.T05–0324 Safety Zone; Fireworks, Delaware Bay, Lewes, DE.

(a) *Location.* The following area is a safety zone: All waters of Delaware Bay off Lewes, DE, within 350 yards of the fireworks barge anchored in approximate position latitude 38°47′12.07″ N longitude 075°07′48.89″ W.

(b) *Definitions.* As used in this section, *designated representative* means a Coast Guard Patrol Commander, including a Coast Guard petty officer, warrant or commissioned officer on board a Coast Guard vessel or on board a Federal, state, or local law enforcement vessel assisting the Captain of the Port (COTP), Delaware Bay in the enforcement of the safety zone.

(c) *Regulations.* (1) Under the general safety zone regulations in subpart C of this part, you may not enter the safety zone described in paragraph (a) of this section unless authorized by the COTP or the COTP's designated representative.

(2) To seek permission to enter or remain in the zone, contact the COTP or the COTP's representative via VHF–FM channel 16 or 215–271–4807. Those in the safety zone must comply with all lawful orders or directions given to them by the COTP or the COTP's designated representative.

(3) No vessel may take on bunkers or conduct lightering operations within the safety zone during its enforcement period.

(4) This section applies to all vessels except those engaged in law enforcement, aids to navigation servicing, and emergency response operations.

(d) *Enforcement.* The U.S. Coast Guard may be assisted in the patrol and enforcement of the safety zone by Federal, State, and local agencies.

(e) *Enforcement period.* This zone will be enforced from approximately, but no earlier than, 9 p.m. to approximately, but no later than,10 p.m. on July 4, 2021.

Dated: June 22, 2021.

Jonathan D. Theel,

Captain, U.S. Coast Guard, Captain of the Port Delaware Bay.

[FR Doc. 2021–13856 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–04–P

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Part 165

[Docket No. USCG–2021–0402]

Safety Zone; Marine Events Within the Eighth Coast Guard District

AGENCY: Coast Guard, Department of Homeland Security (DHS).

ACTION: Notice of enforcement of regulation.

SUMMARY: The Coast Guard will enforce a safety zone for the Madisonville Old Fashioned 4th of July fireworks display July 3, 2021, from 8 p.m. through 9 p.m. to provide for the safety of life on navigable waterways during this event. Our regulation for marine events within the Eighth Coast Guard District identifies the regulated area for this event on the Tchefuncte River, near Madisonville, Louisiana. During the enforcement periods, the operator of any vessel in the regulated area must comply with directions from the Patrol Commander or any Official Patrol designated by the Captain of the Port.

DATES: The regulations in 33 CFR 165.801, Table 5, line 15, will be enforced from 8 p.m. through 9 p.m. on July 3, 2021.

FOR FURTHER INFORMATION CONTACT: If you have questions about this notice of enforcement, call or email Lieutenant Commander Thao V. Nguyen, Sector

New Orleans, U.S. Coast Guard; telephone 504–365–2231, email *Thao.V.Nguyen@uscg.mil.*

SUPPLEMENTARY INFORMATION: The Coast Guard will enforce the safety zone located in 33 CFR 165.801, Table 5, line 15, for the Madisonville Old Fashioned 4th of July event. The regulations will be enforced from 8 p.m. through 9 p.m. on July 3, 2021. This action is being taken to provide for the safety of life on these navigable waterways during this event. Our regulations for marine events within the Eighth Coast Guard District, 33 CFR 168.801, as updated by the **Federal Register** document published at 83 FR 55488, specifies the location of the regulated area on the Tchefuncte River, at approximate position 30°24′19.717″ N, 090°09′17.175 W, in front of the Madisonville Town Hall. During the enforcement period, as reflected in § 165.801(a) through (d), if you are the operator of a vessel in the regulated area, you must comply with directions from Captain of the Port Sector New Orleans or a designated representative.

In addition to this notice of enforcement in the **Federal Register**, the Coast Guard plans to provide notification of this enforcement period via a Marine Safety Information Bulletin and/or Broadcast Notice to Mariners.

Dated: June 24, 2021.

W.E. Watson,

Captain, U.S. Coast Guard, Captain of the Port Sector New Orleans.

[FR Doc. 2021–13880 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–04–P

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Part 165

[Docket No. USCG–2021–0494]

Security Zones, Seattle's Seafair Fleet Week Moving Vessels, Puget Sound, WA

AGENCY: Coast Guard, Department of Homeland Security (DHS).

ACTION: Notification of non-enforcement of regulation.

SUMMARY: The Coast Guard will not enforce the security zones for Seattle's Seafair Fleet Week moving vessels, Puget Sound, WA in July or August 2021. The Captain of the Port Sector Puget Sound has determined that enforcement of this regulation is not necessary because the event is cancelled.

DATES: The Coast Guard does not plan to enforce regulations in 33 CFR 165.1333 in July or August 2021.

FOR FURTHER INFORMATION CONTACT: If you have questions about this notification of non-enforcement, call or email Lieutenant Peter McAndrew, Sector Puget Sound Waterways Management Division, U.S. Coast Guard; telephone 206–217–6051, email *SectorPugetSoundWWM@uscg.mil.*

SUPPLEMENTARY INFORMATION: The Coast Guard normally enforces the Security Zones in 33 CFR 165.1333 for the Seattle Seafair Fleet Week moving vessels and parade of ships. This event is typically held annually during the parade of ships between July 25 and August 14. This year, the event organizers cancelled Seafair and Fleet Week. Therefore, the Coast Guard does not plan to enforce the security zones in 33 CFR 165.1333 in July or August 2021.

In addition to this notification of non-enforcement in the **Federal Register**, if the situation changes and the Captain of the Port Sector Puget Sound (COTP) determines that the regulated area needs to be enforced, the COTP will issue a Broadcast Notice to Mariners and provide actual notice of enforcement to any persons in the regulated area.

Dated: June 21, 2021.

P.M. Hilbert,

Captain, U.S. Coast Guard, Captain of the Port Sector Puget Sound.

[FR Doc. 2021–13834 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–04–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA–R06–OAR–2021–0177; FRL–10024–83–Region 6]

Air Plan Approval; Texas; Clean Air Act Requirements for Emissions Inventories for Nonattainment Areas for the 2015 Ozone National Ambient Air Quality Standards

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is approving the portions of the State Implementation Plan (SIP) submitted by the State of Texas to meet the Emissions Inventory (EI) requirements of the Federal Clean Air Act (CAA or the Act), for the Dallas-Fort Worth (DFW), Houston-Galveston-Brazoria (HGB), and Bexar County ozone nonattainment areas for the 2015 8-hour ozone national ambient air quality standards (NAAQS). EPA is approving this action pursuant to section 110 and part D of the CAA and EPA's regulations.

DATES: This final rule is effective on July 29, 2021.

ADDRESSES: The EPA has established a docket for this action Docket No. EPA–R06–OAR–2021–0177. All documents in the docket are listed on the *https://www.regulations.gov.* Although listed in the index, some information is not publicly available, *e.g.,* Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through *https://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: Nevine Salem, EPA Region 6 Office, Infrastructure and Ozone Section, 214–665–7222, *salem.nevine@epa.gov.* Out of an abundance of caution for members of the public and our staff, the EPA Region 6 office will be closed to the public to reduce the risk of transmitting COVID–19. Please call or email the contact listed above if you need alternative access to material indexed but not provided in the docket.

SUPPLEMENTARY INFORMATION: Throughout this document wherever ''we,'' ''us,'' or ''our'' is used, we mean the EPA.

I. Background

On March 26, 2021 (86 FR 16171), the EPA published a Notice of Proposed Rulemaking (NPRM) for the State of Texas, for approval of the State's 2017 base year emissions inventories for the DFW, HGB, and the Bexar County marginal ozone nonattainment areas for the 2015 ozone NAAQS. The background for this action and rational for EPA's proposed action are explained in the NPRM and will not be restated here.

II. Response to Comments

We received one anonymous comment that did not raise any substantive issues with the proposed rule. The comment did not explain (or provide any legal basis for) how the proposed action should differ in any way. We determined that the comment is not germane to the final rulemaking and therefore requires no further response. We also noted a typographical error in the NPRM—the numbers in Tables 1, 2 and 3 that summarize the 2017 NO_X and VOC emissions inventory

in DFW, HGB and Bexar County marginal nonattainment areas, were transposed for the On-road Mobile and Non-road Mobile sources. This correction does not change or affect the total NO_X or VOC emissions in the 2017 emission inventory for these marginal nonattainment areas for typical ozone season day emissions. In the interest of good government, we are including the corrected Tables 1, 2 and 3 below. We also note that the original and correct tables were included in the State's SIP revision submittal and are included in the docket for this rule making.[1]

TABLE 1—DFW 2017 EMISSIONS INVENTORY

[Tons per day]

Source type	NO_X	VOC
Point	29.90	21.04
Nonpoint (Area)	41.82	293.62
Non-road Mobile	74.79	31.74
On-road Mobile	125.13	60.56
Total	271.64	406.96

TABLE 2—HGB 2017 EMISSIONS INVENTORY

[Tons per day]

Source type	NO_X	VOC
Point	97.31	73.34
Nonpoint (Area)	32.12	287.74
Non-road Mobile	86.34	32.29
On-road Mobile	101.49	58.65
Total	317.26	452.02

TABLE 3—BEXAR COUNTY 2017 EMISSIONS INVENTORY

[Tons per day]

Source type	NO_X	VOC
Point	29.88	3.56
Nonpoint (Area)	6.62	74.61
Non-road Mobile	11.42	7.09
On-road Mobile	35.70	20.84
Total	83.62	106.10

[1] A copy of the SIP revision is available online at *www.regulations.gov,* Docket number EPA–R06–OAR–2021–0177.

III. Final Action

EPA is approving the portion of the Texas SIP revisions submitted on June 24, 2020 to address the emissions inventory requirements for the DFW, HGB, and Bexar County nonattainment areas for the 2015 ozone NAAQS.

IV. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, the EPA's role is to approve state choices, provided that they meet the criteria of the CAA. Accordingly, this action merely proposes to approve state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this action:

- Is not a ''significant regulatory action'' subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4);
- Does not have federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- 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 CAA; 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, the SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the proposed rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Nitrogen dioxide, Ozone, Reporting and record keeping requirements, Volatile organic compounds.

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

Dated: June 22, 2021.

David Gray,

Acting Regional Administrator, Region 6.

For the reasons stated in the preamble, the EPA amends 40 CFR part 52 as follows:

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

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

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

Subpart SS—Texas

■ 2. In § 52.2270, the second table in paragraph (e), titled ''EPA Approved Nonregulatory Provisions and Quasi-Regulatory Measures in the Texas SIP,'' is amended by adding an entry for ''2017 Emissions Inventory for the 2015 Ozone NAAQS'' at the end of the table to read as follows:

§ 52.2270 Identification of plan.

* * * * *

(e) * * *

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

Name of SIP provision	Applicable geographic or nonattainment area	State submittal/ effective date	EPA approval date	Comments
* *	* *	*	*	*
2017 Emissions Inventory for the 2015 Ozone NAAQS.	Dallas-Fort Worth, Houston Galveston-Brazoria, and Bexar County Ozone Non-attainment Areas.	June 24, 2020	June 29, 2021 [Insert **Federal Register** citation].	

* * * * *

[FR Doc. 2021–13771 Filed 6–28–21; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 81

[EPA–HQ–OAR–2014–0464; FRL–10024–27–OAR]

Air Quality Designations for the 2010 1-Hour SO_2 NAAQS: Responses to Petitions for Reconsideration and Administrative Stay of the Designations for Portions of Freestone and Anderson Counties, Rusk and Panola Counties, and Titus County in Texas

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notification of actions denying petitions for reconsideration and administrative stay.

SUMMARY: The Environmental Protection Agency (EPA) is providing notice that it has responded to petitions for reconsideration and/or administrative stay of a final action under the Clean Air Act (CAA) published in the **Federal Register** on December 13, 2016, titled, ''Air Quality Designations for the 2010 Sulfur Dioxide (SO_2) Primary National Ambient Air Quality Standard—Supplement to Round 2 for Four Areas in Texas: Freestone and Anderson Counties, Milam County, Rusk and Panola Counties, and Titus County.'' The EPA has denied these petitions in letters to the petitioners for the reasons that the EPA explains in those documents.

DATES: The Administrator signed the associated notification letters on June 10, 2021.

FOR FURTHER INFORMATION CONTACT: Corey Mocka, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Policy Division, 109 T.W. Alexander Drive, Mail Code C539–04, Research Triangle Park, NC 27711; phone number: (919) 541–5142; email address: *mocka.corey@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. Background

The EPA is providing notice that it has responded to petitions for reconsideration and/or administrative stay of a final action under the CAA published in the **Federal Register** on December 13, 2016, titled, ''Air Quality Designations for the 2010 Sulfur Dioxide (SO_2) Primary National Ambient Air Quality Standard—Supplement to Round 2 for Four Areas in Texas: Freestone and Anderson Counties, Milam County, Rusk and Panola Counties, and Titus County'' (81 FR 89870). On February 13, 2017, Vistra Energy submitted a petition requesting that the EPA reconsider and stay the effective date of the EPA's nonattainment designations for portions of Freestone and Anderson Counties, Rusk and Panola Counties, and Titus County. Vistra Energy later supplemented this petition on December 19, 2017. On March 15, 2017, the Texas Commission on Environmental Quality (TCEQ) submitted a request for administrative stay of the effective date for the EPA's final designations for these areas in Texas. The TCEQ also submitted a petition for reconsideration of the nonattainment designations on December 11, 2017. The EPA has denied these petitions in letters to the petitioners for the reasons that the EPA explains in those documents.

II. Where can I get copies of this document and other related information?

This **Federal Register** document, the petitions for reconsideration and administrative stay, and the response letters to the petitioners are available in the docket that the EPA established for the rulemaking, under Docket ID NO. EPA–HQ–OAR–2014–0464.

All documents in the docket are listed in the index at *http://www.regulations.gov.* Although listed in the index, some information may not be publicly available, *i.e.,* Confidential Business Information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form.

Out of an abundance of caution for members of the public and our staff, the EPA is temporarily suspending the Docket Center and Reading Room for public visitors to reduce the risk of transmitting COVID–19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. For further information and updates on EPA Docket Center services, please visit us online at *https://www.epa.gov/dockets.* The EPA continues to carefully and continuously monitor information from the Centers for Disease Control and Prevention, local area health departments, and our federal partners so we can respond rapidly as conditions change regarding COVID–19.

In addition, the EPA has established a website for SO_2 designations rulemakings at: *https://www.epa.gov/sulfur-dioxide-designations.* This **Federal Register** notice, the petitions for reconsideration and administrative stay, and the response letters denying the petitions are also available on this website along with other information.

III. Judicial Review

Section 307(b)(1) of the CAA governs judicial review of final actions by the EPA. This section provides, in part, that petitions for review must be filed in the Court of Appeals for the District of Columbia Circuit: (i) When the agency action consists of ''nationally applicable regulations promulgated, or final actions taken, by the Administrator,'' or (ii) when such action is locally or regionally applicable, if ''such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination.'' For locally or regionally applicable final actions, the CAA reserves to the EPA complete discretion whether to invoke the exception in (ii).

Judicial challenges to the EPA's denials of petitions for reconsideration of CAA actions belong in the same venue as any challenge to the action that such petitions request the agency to reconsider.[1]

The D.C. Circuit is the only appropriate venue for both challenges to the final action titled, ''Air Quality Designations for the 2010 Sulfur Dioxide (SO_2) Primary National Ambient Air Quality Standard—Supplement to Round 2 for Four Areas in Texas: Freestone and Anderson Counties, Milam County, Rusk and Panola Counties, and Titus County,'' 81 FR 89870 (December 13, 2016) (''Round 2 Supplement'') and challenges to these actions denying administrative petitions on the Round 2 Supplement. The EPA made a finding in the Round 2 Supplement, that the Round 2 Supplement is based on a determination of ''nationwide scope or effect'' within the meaning of CAA section 307(b)(1). *See* 81 FR at 89874–75. That action is currently being challenged in the Court of Appeals for the Fifth Circuit; however, the EPA maintains that the proper venue for that action is the D.C. Circuit.[2] Thus, judicial challenges to the actions noticed here, denying administrative petitions for reconsideration and/or stay of the Round 2 Supplement, also belong in the D.C. Circuit.

To the extent a court finds these actions denying the administrative petitions on the Round 2 Supplement to be locally or regionally applicable, the Administrator is exercising the complete discretion afforded to him under the CAA to make and publish a finding that each of these actions are based on a determination of ''nationwide scope or effect'' within the meaning of CAA section 307(b)(1).[3] Both the Round 2 Supplement and these final actions noticed here are finalized pursuant to a common, uniform nationwide analytical method and interpretation of CAA section 107(d). In denying the petitions for reconsideration and administrative stay of the Round 2 Supplement, these final actions apply the same common, uniform nationwide analytical method and interpretation of CAA section 107(d) that the EPA applied across the country in designations for the SO_2 Primary National Ambient Air Quality Standard (NAAQS), including the EPA's nationwide approach to and technical evaluation of air quality modeling and monitoring data within the EPA's interpretation of statutory terms under section 107(d)(1) of the CAA.[4] These final actions are based on this same common core of determinations regarding the nationwide analytical method and interpretation of CAA section 107(d), determinations that specific methodologies are appropriate or preferable for assessing sulfur dioxide levels nationwide.[5] More specifically, these final actions are based on a determination by the EPA to evaluate areas nationwide using a common five-factor analysis in determining whether areas are in violation of or contributing to an area in violation of the 2010 SO_2 NAAQS at the time of the designations final action. The actions denying the petitions for reconsideration explained, for example, that the EPA's designations and the denials for reconsideration are based on the EPA's determination to consider and assess the technical representativeness of all available information regarding then-current air quality at the time of designations *(e.g.,* to consider third party modeling submitted to the EPA of the then-most recent years of air quality and then-currently available monitoring information, and not to consider projections or intended monitoring of future years' emissions, for SO_2 designations under the CAA). For these reasons, the Administrator is exercising the complete discretion afforded to him by the CAA and hereby finds that each of these final actions is based on a determination of nationwide scope or effect for purposes of CAA section 307(b)(1) and is hereby publishing those findings in the **Federal Register**.

Under CAA section 307(b), any petition for review of these actions denying the petitions for reconsideration and/or stay must be filed in the Court of Appeals for the District of Columbia Circuit within 60 days from the date this notice is published in the **Federal Register**. Filing a petition for reconsideration by the Administrator of these final actions does not affect the finality of the actions for the purposes of judicial review, nor does it extend the time within which a petition for judicial review must be filed, and shall not postpone the effectiveness of such actions.

Michael S. Regan,

Administrator.

[FR Doc. 2021–13938 Filed 6–28–21; 8:45 am]

BILLING CODE 6560–50–P

[1] *Cf. Natural Res. Def. Council, Inc.* v. *Thomas,* 838 F.2d 1224, 1249 (D.C. Cir. 1988) (the clause in CAA section 307(b) governing ''nationally applicable regulations'' provides jurisdiction over both the direct challenge to the regulations and the petition for reconsideration).

[2] The EPA intends to maintain this position in merits briefing in the 5th Circuit, as the 5th Circuit's venue decision denied the EPA's motion to dismiss or transfer the case to the D.C. Circuit without prejudice to reconsideration of the issue by the merits panel. Texas v. EPA, 706 Fed. Appx. 159, 161, 165 (5th Cir. 2017) (''EPA's motion therefore is denied without prejudice to reconsideration by the merits panel . . . merits briefing will provide greater clarity on what determinations lie at the [Round 2] Supplement's core, by, for example, illuminating that the key determinations in the rule are determinations that specific methodologies are appropriate or preferable for assessing sulfur dioxide levels nationwide, as opposed to fact-specific assessments of sulfur dioxide levels in the four Texas regions. In that case, the merits panel should not be constrained from revisiting the issue.'').

[3] In deciding whether to invoke the exception by making and publishing a finding that this final action is based on a determination of nationwide scope or effect, the Administrator has also taken into account a number of policy considerations, including his judgment balancing the benefit of obtaining the D.C. Circuit's authoritative centralized review versus allowing development of the issue in other contexts and the best use of agency resources.

[4] In the report on the 1977 Amendments that revised section 307(b)(1) of the CAA, Congress noted that the Administrator's determination that the ''nationwide scope or effect'' exception applies would be appropriate for any action that has a scope or effect beyond a single judicial circuit. See H.R. Rep. No. 95–294 at 323, 324, reprinted in 1977 U.S.C.C.A.N. 1402–03.

[5] *See, supra,* n.2.

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 180

[EPA–HQ–OPP–2019–0474; FRL–10025–18]

Bacillus subtilis Strain RTI477; Exemption From the Requirement of a Tolerance

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes an exemption from the requirement of a tolerance for residues of *Bacillus subtilis* strain RTI477 in or on all food commodities when used in accordance with label directions and good agricultural practices. FMC Corporation submitted a petition to EPA under the Federal Food, Drug, and Cosmetic Act (FFDCA), requesting an exemption from the requirement of a tolerance. This regulation eliminates the need to establish a maximum permissible level for residues of *Bacillus subtilis* strain RTI477 under FFDCA when used in accordance with this exemption.

DATES: This regulation is effective June 29, 2021. Objections and requests for hearings must be received on or before August 30, 2021 and must be filed in accordance with the instructions provided in 40 CFR part 178 (see also Unit I.C. of the **SUPPLEMENTARY INFORMATION**).

ADDRESSES: The docket for this action, identified by docket identification (ID) number EPA–HQ–OPP–2019–0474, is available at *http://www.regulations.gov* or at the Office of Pesticide Programs Regulatory Public Docket (OPP Docket) in the Environmental Protection Agency Docket Center (EPA/DC), West William Jefferson Clinton Bldg., Rm. 3334, 1301 Constitution Ave. NW, Washington, DC 20460–0001. 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 OPP Docket is (703) 305–5805.

Due to the public health concerns related to COVID–19, the EPA Docket Center (EPA/DC) and Reading Room is closed to visitors with limited exceptions. The staff continues to provide remote customer service via email, phone, and webform. For the latest status information on EPA/DC services and docket access, visit *https://www.epa.gov/dockets.*

FOR FURTHER INFORMATION CONTACT: Charles Smith, Biopesticides and Pollution Prevention Division (7511P), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460–0001; main telephone number: (703) 305–7090; email address: *BPPDFRNotices@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

You may be potentially affected by this action if you are an agricultural producer, food manufacturer, or pesticide manufacturer. The following list of North American Industrial Classification System (NAICS) codes is not intended to be exhaustive, but rather provides a guide to help readers determine whether this document applies to them. Potentially affected entities may include:

- Crop production (NAICS code 111).
- Animal production (NAICS code 112).
- Food manufacturing (NAICS code 311).
- Pesticide manufacturing (NAICS code 32532).

B. How can I get electronic access to other related information?

You may access a frequently updated electronic version of 40 CFR part 180 through the Government Publishing Office's e-CFR site at *http://www.ecfr.gov/cgi-bin/text-idx?&c=ecfr&tpl=/ecfrbrowse/Title40/40tab_02.tpl.*

C. How can I file an objection or hearing request?

Under FFDCA section 408(g), 21 U.S.C. 346a(g), any person may file an objection to any aspect of this regulation and may also request a hearing on those objections. You must file your objection or request a hearing on this regulation in accordance with the instructions provided in 40 CFR part 178. To ensure proper receipt by EPA, you must identify docket ID number EPA–HQ–OPP–2019–0474 in the subject line on the first page of your submission. All objections and requests for a hearing must be in writing and must be received by the Hearing Clerk on or before August 30, 2021. Addresses for mail and hand delivery of objections and hearing requests are provided in 40 CFR 178.25(b), although EPA strongly encourages those interested in submitting objections or a hearing request, to submit objections and hearing requests electronically. *See* Order Urging Electronic Service and Filing (April 10, 2020), *https://www.epa.gov/sites/production/files/2020-05/documents/2020-04-10_-_order_urging_electronic_service_and_filing.pdf.* At this time, because of the COVID–19 pandemic, the judges and staff of the Office of Administrative Law Judges are working remotely and not able to accept filings or correspondence by courier, personal delivery, or commercial delivery, and the ability to receive filings or correspondence by U.S. Mail is similarly limited. When submitting documents to the U.S. EPA Office of Administrative Law Judges (OALJ), a person should utilize the OALJ e-filing system, at *https://yosemite.epa.gov/OA/EAB/EAB-ALJ_upload.nsf.*

Although EPA's regulations require submission via U.S. Mail or hand delivery, EPA intends to treat submissions filed via electronic means as properly filed submissions during this time that the Agency continues to maximize telework due to the pandemic; therefore, EPA believes the preference for submission via electronic means will not be prejudicial. If it is impossible for a person to submit documents electronically or receive service electronically, *e.g.,* the person does not have any access to a computer, the person shall so advise OALJ by contacting the Hearing Clerk at (202) 564–6281. If a person is without access to a computer and must file documents by U.S. Mail, the person shall notify the Hearing Clerk every time it files a document in such a manner. The address for mailing documents is U.S. Environmental Protection Agency, Office of Administrative Law Judges, Mail Code 1900R, 1200 Pennsylvania Ave. NW, Washington, DC 20460.

In addition to filing an objection or hearing request with the Hearing Clerk as described in 40 CFR part 178, please submit a copy of the filing (excluding any Confidential Business Information (CBI)) for inclusion in the public docket. Information not marked confidential pursuant to 40 CFR part 2 may be disclosed publicly by EPA without prior notice. Submit the non-CBI copy of your objection or hearing request, identified by docket ID number EPA–HQ–OPP–2019–0474, by one of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be CBI or other information whose disclosure is restricted by statute.
- *Mail:* OPP Docket, Environmental Protection Agency Docket Center (EPA/DC), (28221T), 1200 Pennsylvania Ave. NW, Washington, DC 20460–0001.
- *Hand Delivery:* To make special arrangements for hand delivery or delivery of boxed information, please follow the instructions at *http://www.epa.gov/dockets/contacts.html.*

Additional instructions on commenting or visiting the docket, along with more information about dockets generally, is available at *http://www.epa.gov/dockets.*

II. Background

In the **Federal Register** of February 4, 2020 (85 FR 6129) (FRL–10003–17), EPA issued a notice pursuant to FFDCA section 408(d)(3), 21 U.S.C. 346a(d)(3), announcing the filing of a pesticide tolerance exemption petition (PP 9F8749) by FMC Corporation, 2929 Walnut St., Philadelphia, PA 19104. The petition requested that 40 CFR part 180 be amended by establishing an exemption from the requirement of a tolerance for residues of the fungicide *Bacillus subtilis* strain RTI477 in or on all food commodities. That notice referenced a summary of the petition prepared by the petitioner FMC Corporation and available in the docket via *http://www.regulations.gov.* No comments were received on the notice of filing.

III. Final Rule

A. EPA's Safety Determination

Section 408(c)(2)(A)(i) of FFDCA allows EPA to establish an exemption from the requirement of a tolerance (the legal limit for a pesticide chemical residue in or on a food) only if EPA

determines that the exemption is ''safe.'' Section 408(c)(2)(A)(ii) of FFDCA defines ''safe'' to mean that ''there is a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue, including all anticipated dietary exposures and all other exposures for which there is reliable information.'' This includes exposure through drinking water and in residential settings but does not include occupational exposure. Pursuant to FFDCA section 408(c)(2)(B), in establishing or maintaining in effect an exemption from the requirement of a tolerance, EPA must take into account the factors set forth in FFDCA section 408(b)(2)(C), which require EPA to give special consideration to exposure of infants and children to the pesticide chemical residue in establishing a tolerance or tolerance exemption and to ''ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to the pesticide chemical residue. . . .'' Additionally, FFDCA section 408(b)(2)(D) requires that EPA consider ''available information concerning the cumulative effects of [a particular pesticide's] . . . residues and other substances that have a common mechanism of toxicity.''

EPA evaluated the available toxicological and exposure data on *Bacillus subtilis* strain RTI477 and considered their validity, completeness, and reliability, as well as the relationship of this information to human risk. A full explanation of the data upon which EPA relied and its risk assessment based on those data can be found within the document entitled ''Human Health Risk Assessment for the New Active Ingredients *Bacillus subtilis* strain RTI477 and *Bacillus velezensis* strain RTI301 in the Proposed Manufacturing-use Products 279–OAUT, 279–OAUI and End-use Products 279–OAUO, 279–OALN and 279–OALR for FIFRA Section 3 Registration with Tolerance Exemption Petitions'' (*Bacillus subtilis* strain RTI477 and *Bacillus velezensis* strain RTI301 Human Health Assessment). This document, as well as other relevant information, is available in docket for this action as described under **ADDRESSES**.

The available data demonstrated that, with regard to humans, *Bacillus subtilis* strain RTI477 is not toxic via the pulmonary, oral, or dermal routes of exposure and is not pathogenic or infective via the pulmonary route of exposure. Although there may be some dietary and non-occupational exposures to residues of *Bacillus subtilis* strain RTI477 when used in accordance with label directions and good agricultural practices, there is not a concern due to the lack of potential for adverse effects. Because there are no threshold levels of concern with the toxicity, pathogenicity, or infectivity of *Bacillus subtilis* strain RTI477, EPA determined that no additional margin of safety is necessary to protect infants and children as part of the qualitative assessment conducted. Based upon its evaluation in the *Bacillus subtilis* strain RTI477 and *Bacillus velezensis* strain RTI301 Human Health Assessment, which concludes that there are no risks of concern from aggregate exposure to *Bacillus subtilis* strain RTI477, EPA concludes that there is a reasonable certainty that no harm will result to the U.S. population, including infants and children, from aggregate exposure to residues of *Bacillus subtilis* strain RTI477.

B. Analytical Enforcement Methodology

An analytical method is not required for *Bacillus subtilis* strain RTI477 because EPA is establishing an exemption from the requirement of a tolerance without any numerical limitation.

C. Conclusion

Therefore, an exemption from the requirement of a tolerance is established for residues of *Bacillus subtilis* strain RTI477 in or on all food commodities when used in accordance with label directions and good agricultural practices.

IV. Statutory and Executive Order Reviews

This action establishes a tolerance exemption under FFDCA section 408(d) in response to a petition submitted to EPA. The Office of Management and Budget (OMB) has exempted these types of actions from review under Executive Order 12866, entitled ''Regulatory Planning and Review'' (58 FR 51735, October 4, 1993). Because this action has been exempted from review under Executive Order 12866, this action is not subject to Executive Order 13211, entitled ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355, May 22, 2001), or Executive Order 13045, entitled ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997). This action does not contain any information collections subject to OMB approval under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.,* nor does it require any special considerations under Executive Order 12898, entitled ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations'' (59 FR 7629, February 16, 1994).

Since tolerances and exemptions that are established on the basis of a petition under FFDCA section 408(d), such as the tolerance exemption in this action, do not require the issuance of a proposed rule, the requirements of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) do not apply.

This action directly regulates growers, food processors, food handlers, and food retailers, not States or Tribes. As a result, this action does not alter the relationships or distribution of power and responsibilities established by Congress in the preemption provisions of FFDCA section 408(n)(4). As such, EPA has determined that this action will not have a substantial direct effect on States or Tribal Governments, on the relationship between the National Government and the States or Tribal Governments, or on the distribution of power and responsibilities among the various levels of government or between the Federal Government and Indian Tribes. Thus, EPA has determined that Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), and Executive Order 13175, entitled ''Consultation and Coordination with Indian Tribal Governments'' (65 FR 67249, November 9, 2000), do not apply to this action. In addition, this action does not impose any enforceable duty or contain any unfunded mandate as described under Title II of the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*).

This action does not involve any technical standards that would require EPA's consideration of voluntary consensus standards pursuant to section 12(d) of the National Technology Transfer and Advancement Act (15 U.S.C. 272 note).

V. Congressional Review Act

Pursuant to the Congressional Review Act (5 U.S.C. 801 *et seq.*), EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 180

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: June 21, 2021.

Edward Messina,

Acting Director, Office of Pesticide Programs.

Therefore, for the reasons stated in the preamble, EPA is amending 40 CFR chapter I as follows:

PART 180—TOLERANCES AND EXEMPTIONS FOR PESTICIDE CHEMICAL RESIDUES IN FOOD

■ 1. The authority citation for part 180 continues to read as follows:

Authority: 21 U.S.C. 321(q), 346a and 371.

■ 2. Add § 180.1384 to subpart D to read as follows:

§ 180.1384 *Bacillus subtilis* strain RTI477; exemption from the requirement of a tolerance.

An exemption from the requirement of a tolerance is established for residues of *Bacillus subtilis* strain RTI477 in or on all food commodities when used in accordance with label directions and good agricultural practices.

[FR Doc. 2021–13804 Filed 6–28–21; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 180

[EPA–HQ–OPP–2019–0475; FRL–10025–21]

Bacillus velezensis Strain RTI301; Exemption From the Requirement of a Tolerance

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes an exemption from the requirement of a tolerance for residues of *Bacillus velezensis* strain RTI301 in or on all food commodities when used in accordance with label directions and good agricultural practices. FMC Corporation submitted a petition to EPA under the Federal Food, Drug, and Cosmetic Act (FFDCA), requesting an exemption from the requirement of a tolerance. This regulation eliminates the need to establish a maximum permissible level for residues of *Bacillus velezensis* strain RTI301 under FFDCA when used in accordance with this exemption.

DATES: This regulation is effective June 29, 2021. Objections and requests for hearings must be received on or before August 30, 2021 and must be filed in accordance with the instructions provided in 40 CFR part 178 (see also Unit I.C. of the **SUPPLEMENTARY INFORMATION**).

ADDRESSES: The docket for this action, identified by docket identification (ID) number EPA–HQ–OPP–2019–0475, is available at *http://www.regulations.gov* or at the Office of Pesticide Programs Regulatory Public Docket (OPP Docket) in the Environmental Protection Agency Docket Center (EPA/DC), West William Jefferson Clinton Bldg., Rm. 3334, 1301 Constitution Ave. NW, Washington, DC 20460–0001. 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 OPP Docket is (703) 305–5805.

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FOR FURTHER INFORMATION CONTACT: Charles Smith, Biopesticides and Pollution Prevention Division (7511P), Office of Pesticide Programs, Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460–0001; main telephone number: (703) 305–7090; email address: *BPPDFRNotices@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

You may be potentially affected by this action if you are an agricultural producer, food manufacturer, or pesticide manufacturer. The following list of North American Industrial Classification System (NAICS) codes is not intended to be exhaustive, but rather provides a guide to help readers determine whether this document applies to them. Potentially affected entities may include:

- Crop production (NAICS code 111).
- Animal production (NAICS code 112).
- Food manufacturing (NAICS code 311).
- Pesticide manufacturing (NAICS code 32532).

B. How can I get electronic access to other related information?

You may access a frequently updated electronic version of 40 CFR part 180 through the Government Publishing Office's e-CFR site at *http://www.ecfr.gov/cgi-bin/text-idx?&c=ecfr&tpl=/ecfrbrowse/Title40/40tab_02.tpl.*

C. How can I file an objection or hearing request?

Under FFDCA section 408(g), 21 U.S.C. 346a(g), any person may file an objection to any aspect of this regulation and may also request a hearing on those objections. You must file your objection or request a hearing on this regulation in accordance with the instructions provided in 40 CFR part 178. To ensure proper receipt by EPA, you must identify docket ID number EPA–HQ–OPP–2019–0475 in the subject line on the first page of your submission. All objections and requests for a hearing must be in writing and must be received by the Hearing Clerk on or before August 30, 2021. Addresses for mail and hand delivery of objections and hearing requests are provided in 40 CFR 178.25(b), although EPA strongly encourages those interested in submitting objections or a hearing request, to submit objections and hearing requests electronically. *See* Order Urging Electronic Service and Filing (April 10, 2020), *https://www.epa.gov/sites/production/files/2020-05/documents/2020-04-10_-_order_urging_electronic_service_and_filing.pdf.* At this time, because of the COVID–19 pandemic, the judges and staff of the Office of Administrative Law Judges are working remotely and not able to accept filings or correspondence by courier, personal delivery, or commercial delivery, and the ability to receive filings or correspondence by U.S. Mail is similarly limited. When submitting documents to the U.S. EPA Office of Administrative Law Judges (OALJ), a person should utilize the OALJ e-filing system, at *https://yosemite.epa.gov/OA/EAB/EAB-ALJ_upload.nsf.*

Although EPA's regulations require submission via U.S. Mail or hand delivery, EPA intends to treat submissions filed via electronic means as properly filed submissions during this time that the Agency continues to maximize telework due to the pandemic; therefore, EPA believes the preference for submission via electronic means will not be prejudicial. If it is impossible for a person to submit documents electronically or receive service electronically, *e.g.,* the person does not have any access to a computer, the person shall so advise OALJ by contacting the Hearing Clerk at (202) 564–6281. If a person is without access to a computer and must file documents by U.S. Mail, the person shall notify the Hearing Clerk every time it files a document in such a manner. The

address for mailing documents is U.S. Environmental Protection Agency, Office of Administrative Law Judges, Mail Code 1900R, 1200 Pennsylvania Ave. NW, Washington, DC 20460.

In addition to filing an objection or hearing request with the Hearing Clerk as described in 40 CFR part 178, please submit a copy of the filing (excluding any Confidential Business Information (CBI)) for inclusion in the public docket. Information not marked confidential pursuant to 40 CFR part 2 may be disclosed publicly by EPA without prior notice. Submit the non-CBI copy of your objection or hearing request, identified by docket ID number EPA–HQ–OPP–2019–0475, by one of the following methods:

- *Federal eRulemaking Portal: http://www.regulations.gov.* Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be CBI or other information whose disclosure is restricted by statute.
- *Mail:* OPP Docket, Environmental Protection Agency Docket Center (EPA/DC), (28221T), 1200 Pennsylvania Ave. NW, Washington, DC 20460–0001.
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Additional instructions on commenting or visiting the docket, along with more information about dockets generally, is available at *http://www.epa.gov/dockets.*

II. Background

In the **Federal Register** of February 4, 2020 (85 FR 6129) (FRL–10003–17), EPA issued a notice pursuant to FFDCA section 408(d)(3), 21 U.S.C. 346a(d)(3), announcing the filing of a pesticide tolerance exemption petition (PP 9F8750) by FMC Corporation, 2929 Walnut St., Philadelphia, PA 19104. The petition requested that 40 CFR part 180 be amended by establishing an exemption from the requirement of a tolerance for residues of the fungicide *Bacillus velezensis* strain RTI301 in or on all food commodities. That notice referenced a summary of the petition prepared by the petitioner FMC Corporation and available in the docket via *http://www.regulations.gov.* Although one comment was submitted to the docket for this notice of filing, it was unrelated to this tolerance exemption rulemaking.

III. Final Rule

A. EPA's Safety Determination

Section 408(c)(2)(A)(i) of FFDCA allows EPA to establish an exemption from the requirement of a tolerance (the legal limit for a pesticide chemical residue in or on a food) only if EPA determines that the exemption is ''safe.'' Section 408(c)(2)(A)(ii) of FFDCA defines ''safe'' to mean that ''there is a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue, including all anticipated dietary exposures and all other exposures for which there is reliable information.'' This includes exposure through drinking water and in residential settings but does not include occupational exposure. Pursuant to FFDCA section 408(c)(2)(B), in establishing or maintaining in effect an exemption from the requirement of a tolerance, EPA must take into account the factors set forth in FFDCA section 408(b)(2)(C), which require EPA to give special consideration to exposure of infants and children to the pesticide chemical residue in establishing a tolerance or tolerance exemption and to ''ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to the pesticide chemical residue . . . .'' Additionally, FFDCA section 408(b)(2)(D) requires that EPA consider ''available information concerning the cumulative effects of [a particular pesticide's] . . . residues and other substances that have a common mechanism of toxicity.''

EPA evaluated the available toxicological and exposure data on *Bacillus velezensis* strain RTI301 and considered their validity, completeness, and reliability, as well as the relationship of this information to human risk. A full explanation of the data upon which EPA relied and its risk assessment based on those data can be found within the document entitled ''Human Health Risk Assessment for the New Active Ingredients *Bacillus subtilis* strain RTI477 and *Bacillus velezensis* strain RTI301 in the Proposed Manufacturing-use Products 279–OAUT, 279–OAUI and End-use Products 279–OAUO, 279–OALN and 279–OALR for FIFRA Section 3 Registration with Tolerance Exemption Petitions'' (*Bacillus subtilis* strain RTI477 and *Bacillus velezensis* strain RTI301 Human Health Assessment). This document, as well as other relevant information, is available in docket for this action as described under **ADDRESSES**.

The available data demonstrated that, with regard to humans, *Bacillus velezensis* strain RTI301 is not toxic via the pulmonary, oral, or dermal routes of exposure and is not pathogenic or infective via the pulmonary or oral routes of exposure. Although there may be some dietary and non-occupational exposures to residues of *Bacillus velezensis* strain RTI301 when used in accordance with label directions and good agricultural practices, there is not a concern due to the lack of potential for adverse effects. Because there are no threshold levels of concern with the toxicity, pathogenicity, or infectivity of *Bacillus velezensis* strain RTI301, EPA determined that no additional margin of safety is necessary to protect infants and children as part of the qualitative assessment conducted. Based upon its evaluation in the *Bacillus subtilis* strain RTI477 and *Bacillus velezensis* strain RTI301 Human Health Assessment, which concludes that there are no risks of concern from aggregate exposure to *Bacillus velezensis* strain RTI301, EPA concludes that there is a reasonable certainty that no harm will result to the U.S. population, including infants and children, from aggregate exposure to residues of *Bacillus velezensis* strain RTI301.

B. Analytical Enforcement Methodology

An analytical method is not required for *Bacillus velezensis* strain RTI301 because EPA is establishing an exemption from the requirement of a tolerance without any numerical limitation.

C. Conclusion

Therefore, an exemption from the requirement of a tolerance is established for residues of *Bacillus velezensis* strain RTI301 in or on all food commodities when used in accordance with label directions and good agricultural practices.

IV. Statutory and Executive Order Reviews

This action establishes a tolerance exemption under FFDCA section 408(d) in response to a petition submitted to EPA. The Office of Management and Budget (OMB) has exempted these types of actions from review under Executive Order 12866, entitled ''Regulatory Planning and Review'' (58 FR 51735, October 4, 1993). Because this action has been exempted from review under Executive Order 12866, this action is not subject to Executive Order 13211, entitled ''Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355, May 22, 2001), or Executive Order 13045, entitled ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997). This action does not contain any information collections subject to OMB approval under the Paperwork Reduction Act, 44 U.S.C.

3501 *et seq.,* nor does it require any special considerations under Executive Order 12898, entitled ''Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations'' (59 FR 7629, February 16, 1994).

Since tolerances and exemptions that are established on the basis of a petition under FFDCA section 408(d), such as the tolerance exemption in this action, do not require the issuance of a proposed rule, the requirements of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) do not apply.

This action directly regulates growers, food processors, food handlers, and food retailers, not States or Tribes. As a result, this action does not alter the relationships or distribution of power and responsibilities established by Congress in the preemption provisions of FFDCA section 408(n)(4). As such, EPA has determined that this action will not have a substantial direct effect on States or Tribal Governments, on the relationship between the National Government and the States or Tribal Governments, or on the distribution of power and responsibilities among the various levels of government or between the Federal Government and Indian Tribes. Thus, EPA has determined that Executive Order 13132, entitled ''Federalism'' (64 FR 43255, August 10, 1999), and Executive Order 13175, entitled ''Consultation and Coordination with Indian Tribal Governments'' (65 FR 67249, November 9, 2000), do not apply to this action. In addition, this action does not impose any enforceable duty or contain any unfunded mandate as described under Title II of the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*).

This action does not involve any technical standards that would require EPA's consideration of voluntary consensus standards pursuant to section 12(d) of the National Technology Transfer and Advancement Act (15 U.S.C. 272 note).

V. Congressional Review Act

Pursuant to the Congressional Review Act (5 U.S.C. 801 *et seq.*), EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the **Federal Register**. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 180

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: June 21, 2021.

Edward Messina,

Acting Director, Office of Pesticide Programs.

Therefore, for the reasons stated in the preamble, EPA is amending 40 CFR chapter I as follows:

PART 180—TOLERANCES AND EXEMPTIONS FOR PESTICIDE CHEMICAL RESIDUES IN FOOD

■ 1. The authority citation for part 180 continues to read as follows:

Authority: 21 U.S.C. 321(q), 346a and 371.

■ 2. Add § 180.1383 to subpart D to read as follows:

§ 180.1383 Bacillus velezensis strain RTI301; exemption from the requirement of a tolerance.

An exemption from the requirement of a tolerance is established for residues of *Bacillus velezensis* strain RTI301 in or on all food commodities when used in accordance with label directions and good agricultural practices.

[FR Doc. 2021–13806 Filed 6–28–21; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 716

[EPA–HQ–OPPT–2020–0474; FRL–10020–38]

RIN 2070–AB11

Health and Safety Data Reporting; Addition of 20 High-Priority Substances and 30 Organohalogen Flame Retardants

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This final rule, issued pursuant to the Toxic Substances Control Act (TSCA) and the TSCA Health and Safety Data Reporting rule, requires manufacturers (including importers) of 50 specified chemical substances to report certain lists and copies of unpublished health and safety studies to EPA. The chemical substances subject to this rule are listed in this document and consist of the 20 designated by EPA as High-Priority Substances and the 30 organohalogen flame retardants being evaluated for risks by the Consumer Product Safety Commission (CPSC) under the Federal Hazardous Substances Act (FHSA). EPA is taking this action because the TSCA Interagency Testing Committee (ITC) added these chemical substances to the *Priority Testing List* through its 69th and 74th Reports and EPA will use this information to inform the risk evaluations currently underway for 20 High-Priority Substances and for future prioritization.

DATES: This final rule is effective July 29, 2021. For purposes of judicial review, this final rule shall be promulgated at 1 p.m. eastern daylight/standard time July 13, 2021

A request to withdraw a chemical substance from this final rule pursuant to 40 CFR 716.105(c) must be received on or before July 13, 2021. (See Unit IV. of the **SUPPLEMENTARY INFORMATION**.)

Dates for the reporting requirements are enumerated in Unit III.B. of the **SUPPLEMENTARY INFORMATION**.

ADDRESSES:

Comments. Submit your comments, identified by docket identification (ID) number EPA–HQ–OPPT–2020–0474, by using the *Federal eRulemaking Portal* at *http://www.regulations.gov.* Follow the online instructions for submitting comments. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute.

Due to the public health concerns related to COVID–19, the EPA Docket Center (EPA/DC) and Reading Room is closed to visitors with limited exceptions. The staff continues to provide remote customer service via email, phone, and webform. For the latest status information on EPA/DC services and docket access, visit *https://www.epa.gov/dockets.*

Withdrawal requests. For submission of a withdrawal request, see Unit IV. of this document. Each withdrawal request must be identified by docket ID number EPA–HQ–OPPT–2020–0474.

FOR FURTHER INFORMATION CONTACT:

For technical information contact: Diana Fahning, Data Gathering and Analysis Division (7410M), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20460–0001; telephone number: (202) 564–8621; email address: *fahning.diana@epa.gov.*

For general information contact: The TSCA-Hotline, ABVI-Goodwill, 422 South Clinton Ave., Rochester, NY 14620; telephone number: (202) 554–1404; email address: *TSCA-Hotline@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

You may be potentially affected by this action if you manufacture (defined by statute to include import) any of the chemical substances that are listed in 40 CFR 716.120(d) of the regulatory text of this document. The following list of North American Industrial Classification System (NAICS) codes is not intended to be exhaustive, but rather provides a guide to help readers determine whether this document applies to them. Potentially affected entities may include: Chemical manufacturers (including importers), (NAICS codes 325 and 324110), *e.g.,* persons who manufacture (defined by statute to include import) one or more of the subject chemical substances.

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

1. *Submitting CBI.* Do not submit this information to EPA through *http://www.regulations.gov* or email. 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.

2. *Tips for preparing your comments.* When preparing and submitting your comments, see the commenting tips at *https://www.epa.gov/dockets/commenting-epa-dockets.*

II. Background

A. What action is the Agency taking?

EPA is issuing a final rule pursuant to TSCA section 8(d) to require manufacturers (including importers) of chemical substances listed in this document and on the ITC's TSCA section 4(e) Priority Testing List to submit lists and copies of certain unpublished health and safety studies to EPA. The regulatory text of this document lists the chemical substances and their Chemical Abstracts Service Registry Numbers (CASRN) that are being added to the Health and Safety Data Reporting rule. It also lists the specific data reporting requirements imposed by this final rule.

B. What is the Agency's authority for taking this action?

EPA promulgated the Health and Safety Data Reporting rule under TSCA section 8(d) (15 U.S.C. 2607(d)), and it is codified at 40 CFR part 716. EPA is using this TSCA section 8(d) rule in accordance with 40 CFR 716.105 to gather information on chemical substances. These studies are expected to provide EPA with useful information for conducting TSCA activities such as prioritization and risk evaluation.

The Agency adds substances to the rule via rule or notice, in accordance with 40 CFR 716.105(a) or (b), respectively. The rule requires certain past, current, and prospective manufacturers (which under TSCA includes importers) to submit copies and/or lists of unpublished health and safety studies on the listed chemical substances that they manufacture. In some cases, EPA may also require processors to comply with the rule.

The TSCA section 8(d) Health and Safety Data Reporting rule provides for the addition of TSCA section 4(e) Priority Testing List chemical substances to the list of chemical substances subject to the rule (see Table of Chemicals, 40 CFR 716.120) (Ref. 1). Whenever EPA announces the receipt of an ITC Report, EPA may, amend the TSCA section 8(d) Health and Safety Data Reporting rule by adding the recommended (or designated) chemical substances to the TSCA section 4(e) list. In doing so, EPA must provide a 14-day period (measured from the date of publication of the **Federal Register** document announcing the rule) for persons to submit information showing why a chemical substance, mixture, or category of chemical substances should be withdrawn from the amendment. The amendment adding these chemical substances to the Health and Safety Data Reporting rule is effective July 29, 2021. If EPA withdraws a chemical substance from the amendment, a **Federal Register** document announcing this decision is to be published no later than July 29, 2021.

C. Comments Received on the 74th Report of the ITC

EPA received seven public comments on the 74th Report of the ITC. One comment requested additional information be provided for why certain organohalogen flame retardants being added to the Priority Testing List (PTL). Several comments questioned whether requiring 8(d) reporting for a chemical substance for which EPA has issued a Section 4 Test Order would be redundant and/or produce data in time for use in a risk evaluation under TSCA section 6 on the applicable chemical substance. EPA also received a comment on chemicals substances to remove from the PTL. Additionally, one commenter recommended additional activities for EPA to conduct related to fulfilling data needs (*e.g.,* via the use of Test Orders pursuant to section 4 of TSCA).

EPA has reviewed the comments and continues to believe that it is appropriate to list these chemical substances in this document onto the ITC's TSCA section 4(e) Priority Testing List to prompt EPA to implement their authority pursuant to TSCA section 8(d), to require manufacturers (including importers) to submit lists and copies of certain unpublished health and safety studies to EPA. The 74th ITC Report provided the basis for its inclusion of all chemical substances that were added to the PTL. Regarding possible redundancies of published and previously submitted information under other TSCA programs, under 40 CFR 716.20(a) certain studies are exempt from the copy and list submission requirements of 40 CFR 716.30 and 716.35. Within EPA's current timeline for risk evaluations under TSCA section 6, data received via this 8(d) action would be received in time for use in risk evaluations for chemical substances that have been designated as high-priority substances, and data received on the other chemical substances listed in this document would help inform future prioritization activities, as well as help inform other agency decisions involving such chemical substances. In regard to chemical substances being recommended for deletion from the PTL and for requests for certain activities to be undertaken in regard to certain chemical substances, EPA will consider such recommendations during future ITC discussions and during decision-making related to its various TSCA statutory authorities.

D. Why is this action issued as a Final Rule?

The regulations at 40 CFR 716.105(b) and (c) establish the process for this action to amend the TSCA section 8(d) Health and Safety Data Reporting rule.

III. Final Rule

A. What chemical substances are added?

In this document, EPA is adding chemical substances to the TSCA section 8(d) Health and Safety Data Reporting rule. This addition implements 40 CFR 716.105(b), which generally provides that ''chemical substances, mixtures, and categories of

chemical substances that have been added to the TSCA section 4(e) Priority List by the Interagency Testing Committee, established under section 4 of TSCA, will be added to § 716.120 . . .'' This addition also addresses the request of the TSCA ITC in its 74th Report (Ref. 2) to add certain chemical substances listed in that report to the TSCA section 8(d) Health and Safety Data Reporting rule. The specific chemical substances being added to the rule are listed in the regulatory text at the end of this document.

B. What are the reporting requirements?

Listed in this unit are the reporting requirements for the chemical substances added by this final rule to the TSCA section 8(d) model Health and Safety Data Reporting rule. The specific types of health and safety studies that must be reported for each of the chemical substances added to the Health and Safety Data Reporting rule as a result of this document can be found in Unit III.C.

1. Persons who, in the 10 years preceding the date a chemical substance is listed, either have proposed to manufacture (including import) or have manufactured (including imported) the listed chemical substance must submit to EPA, during the 60-day reporting period specified in 40 CFR 716.65 and according to the reporting schedule set forth at 40 CFR 716.60, a copy of each specified type of health and safety study which is in their possession at the time the chemical substance is listed in part 716.

2. Persons who, at the time the chemical substance is listed in part 716, propose to manufacture (including import) or are manufacturing (including importing) the listed chemical substance must submit to EPA during the 60-day reporting period specified in 40 CFR 716.65 and according to the reporting schedule set forth at 40 CFR 716.60:

i. A list of the specified types of health and safety studies known to them but not in their possession at the time the chemical substance is listed.

ii. A list of the specified types of health and safety studies that are ongoing at the time the chemical substance is listed and are being conducted by or for them.

iii. A list of the specified types of health and safety studies that are initiated after the date the chemical substance is listed and will be conducted by or for them.

iv. A copy of each specified type of health and safety study which is in their possession at the time the chemical substance is listed.

v. A copy of each specified type of health and safety study that was previously listed as ongoing or subsequently initiated (*i.e.,* listed in accordance with reporting requirements in Unit III.B.2.iii. and iv., respectively) and is now complete—regardless of completion date.

3. Persons who, after the time the chemical substance is listed in part 716, propose to manufacture (including import) the listed chemical substance must submit to EPA during the reporting period specified in 40 CFR 716.65 and according to the reporting schedule set forth at 40 CFR 716.60:

i. A list of the specified types of health and safety studies known to them but not in their possession at the time they propose to manufacture (including import) the listed chemical substance.

ii. A list of the specified types of health and safety studies that are ongoing at the time they propose to manufacture (including import) the listed chemical substance and are being conducted by or for them.

iii. A list of the specified types of health and safety studies that are initiated after the time they propose to manufacture (including import) the listed chemical substance and will be conducted by or for them.

iv. A copy of each specified type of health and safety study which is in their possession at the time they propose to manufacture (including import) the listed chemical substance.

v. A copy of each specified type of health and safety study that was previously listed as ongoing or subsequently initiated (*i.e.,* listed in accordance with reporting requirements in Unit III.B.3.iii. and 3.iv., respectively) and is now complete—regardless of the completion date.

The reporting described in Unit III.B. is required by September 27, 2021. Any person who manufactures (including imports) or who proposes to manufacture (including import) the listed chemical substance from July 29, 2021 to September 27, 2021 must inform EPA (by submitting a list) of any studies initiated during the period from July 29, 2021 to September 27, 2021 within 30 days of their initiation, but in no case later than October 27, 2021. In addition, if any such person has submitted lists of studies that were ongoing or initiated during the period from July 29, 2021 to September 27, 2021 to EPA, such person must submit a copy of each study within 30 days after its completion, regardless of the study's completion date. See 40 CFR 716.60 and 716.65.

Detailed guidance for reporting unpublished health and safety data and explanations of reporting exemptions is provided at 40 CFR part 716.

Persons reporting under this rule may also assert CBI claims for certain information included in their submission. TSCA section imposes the following requirements:

- CBI claims must be asserted must be asserted at the time the information claimed as CBI is submitted to EPA. Information submitted with a confidentiality claim may be made public without further notice.
- Information claimed as CBI must be substantiated at the time of submission, with the exception of those types of information exempt from substantiation under TSCA section 14(c)(2).
- All persons making a CBI claim must provide a standard statement concerning the need for the CBI claim and a certification that the statement of need is true and correct.
- Where a specific chemical identity is claimed as CBI, a structurally descriptive generic name must be provided for disclosure to the public.

The 8(d) reporting application accommodates these requirements, incorporating the required statements and certifications, and will prompt the submitter to provide substantiation prior to making a submission that includes CBI claims.

C. What types of studies must be submitted?

Pursuant to 40 CFR 716.20(b)(5) and 716.50, the types of unpublished health and safety studies that must be reported and the chemical grade/purity requirements that must be met or exceeded in individual studies for the chemical substances added to the Health and Safety Data Reporting rule as a result of this document are as follows:

Under this rule, manufacturers (including importers) of High-Priority Substances are required to submit the following:

- Lists and copies of unpublished health and safety studies for all High-Priority Substances specified in this rule on health effects, such as toxicity studies (in vivo and in vitro) on carcinogenicity, reproductive and developmental effects, genotoxicity, neurotoxicity, immunotoxicity, endocrine effects, and other systemic toxicity and toxicokinetics (absorption, distribution, metabolism, or elimination), including modelling studies, in humans or animals.
- All unpublished studies on environmental effects, environmental fate, and physical-chemical properties if performed as described in 40 CFR 716.50 are also required under this rule.

• All unpublished studies on occupational (both users and non-users), general population, consumer, and environmental exposure, such as: Unpublished studies on inhalation and dermal exposure, human biomonitoring, environmental monitoring of indoor and outdoor air, soil, water, and household dust, chamber emission rates from products or polymeric matrices, and unpublished modelling studies that estimate environmental concentrations or human exposures.

• Studies showing any measurable content of the High-Priority Substance in the tested substance (single substances or mixture) must be reported. The composition and purity of test substances must be reported if included as part of the study.

• Studies previously submitted to EPA pursuant to a requirement under TSCA or of the submitter's own accord and studies conducted or to be conducted pursuant to a TSCA section 4 action are exempt from the submission of lists of health and safety studies required under 40 CFR 716.35 and the submission of studies required under this rule.

Under this rule, manufacturers (including importers) of organohalogen flame retardants are required to submit the following:

• Lists and copies of unpublished health and safety studies for all organohalogen flame retardants specified in this rule on health effects, such as toxicity studies (in vivo and in vitro) on carcinogenicity, reproductive and developmental effects, genotoxicity, neurotoxicity, immunotoxicity, endocrine effects, and other systemic toxicity and toxicokinetics (absorption, distribution, metabolism, or elimination), including modelling studies, in humans or animals.

• All unpublished studies on environmental effects, environmental fate, and physical-chemical properties if performed as described in 40 CFR 716.50 are also required under this rule.

• All unpublished studies on occupational (both users and non-users), general population, consumer, and environmental exposure, such as unpublished studies on inhalation and dermal exposure, human biomonitoring, environmental monitoring of indoor and outdoor air, soil, water, and household dust, chamber emission rates from products or polymeric matrices, and unpublished modelling studies that estimate environmental concentrations or human exposures, must be submitted.

• Studies showing any measurable content of the organohalogen flame retardant in the tested substance (single substances or mixture) must be reported. The composition and purity of test substances must be reported if included as part of the study.

• Studies previously submitted to EPA pursuant to a requirement under TSCA or of the submitter's own accord and studies conducted or to be conducted pursuant to a TSCA section 4 action are exempt from the submission of lists of health and safety studies requirements under 40 CFR 716.35 and the submission of studies requirements under this rule.

D. Rationales and Background for Chemical Additions and Reporting Requirements

1. High-Priority Substances

The 20 High-Priority Substances identified in this rule have been designated High-Priority under TSCA section 6(b) because EPA has found that each of these chemical substances may present an unreasonable risk of injury to health or the environment (Ref. 3). EPA is seeking unpublished health and safety studies to ensure that such studies are available to EPA to inform its risk evaluation findings of whether any of these High-Priority Substances present an unreasonable risk of injury to health or the environment. Further, this information will be considered, as appropriate, when reviewing potential analogue data for read across and/or category development in assessing new chemicals.

2. Organohalogen Flame Retardants

EPA requests this information to help support prioritization and evaluation activities under TSCA (*see* TSCA section 6(b), and as discussed above). Further, this information will be considered, as appropriate, when reviewing potential analogue data for read across and/or category development in assessing new chemicals. Additionally, CPSC, a representative member of the ITC, needs information on a group of organohalogen flame retardants because the Commission voted to grant a petition to begin rulemaking for this class of chemicals under the Federal Hazardous Substances Act (FHSA), (Ref. 5). Organohalogen flame retardants may be added to consumer products to prevent or slow combustion, but are additive, *i.e.,* not covalently bound to the substrate, which can be textiles, polymers, or foam. Most organohalogen flame retardants are semi-volatile compounds (SVOCs), that can migrate into air, where they bind to airborne particles and surfaces in the home. In addition to direct contact with organohalogen flame retardant-containing products, a substantial portion of exposure is believed to occur from exposure to household dust, especially in children. Biomonitoring studies and measurements of household dust and indoor air demonstrate that exposure to organohalogen flame retardants is nearly ubiquitous.

Many organohalogen flame retardants have been shown to cause health effects. Health effects associated with organohalogen flame retardants include carcinogenicity (*e.g.,* halogenated alkyl phosphates), developmental effects (*e.g.,* polybrominated diphenyl ethers (PBDEs)), and developmental neurotoxicity (*e.g.,* Decabromodiphenyl ether (decaBDE)).

In 2015, CPSC was petitioned by a number of organizations and individuals, such as consumer groups, medical associations, workers, and firefighter organizations, to ban the use of all additive, non-polymeric organohalogen flame retardants under the authority of the FHSA in the following consumer products: (1) Durable infant or toddler products, children's toys, child care articles, or other children's products (other than car seats, which are under Department of Transportation's jurisdiction); (2) Residential upholstered furniture; (3) Mattresses and mattress pads; and (4) The plastic casings of electronic devices (Ref. 5).

CPSC granted the petition in 2017 and directed staff to complete a scoping and feasibility study in cooperation with the National Academy of Sciences, Engineering, and Medicine (NASEM). The task for this project was to develop a scientifically based scoping plan to identify the potential health hazards associated with additive, nonpolymeric organohalogen flame retardants as a class. The NASEM Committee published the report, ''A Class Approach to Hazard Assessment of Organohalogen Flame Retardants'' in May 2019 (Ref. 6). A key conclusion of the NASEM Committee is that organohalogen flame retardants cannot be treated as a single class. Rather, the NASEM Committee identified 14 subclasses of organohalogen flame retardants, based on chemical structure, physicochemical properties of the chemicals, and predicted biologic activity. The NASEM Committee identified 161 organohalogen flame retardants and more than 1,000 analog chemicals. CPSC staff is undertaking the risk assessment of 14 classes of organohalogen flame retardants following the recommendations of the NASEM Committee.

Because preliminary searches show that little or no health and safety

information is available for many of the 161 organohalogen flame retardants, including the organohalogen flame retardants being added here to the TSCA section 8(d) Health and Safety Data Reporting rule, the submission of the lists and copies of the unpublished health and safety studies specified in this rule is being required under the TSCA section 8(d) Health and Safety Data Reporting rule for these OFR additions. As indicated above, this information will also inform TSCA activities such as future prioritization efforts and, with potential read-across data, new chemical reviews. Further, EPA will coordinate with ITC members to share information received, as appropriate (*e.g.,* to help inform CPSC's evaluation of specific chemicals).

E. What are the incremental economic implications of this action?

EPA prepared an economic analysis for the addition of the 50 chemical substances to the TSCA section 8(d) Health and Safety Data Reporting rule, entitled, ''TSCA Section 8(d): Economic Impact Analysis for Adding 50 Chemicals from the 74th ITC Report of the TSCA Interagency Testing Committee to the Health and Safety Data Reporting Rule.'' (Economic Analysis, Ref. 7) a copy of which is included in the docket for this rulemaking. The total one-time cost associated with this final rule is estimated to be approximately $185,000 based on approximately 1,900 and 420 hours of industry and EPA burden, respectively.

IV. Requesting a Chemical Substance Be Withdrawn From This Final Rule

As specified in 40 CFR 716.105(c), EPA may, in its discretion, remove a chemical substance, mixture, or category of chemical substances from this final rule for good cause prior to the effective date of this final rule. Any person who believes that the reporting required by this final rule is not warranted for a chemical substance listed in this final rule must submit to EPA detailed reasons for that belief. You must submit your request to EPA on or before July 13, 2021 and in accordance with the instructions provided in 40 CFR 716.105(c) and (d). In addition, to ensure proper receipt by EPA, you must identify docket ID number EPA–HQ–OPPT–2020–0474. If the EPA Administrator withdraws a chemical substance, mixture, or category of chemical substances from the amendment, in accordance with 40 CFR 716.105(c), a **Federal Register** document announcing this decision will be published no later than July 29, 2021.

V. References

The following is a listing of the documents that are specifically referenced in this document. The docket includes these documents and other information considered by EPA. For more information about these references, please consult the technical person listed under **FOR FURTHER INFORMATION CONTACT.**

1. EPA. 40 CFR 716.120. Substances and listed mixtures to which this subpart applies. Available online at: *https://www.ecfr.gov/cgibin/textidx?SID=94b50835053a07b80c3517fff641aeba&mc=true&node=pt40.33.716&rgn=div5#se40.33.716_1120.*
2. ITC. Notice; Seventy-Fourth Report of the TSCA Interagency Testing Committee to the Administrator of the Environmental Protection Agency; Receipt of Report and Request for Comments. **Federal Register** (86 FR 22414, April 28, 2021) (FRL–10020–39). Available online at: *https://www.govinfo.gov/content/pkg/FR-2021-04-28/pdf/2021-08839.pdf.*
3. EPA. High-Priority Substance Designations Under the Toxic Substances Control Act (TSCA) and Initiation of Risk Evaluation on High-Priority Substances; Notice of Availability. **Federal Register** (84 FR 71924, December 30, 2019) (FRL–10003–15). Available online at: *https://www.govinfo.gov/content/pkg/FR-2019-12-30/pdf/2019-28225.pdf.*
4. EPA. Procedures for Prioritization of Chemicals for Risk Evaluation Under the Toxic Substances Control Act; Final Rule. **Federal Register** (82 FR 33753, December 20, 2017) (FRL–9964–24). Available online at: *https://www.federalregister.gov/documents/2017/07/20/2017-14325/procedures-for-prioritization-of-chemicals-for-risk-evaluation-under-the-toxic-substances-control.*
5. CPSC. U.S. Consumer Product Safety Commission Petition: Products Containing Organohalogen Flame Retardants. Docket ID number: CPSC–2015–0022. Available online at: *https://www.regulations.gov/docket?D=CPSC-2015-0022.*
6. CPSC. National Academies of Sciences, Engineering, and Medicine 2019. A Class Approach to Hazard Assessment of Organohalogen Flame Retardants. Washington, DC: The National Academies Press. *https://doi.org/10.17226/25412.* Available online at: *http://nap.edu/25412.*
7. EPA. TSCA Section 8(d): Economic Impact Analysis for Adding 50 Chemicals From the 74th ITC Report of the TSCA Interagency Testing Committee to the Health and Safety Data Reporting Rule. September 10, 2020.

VI. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *http://www2.epa.gov/laws-regulations/laws-and-executive-orders.*

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

The Office of Management and Budget (OMB) has exempted actions under TSCA section 8(d) related to the Health and Safety Data Reporting rule from the requirements of Executive Order 12866 (58 FR 51735, October 4, 1993). As such, this final rule was not reviewed by OMB under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011).

B. Paperwork Reduction Act (PRA)

According to PRA, 44 U.S.C. 3501 *et seq.,* an agency may not conduct or sponsor, and a person is not required to respond to a collection of information that requires OMB approval under PRA, unless it has been approved by OMB and displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in title 40 of the CFR, after appearing in the **Federal Register**, are listed in 40 CFR part 9, and included on the related collection instrument or form, if applicable.

The information collection requirements related to this action have already been approved by OMB pursuant to PRA under OMB control number 2070–0004. This action does not impose any burden requiring additional OMB approval. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here.

This action requires the reporting of health and safety data to EPA by manufacturers (including importers) of certain chemical substances requested by the ITC to be added to the Health and Safety Data Reporting Rule in its Seventy-Fourth Report of the ITC (Ref. 2). EPA intends to use information collected under the rule to assist in chemical assessments under TSCA, and to inform any additional work necessary under environmental protection mandates beyond TSCA. Submitters may designate information as confidential, trade secret, or proprietary. EPA has implemented procedures to protect any confidential, trade secret or proprietary information from disclosure. These procedures comply with TSCA section 14 and EPA's confidentiality regulation, 40 CFR part 2, subpart B.

Respondents/affected entities: Manufacturers (including importers) of 50 chemical substances requested by the ITC to be included in the Health and Safety Data Reporting Rule.

Respondents' obligation to respond: Mandatory (15 U.S.C. 2607(d)).

Estimated number of respondents: 23.

Frequency of response: Once.

Total estimated burden: 1,854 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: $146,745 (per year), with no annualized capital or operation and maintenance costs.

C. Regulatory Flexibility Act (RFA)

Pursuant to RFA section 605(b), 5 U.S.C. 601 *et seq.,* I hereby certify that this action will not have a significant economic impact on a substantial number of small entities as defined by the RFA. The small entities subject to the requirements of this action are manufacturers (including importers) of 50 chemicals requested by the ITC to be added to the Health and Safety Data Reporting Rule. EPA estimates that 106 of the 129 firms in the affected universe are small entities. Of those small firms, all would have cost impacts of less than 1% of annual revenue. Details of this analysis are presented in the Economic Analysis of this rule (Ref. 7), which can be found in the docket.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of $100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The requirements of this action would primarily affect manufacturers (including importers) of 50 chemical substances listed in 40 CFR 716.120(d) of the regulatory text of this document. The total quantified one-time costs of this final rule are approximately $183,812.

E. Executive Order 13132: Federalism

This action does not have federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999). 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.

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

This action does not have tribal implications as specified in Executive Order 13175 (65 FR 67249, November 9, 2000). It will not have substantial direct effects on tribal governments, 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. Thus, E.O. 13175 does not apply to this action.

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

EPA interprets Executive Order 13045 (62 FR 19885, April 23, 1997) as applying only to those regulatory actions that concern environmental health or safety risks that the Agency has reason to believe may disproportionately affect children, per the definition of ''covered regulatory action'' in section 2–202 of the Executive Order. This action is not a covered regulatory action because it is not ''economically significant'' under Executive Order 12866 and it does not concern an environmental health risk or safety risk. Although this action would not establish an environmental standard intended to mitigate health or safety risks, the information that would be submitted to EPA in accordance with this rule would be used to inform the Agency's decision-making process regarding chemical substances to which children may be disproportionately exposed. This information may also assist the Agency and others in determining whether the chemical substances covered in this proposed rule present potential risks, which would allow the Agency and others to take appropriate action to investigate and mitigate those risks.

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

This action is not a ''significant energy action'' as defined in Executive Order 13211 (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 and has not otherwise been designated by the Administrator of OMB's Office of Information and Regulatory Affairs as a ''significant energy action.''

I. National Technology Transfer and Advancement Act (NTTAA)

Because this action does not involve any technical standards, NTTAA section 12(d), 15 U.S.C. 272 note, does not apply to this action.

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

This action does not entail special considerations of environmental justice related issues as delineated by Executive Order 12898 (59 FR 7629, February 16, 1994). However, the Agency believes that the information collected through this rule will inform the TSCA risk evaluations that are planned for these chemicals and will thereby enable the Agency to better protect human health and the environment, including in low-income and minority communities.

L. Congressional Review Act (CRA)

This action is subject to the CRA (5 U.S.C. 801 *et seq.*), and EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 716

Environmental protection, Chemicals, Hazardous substances, Health and safety, Reporting and recordkeeping requirements.

Dated: June 17, 2021.

Michal Freedhoff,

Assistant Administrator, Office of Chemical Safety and Pollution Prevention.

Therefore, for the reasons stated in the preamble, EPA is amending 40 CFR chapter I as follows:

PART 716—HEALTH AND SAFETY DATA REPORTING

■ 1. The authority citation for part 716 continues to read as follows:

Authority: 15 U.S.C. 2607(d).

■ 2. In § 716.21, add paragraphs (a)(9) and (10) to read as follows:

§ 716.21 Chemical specific reporting requirements.

(a) * * *

(9) For 1,3-Butadiene (106–99–0), Butyl benzyl phthalate (BBP)—(1,2-Benzene- dicarboxylic acid, 1- butyl 2(phenylmethyl) ester (85–68–7), Dibutyl phthalate (DBP) (1,2-Benzene-dicarboxylic acid, 1,2- dibutyl ester) (84–74–2), o-Dichlorobenzene (95–50–1), p-Dichlorobenzene (106–46–7), trans-1,2-Dichloroethylene (156–60–5), 1,2-Dichloropropane (78–87–5), Dicyclohexyl phthalate (84–61–7), Diethylhexyl phthalate (DEHP)—(1,2-Benzene- dicarboxylic acid, 1,2- bis(2-ethylhexyl) ester) (117–81–7), Diisobutyl phthalate (DIBP)—(1,2-Benzene- dicarboxylic acid, 1,2- bis-(2methylpropyl) ester) (84–69–5), Formaldehyde (50–00–0), 1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta [g]-2-benzopyran (HHCB) (1222–05–5), Phthalic anhydride (85–44–9), 4,4′-(1-Methylethylidene)bis[2, 6-dibromophenol] (TBBPA) (79–94–7), and 1,1,2-Trichloroethane (79–00–5), all unpublished studies on health effects (including toxicity studies (in vivo and in vitro) on carcinogenicity,

reproductive and developmental effects, genotoxicity, neurotoxicity, immunotoxicity, endocrine effects, and other systemic toxicity); toxicokinetics (absorption, distribution, metabolism, or elimination), including modelling studies, in humans or animals; environmental effects; environmental fate; physical-chemical properties if performed as described in 40 CFR 716.50; and occupational (both users and non-users), general population, consumer, bystander, and environmental exposure must be submitted. Studies showing any measurable content of the High-Priority Substance in the tested substance (single substances or mixture) must be reported. The composition and purity of test substances must be reported if included as part of the study. Studies previously submitted to EPA pursuant to a requirement under TSCA or of the submitter's own accord and studies conducted or to be conducted pursuant to a TSCA section 4 action are exempt from the submission of lists of health and safety studies required under 40 CFR 716.35 and the submission of studies required under this rule.

(10) For purposes of this paragraph, the term *organohalogen flame retardant* includes any substances listed in paragraph(d) of this section under the category ''Organohalogen flame retardants''. For any organohalogen flame retardant, all unpublished studies on health effects (including toxicity studies (in vivo and in vitro) on carcinogenicity, reproductive and developmental effects, genotoxicity, neurotoxicity, immunotoxicity, endocrine effects, and other systemic toxicity); toxicokinetics (absorption, distribution, metabolism, or elimination), including modelling studies, in humans or animals; environmental fate; physical-chemical properties if performed as described in 40 CFR 716.50; and occupational (both users and non-users), general population, consumer, bystander, and environmental exposure must be submitted. Studies showing any measurable content of the organohalogen flame retardant in the tested substance (single substances or mixture) must be reported. The composition and purity of test substances must be reported if included as part of the study. Studies previously submitted to EPA pursuant to a requirement under TSCA or of the submitter's own accord and studies conducted or to be conducted pursuant to a TSCA section 4 action are exempt from the submission of lists of health and safety studies requirements under 40 CFR 716.35 and the submission of studies requirements under this rule.

* * * * *

■ 3. In § 716.120, amend the table in paragraph (d) by:

■ a. Adding in alphabetical order the category ''High-Priority Substances'' and entries ''1,3-Butadiene'', ''Butyl benzyl phthalate (BBP)—1,2-Benzene-dicarboxylic acid, 1-butyl 2(phenylmethyl) ester'', ''Dibutyl phthalate (DBP) (1,2-Benzene-dicarboxylic acid, 1,2-dibutyl ester)'', ''o-Dichlorobenzene'', ''p-Dichlorobenzene'', ''1,1-Dichloroethane'', ''1,2-Dichloroethane'', ''Trans-1,2- Dichloroethylene'', ''1,2-Dichloropropane'', ''Dicyclohexyl phthalate'', ''Di-ethylhexyl phthalate (DEHP)—(1,2-Benzene-dicarboxylic acid, 1,2- bis(2-ethylhexyl) ester)'', ''Di-isobutyl phthalate (DIBP)—(1,2-Benzene- dicarboxylic acid, 1,2- bis-(2methylpropyl) ester)'', ''Ethylene dibromide'', ''Formaldehyde'', ''1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta [g]-2-benzopyran (HHCB)'', ''4,4′-(1-Methylethylidene)bis[2, 6-dibromophenol] (TBBPA)'', ''Phosphoric acid, triphenyl ester (TPP)'', ''Phthalic anhydride'', ''1,1,2-Trichloroethane'', and ''Tris(2-chloroethyl) phosphate (TCEP)''; and

■ b. Adding in alphabetical order the category ''Organohalogen flame retardants'' and entries ''Bis(2-ethylhexyl) tetrabromophthalate'', ''Bis(hexachlorocyclopentadieno) cyclooctane'', ''1,2-Bis(2,4,6-tribromophenoxy)ethane'', ''1,1′-Ethane-1,2-diylbis(pentabromobenzene)'', ''2-Ethylhexyl-2,3,4,5-tetrabromobenzoate'', ''2-(2-Hydroxyethoxy)ethyl 2-hydroxypropyl 3,4,5,6-tetrabromophthalate'', ''2,2′-[(1-Methylethylidene)bis[(2,6-dibromo-4,1-phenylene)oxymethylene]]bis[oxirane]'', ''Mixture of chlorinated linear alkanes C14–17 with 45–52% chlorine'', ''N,N-Ethylene-bis(tetrabromophthalimide)'', ''Pentabromochlorocyclohexane'', ''(Pentabromophenyl)methyl acrylate'', ''Pentabromotoluene'', ''Perbromo-1,4-diphenoxybenzene'', ''Phosphonic acid, (2-chloroethyl)-, bis(2-chloroethyl) ester'', ''Phosphoric acid, 2,2-bis(chloromethyl)-1,3-propanediyl tetrakis(2-chloroethyl) ester'', ''Propanoic acid, 2-bromo-, methyl ester'', ''Tetrabromobisphenol A-bis(2,3-dibromopropyl ether)'', ''Tetrabromobisphenol A bis(2-hydroxyethyl) ether'', ''Tetrabromobisphenol A diallyl ether'', ''Tetrabromobisphenol A dimethyl ether'', ''2,4,6-Tribromoaniline'', ''1,3,5-Tribromo-2-(prop-2-en-1-yloxy)benzene'', ''Tris(2-chloroethyl) phosphite'', ''Tris(1-chloro-2-propyl)phosphate'', ''Tris(2-chloro-1-propyl)phosphate'', ''Tris(2,3-dibromopropyl) phosphate'', ''1,3,5-Tris(2,3-dibromopropyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione'', ''Tris(1,3-dichloro-2-propyl)phosphate'', ''Tris(tribromoneopentyl)phosphate'', and ''2,4,6-Tris-(2,4,6-tribromophenoxy)-1,3,5-triazine''.

The additions read as follows:

§ 716.120 Substances and listed mixtures to which this subpart applies.

* * * * *

(d) * * *

Category	CAS No.	Special exemptions	Effective date	Sunset date
High-Priority Substances:				
1,3-Butadiene	106–99–0	§ 716.21(a)(9)	7/29/21	9/27/21
Butyl benzyl phthalate (BBP)—1,2-Benzene-dicarboxylic acid, 1-butyl 2(phenylmethyl) ester	85–68–7	§ 716.21(a)(9)	7/29/21	9/27/21
Dibutyl phthalate (DBP) (1,2-Benzene-dicarboxylic acid, 1,2-dibutyl ester)	84–74–2	§ 716.21(a)(9)	7/29/21	9/27/21
o-Dichlorobenzene	95–50–1	§ 716.21(a)(9)	7/29/21	9/27/21
p-Dichlorobenzene	106–46–7	§ 716.21(a)(9)	7/29/21	9/27/21
1,1-Dichloroethane	75–34–3	§ 716.21(a)(9)	7/29/21	9/27/21
1,2-Dichloroethane	107–06–2	§ 716.21(a)(9)	7/29/21	9/27/21
Trans-1,2-Dichloroethylene	156–60–5	§ 716.21(a)(9)	7/29/21	9/27/21
1,2-Dichloropropane	78–87–5	§ 716.21(a)(9)	7/29/21	9/27/21
Dicyclohexyl phthalate	84–61–7	§ 716.21(a)(9)	7/29/21	9/27/21
Di-ethylhexyl phthalate (DEHP)—(1,2-Benzene-dicarboxylic acid, 1,2-bis(2-ethylhexyl) ester)	117–81–7	§ 716.21(a)(9)	7/29/21	9/27/21

Category	CAS No.	Special exemptions	Effective date	Sunset date
Di-isobutyl phthalate (DIBP)—(1,2-Benzene-dicarboxylic acid, 1,2-bis-(2methylpropyl) ester)	84–69–5	§ 716.21(a)(9)	7/29/21	9/27/21
Ethylene dibromide	106–93–4	§ 716.21(a)(9)	7/29/21	9/27/21
Formaldehyde	50–00–0	§ 716.21(a)(9)	7/29/21	9/27/21
1,3,4,6,7,8-Hexahydro-4,6,6,7,8,8-hexamethylcyclopenta [g]-2-benzopyran (HHCB)	1222–05–5	§ 716.21(a)(9)	7/29/21	9/27/21
4,4′-(1-Methylethylidene)bis[2, 6-dibromophenol] (TBBPA)	79–94–7	§ 716.21(a)(9)	7/29/21	9/27/21
Phosphoric acid, triphenyl ester (TPP)	115–86–6	§ 716.21(a)(9)	7/29/21	9/27/21
Phthalic anhydride	85–44–9	§ 716.21(a)(9)	7/29/21	9/27/21
1,1,2-Trichloroethane	79–00–5	§ 716.21(a)(9)	7/29/21	9/27/21
Tris(2-chloroethyl) phosphate (TCEP)	115–96–8	§ 716.21(a)(9)	7/29/21	9/27/21
* * * * * * *				
Organohalogen flame retardants:				
Bis(2-ethylhexyl) tetrabromophthalate	26040–51–7	§ 716.21(a)(10)	7/29/21	9/27/21
Bis(hexachlorocyclopentadieno)cyclooctane	13560–89–9	§ 716.21(a)(10)	7/29/21	9/27/21
1,2-Bis(2,4,6-tribromophenoxy)ethane	37853–59–1	§ 716.21(a)(10)	7/29/21	9/27/21
1,1′-Ethane-1,2-diylbis(pentabromobenzene)	84852–53–9	§ 716.21(a)(10)	7/29/21	9/27/21
2-Ethylhexyl-2,3,4,5-tetrabromobenzoate	183658–27–7	§ 716.21(a)(10)	7/29/21	9/27/21
2-(2-Hydroxyethoxy)ethyl 2-hydroxypropyl 3,4,5,6-tetrabromophthalate	20566–35–2	§ 716.21(a)(10)	7/29/21	9/27/21
2,2′-[(1-Methylethylidene)bis[(2,6-dibromo-4,1-phenylene)oxymethylene]]bis[oxirane]	3072–84–2	§ 716.21(a)(10)	7/29/21	9/27/21
Mixture of chlorinated linear alkanes C14–17 with 45–52% chlorine	85535–85–9	§ 716.21(a)(10)	7/29/21	9/27/21
N,N-Ethylene-bis(tetrabromophthalimide)	32588–76–4	§ 716.21(a)(10)	7/29/21	9/27/21
Pentabromochlorocyclohexane	87–84–3	§ 716.21(a)(10)	7/29/21	9/27/21
(Pentabromophenyl)methyl acrylate	59447–55–1	§ 716.21(a)(10)	7/29/21	9/27/21
Pentabromotoluene	87–83–2	§ 716.21(a)(10)	7/29/21	9/27/21
Perbromo-1,4-diphenoxybenzene	58965–66–5	§ 716.21(a)(10)	7/29/21	9/27/21
Phosphonic acid, (2-chloroethyl)-, bis(2-chloroethyl) ester	6294–34–4	§ 716.21(a)(10)	7/29/21	9/27/21
Phosphoric acid, 2,2-bis(chloromethyl)-1,3-propanediyl tetrakis(2-chloroethyl) ester	38051–10–4	§ 716.21(a)(10)	7/29/21	9/27/21
Propanoic acid, 2-bromo-, methyl ester	5445–17–0	§ 716.21(a)(10)	7/29/21	9/27/21
Tetrabromobisphenol A-bis(2,3-dibromopropyl ether)	21850–44–2	§ 716.21(a)(10)	7/29/21	9/27/21
Tetrabromobisphenol A bis(2-hydroxyethyl) ether	4162–45–2	§ 716.21(a)(10)	7/29/21	9/27/21
Tetrabromobisphenol A diallyl ether	25327–89–3	§ 716.21(a)(10)	7/29/21	9/27/21
Tetrabromobisphenol A dimethyl ether	37853–61–5	§ 716.21(a)(10)	7/29/21	9/27/21
2,4,6-Tribromoaniline	147–82–0	§ 716.21(a)(10)	7/29/21	9/27/21
1,3,5-Tribromo-2-(prop-2-en-1-yloxy)benzene	3278–89–5	§ 716.21(a)(10)	7/29/21	9/27/21
Tris(2-chloroethyl)phosphite	140–08–9	§ 716.21(a)(10)	7/29/21	9/27/21
Tris(1-chloro-2-propyl)phosphate	13674–84–5	§ 716.21(a)(10)	7/29/21	9/27/21
Tris(2-chloro-1-propyl)phosphate	6145–73–9	§ 716.21(a)(10)	7/29/21	9/27/21
Tris(2,3-dibromopropyl)phosphate	126–72–7	§ 716.21(a)(10)	7/29/21	9/27/21
1,3,5-Tris(2,3-dibromopropyl)-1,3,5-triazine-2,4,6(1H,3H,5H)-trione	52434–90–9	§ 716.21(a)(10)	7/29/21	9/27/21
Tris(1,3-dichloro-2-propyl)phosphate	13674–87–8	§ 716.21(a)(10)	7/29/21	9/27/21
Tris(tribromoneopentyl)phosphate	19186–97–1	§ 716.21(a)(10)	7/29/21	9/27/21
2,4,6-Tris-(2,4,6-tribromophenoxy)-1,3,5-triazine	25713–60–4	§ 716.21(a)(10)	7/29/21	9/27/21

[FR Doc. 2021–13212 Filed 6–28–21; 8:45 am]

BILLING CODE 6560–50–P

COUNCIL ON ENVIRONMENTAL QUALITY

40 CFR Part 1507

[CEQ–2021–0001]

RIN 0331–AA08

Deadline for Agencies To Propose Updates to National Environmental Policy Act Procedures

AGENCY: Council on Environmental Quality.

ACTION: Interim final rule; request for comments.

SUMMARY: The Council on Environmental Quality (CEQ) is extending the deadline by two years for Federal agencies to develop or revise proposed procedures for implementing the procedural provisions of the National Environmental Policy Act (NEPA).

DATES:

Effective date: This interim rule is effective June 29, 2021.

Comments due date: CEQ must receive comments on this interim rule by July 29, 2021.

ADDRESSES: You may submit comments through any of the following methods:

- *Federal eRulemaking Portal:* https://www.regulations.gov. Follow the instructions for submitting comments.
- *Fax:* 202–456–6546.
- *Mail:* Council on Environmental Quality, 730 Jackson Place NW, Washington, DC 20503.

Instructions: All submissions must include the agency name, ''Council on Environmental Quality,'' and docket number, CEQ–2021–0001, for this rulemaking. All comments received will be posted without change to *https://www.regulations.gov,* including any personal information provided. Do not submit electronically any information you consider to be private, Confidential Business Information (CBI), or other information whose disclosure is restricted by statute.

- *Docket:* For access to the docket to read background documents or comments received, go to *https://www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: Amy B. Coyle, Deputy General Counsel, 202–395–5750, *Amy.B.Coyle@ceq.eop.gov.*

SUPPLEMENTARY INFORMATION:

I. Background

The National Environmental Policy Act of 1969, 42 U.S.C. 4321 *et seq.,* (NEPA) directs Federal agencies to ''use all practicable means and measures . . . to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans.'' 42 U.S.C. 4331(a). In pursuit of that directive, NEPA requires Federal agencies to prepare an environmental impact statement for ''major Federal actions significantly affecting the quality of the human environment.'' 42 U.S.C. 4332(2)(C). NEPA also established the Council on Environmental Quality (CEQ) in the Executive Office of the President, 42 U.S.C. 4342, which oversees Federal agency implementation of NEPA.

In 1970, President Nixon issued E.O. 11514, *Protection and Enhancement of Environmental Quality,* which directed CEQ to issue guidelines for implementation of NEPA.[1] In 1977, President Carter issued E.O. 11991, *Relating to Protection and Enhancement of Environmental Quality,* directing CEQ to issue regulations to govern implementation of NEPA and requiring that Federal agencies comply with those regulations.[2] CEQ promulgated implementing regulations in 1978 at 40 CFR parts 1500 through 1508 (''1978 Rule'').[3] Consistent with the requirement in 40 CFR 1507.3, Federal agencies, in turn, issued their own implementing procedures to supplement the 1978 Rule and integrate the NEPA process into the agencies' specific programs and processes. CEQ made technical amendments to the 1978 Rule in 1979[4] and promulgated minor amendments to it in 1986,[5] but left the regulations largely unchanged for over forty years. As a result, an extensive body of agency practice and caselaw developed based on the 1978 Rule.

On July 16, 2020, CEQ issued a final rule substantially revising the NEPA implementing regulations (''2020 Rule'').[6] As amended, 40 CFR 1507.3(b) requires Federal agencies to propose their own regulations to implement the 2020 Rule by September 14, 2021. CEQ issued a Memorandum to the Federal agencies on July 16, 2020, and the Office of Management and Budget (OMB) issued a Memorandum to the Federal agencies on November 2, 2020, establishing deadlines for Federal agencies to implement the September 14, 2021 deadline.[7]

On January 20, 2021, President Biden signed E.O. 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis,* to empower America's workers, combat climate change, address environmental justice, and improve and protect public health and the environment.[8] In accomplishing these goals, E.O. 13990 directs Federal agencies to ensure the integrity of their decision-making processes and make sound decisions based on science. E.O. 13990 directs Federal agencies to review Federal agency actions taken between January 20, 2017, and January 20, 2021, including the promulgation of regulations, for consistency with those priorities and to take appropriate action, including publishing for notice and comment a proposed rule suspending, revising, or rescinding actions found to be inconsistent with them. An accompanying White House Fact Sheet specifically identifies the 2020 Rule as among the actions to be reviewed.[9] On January 27, 2021, the President signed E.O. 14008, *Tackling the Climate Crisis at Home and Abroad,* which establishes a government-wide approach to reducing climate pollution and establishes an Administration policy to increase climate resilience, transition to a clean-energy economy and support economic opportunities in energy communities, address environmental justice issues and invest in disadvantaged communities, and spur well-paying union jobs and economic growth.[10] E.O. 14008 also requires the Chair of CEQ and the Director of OMB to ensure that Federal infrastructure investments reduce climate pollution and that Federal permitting decisions consider the effects of greenhouse gas emissions and climate change.[11]

CEQ is engaged in an ongoing and comprehensive review of the 2020 Rule for consistency with the nation's environmental, equity, and economic priorities; to evaluate the process CEQ used in developing the 2020 Rule; and to consider whether the 2020 Rule properly and lawfully interprets and implements NEPA. In conducting its review, CEQ will assess how to amend its NEPA regulations to deliver an efficient environmental review process that ensures robust public participation and environmental protection.

II. Summary of Final Rule

CEQ has begun its review of the 2020 Rule and has substantial concerns about the legality of the 2020 Rule, the process that produced it, and whether the 2020 Rule meets the nation's needs and priorities, including the priorities set forth in E.O. 13990 and E.O. 14008. These concerns include that some of the changes made to the NEPA regulations create confusion with respect to NEPA implementation, break from longstanding caselaw interpreting NEPA's statutory requirements, and may have the purpose or effect of improperly limiting relevant NEPA analysis, with negative repercussions in critical areas such as climate change and environmental justice that are inconsistent with the mandates of E.O. 13990 and E.O. 14008. CEQ plans to address these issues through further rulemaking, as described below. Notwithstanding CEQ's ongoing review, the severity of CEQ's concerns, and the likelihood that CEQ will propose significant amendments to the 2020 Rule, 40 CFR 1507.3(b) currently requires Federal agencies to propose revisions to agency-specific NEPA regulations within 12 months of September 14, 2020—by September 14, 2021. Through this interim final rule, CEQ revises § 1507.3(b) to change 12 months to 36 months, providing Federal agencies an additional two years, until September 14, 2023, to propose revisions to their NEPA procedures. Federal agencies have raised concerns to CEQ about developing revised procedures consistent with the 2020 Rule given its inconsistency with E.O. 13990 and E.O. 14008 and CEQ's ongoing review, which could result in

[1] 35 FR 4247 (Mar. 7, 1970), sec. 3(h).

[2] 42 FR 26967 (May 25, 1977), sec. 2(g).

[3] Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act, 43 FR 55978 (Nov. 23, 1978).

[4] 44 FR 873 (Jan. 3, 1979).

[5] 51 FR 15618 (Apr. 25, 1986) (amending 40 CFR 1502.22).

[6] 85 FR 43304 (July 16, 2020).

[7] CEQ, Memorandum for Heads of Federal Departments and Agencies, *Implementation of Updated National Environmental Policy Act Regulations* (July 16, 2020), *https://ceq.doe.gov/docs/laws-regulations/memo-implementation-updated-regs-2020-07-16-withdrawn.pdf; Budget and Management Guidance on Updates to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act,* M–21–01 (Nov. 2, 2020), *https://www.whitehouse.gov/wp-content/uploads/2020/11/M-21-01.pdf.*

[8] 86 FR 7037 (Jan. 25, 2021).

[9] White House Fact Sheet: List of Agency Actions for Review (Jan. 20, 2021), *https://www.whitehouse.gov/briefing-room/statements-releases/2021/01/20/fact-sheet-list-of-agency-actions-for-review/.*

[10] 86 FR 7619, 7622 (Feb. 1, 2021).

[11] *Id.* § 213(a).

additional changes to CEQ's NEPA regulations that would need to be reflected in agency procedures. This additional period of time will address these concerns and allow Federal agencies to avoid wasting resources developing procedures based upon regulations that CEQ may repeal or substantially amend.

Following this rulemaking, CEQ will initiate further rulemaking to propose amendments to the 2020 Rule to revise the NEPA implementing regulations to comply with the statute's text and goals; provide regulatory certainty to stakeholders; promote better decision making consistent with NEPA's statutory requirements; ensure appropriate coordination among Federal agencies, and State, Tribal, and local governments during the environmental review process; and meet environmental, climate change, and environmental justice objectives.

Extending the deadline in § 1507.3(b) without first seeking comment is appropriate for two reasons. First, this amendment is a rule ''of agency organization, procedure, or practice'' exempted from the Administrative Procedure Act's (APA's) notice and comment rulemaking procedures and the requirement that substantive rules be published in the **Federal Register** thirty days before the effective date. *See* 5 U.S.C. 553(b)(A), (d). Such procedural rules ''are 'primarily directed toward improving the efficient and effective operations of an agency, not toward a determination of the rights [or] interests of affected parties.' '' *Mendoza* v. *Perez,* 754 F.3d 1002, 1023 (D.C. Cir. 2014) (*quoting Batterton* v. *Marshall,* 648 F.2d 694, 702 n. 34 (D.C.Cir.1980)). In addressing rules of agency organization, procedure, or practice, ''Congress intended . . . to distinguish between rules affecting different subject matters—the rights or interests of regulated parties, and agencies' internal operations.'' *Air Transp. Ass'n of Am.* v. *Dep't of Transp.,* 900 F.2d 369, 378 (D.C. Cir. 1990), *vacated,* 498 U.S. 1077, 111 S. Ct. 944, 112 L. Ed. 2d 1033 (1991), and *vacated,* 933 F.2d 1043 (D.C. Cir. 1991) (internal quotations and citations omitted). Providing Federal agencies with additional time to prepare and propose their own NEPA implementing regulations does not ''encode[] a substantive value judgment,'' *Public Citizen* v. *Dep't of State,* 276 F3.3d 634, 641 (D.C. Cir. 2002) (quoting *JEM Broadcasting Co.* v. *FCC,* 22 F3d. 320, 327–28 (D.C. Cir. 1994), but rather merely avoids the wasted resources that could occur by requiring Federal agencies to propose revisions to their regulations before CEQ has completed its review. *See also, e.g., Elec. Priv. Info. Center* v. *U.S. Dep't of Homeland Sec.,* 653 F.3d 1, 5–6 (D.C. Cir. 2011); *Aulenback, Inc. v Fed. Highway Admin.,* 103 F.3d 156, 169 (D.C. Cir. 1997).

The purely procedural character of extending the time provided by § 1507.3(b) is reinforced by the fact that this provision only sets forth the deadline for Federal agencies to propose procedural revisions, rather than to finalize those revisions, and therefore has no substantive effect. Because § 1507.3(b) merely establishes an internal government deadline for Federal agencies to propose revisions to that agency's internal NEPA procedures, CEQ has determined that amending that deadline fits within the category of procedural rules exempted from notice-and-comment rulemaking. CEQ nonetheless invites comments on this determination.

Second, even if extending the deadline in 40 CFR 1507.3(b) is not an exempted procedural rule, CEQ has good cause to issue an interim final rule. The APA authorizes agencies to issue regulations without notice and public comment when an agency finds, for good cause, that notice and comment is ''impracticable, unnecessary, or contrary to the public interest,'' 5 U.S.C. 553(b)(B), and to make the rule effective immediately for good cause. 5 U.S.C. 553(d)(3). As discussed, 40 CFR 1507.3(b) requires agencies to submit proposals to implement the 2020 Rule within 12 months of September 14, 2020, and section 1507.3(b)(1) requires Federal agencies to consult with CEQ while developing proposals. To meet that deadline, agencies must therefore budget and devote funds and other resources for the revision of procedures in an expedited manner. CEQ also would have to expend its limited resources reviewing Federal agencies' proposed implementing procedures before CEQ completes its review of the 2020 Rule and adopts any amendments. Prior to President Biden issuing E.O. 13990 and E.O. 14008, which initiated CEQ's comprehensive review of the 2020 Rule, only the U.S. Department of Transportation (DOT) had published proposed procedures in the **Federal Register** for public comment after consulting with CEQ as required by 40 CFR 1507.3(b)(1). CEQ estimates that at least 85 more agencies must comply with the deadline established by 40 CFR 1507.3(b).

It is impracticable to amend the deadline in 40 CFR 1507.3(b) through an ordinary notice and comment process because there is not enough time to conduct an adequate public comment process and complete the rulemaking before the September 14, 2021, deadline and, even if CEQ could finalize amendment of this provision before September 14, 2021, Federal agencies would already have devoted significant resources to preparing their revised procedures. Given the extensive changes made to the NEPA regulations in the 2020 Rule, the proposed revisions to agency NEPA procedures called for in 40 CFR 1507.3 may be substantial and require significant lead time for agencies to complete before September 14, 2021, underscoring the impracticability of proceeding through ordinary notice and comment. The development of agency NEPA procedures typically involves significant coordination internal to the agency, especially when large Departments have multiple agencies within them. Additionally, the consultation process with CEQ involves discussions both during the agencies' development of their procedures as well as a formal review process where CEQ provides comments and agencies make additional revisions to their proposals before the agency issues them for public comment. As described above, only DOT published proposed procedures to satisfy the directive of 40 CFR 1507.3 between the time that the 2020 Rule was promulgated on July 16, 2020 and January 20, 2021, when E.O. 13990 directed CEQ to commence a review of the 2020 Rule, which evidences the significant investment of time and resources required for agencies to develop proposed implementing procedures. For this same reason, keeping the September 14, 2021, deadline without immediate action is contrary to the public interest because it would result in Federal agencies' wasteful expenditure of their resources and personnel to develop proposed procedures to implement a rule that CEQ is reviewing and intends to revise.

Finally, CEQ finds that it is unnecessary to accept comment before taking this action because extending the deadline for Federal agencies to propose implementing procedures will have no impact on the public. *See, e.g., Mack Trucks, Inc.* v. *EPA,* 682 F.3d 87, 94 (D.C. Cir. 2012). Additionally, CEQ accepted public comment on this 12-month deadline before promulgating the 2020 Rule, and the extension of the deadline involves similar issues (the need for time for agencies to update their procedures following changes to CEQ regulations). *See, e.g., Priests for Life* v. *U.S. Dep't of Health & Human Servs.,* 772 F.3d 229, 276 (D.C. Cir. 2014), vacated and remanded sub nom. *Zubik* v. *Burwell,* 136 S. Ct. 1557 (2016).

Furthermore, OMB, the agency with oversight responsibility on regulatory processes, also has reached the conclusion that requiring agencies to report on their progress towards the September 14, 2021 deadline would be inconsistent with the Administration's policies.[12]

CEQ invites comment on this rule's amendment of § 1507.3(b) to extend by 2 years the period of time Federal agencies have to propose implementing procedures that conform with the 2020 Rule, and CEQ's bases for issuing this amendment as an interim final rule. CEQ will consider comments it receives and take further action, if appropriate.

III. Rulemaking Analyses and Notices

A. Regulatory Procedures

Under the APA, an agency may waive notice and comment procedures if an action is an interpretative rule, a general statement of policy, or a rule of agency organization, procedure, or practice. *See* 5 U.S.C. 553(b)(A). As discussed in section II, CEQ has determined that this rule is a rule of ''agency organization, procedure, or practice'' and, therefore, CEQ is not required to engage in a notice and comment rulemaking process. Furthermore, because the rule is a procedural rule, rather than a substantive rule, it may be made effective immediately upon publication. *See* 5 U.S.C. 553(d).

B. E.O. 12866, Regulatory Planning and Review, and E.O. 13563, Improving Regulation and Regulatory Review

E.O. 12866 provides that OIRA will review all significant rules. E.O. 13563 reaffirms the principles of E.O. 12866, calling for improvements in the Federal Government's regulatory system to promote predictability, reduce uncertainty, and use the best, most innovative, and least burdensome tools for achieving regulatory objectives. OMB determined that this final rule does not meet the requirements for a significant regulatory action under E.O. 12866, as supplemented by E.O. 13563, and therefore it was not subject to review.

C. Regulatory Flexibility Act and E.O. 13272, Proper Consideration of Small Entities in Agency Rulemaking

The Regulatory Flexibility Act, as amended, (RFA), 5 U.S.C. 601 *et seq.,* and E.O. 13272 [13] require agencies to assess the impacts of proposed and final rules on small entities. Under the RFA, small entities include small businesses, small organizations, and small governmental jurisdictions. An agency must prepare an Initial Regulatory Flexibility Analysis (IRFA) unless it determines and certifies that a proposed rule, if promulgated, would not have a significant economic impact on a substantial number of small entities. 5 U.S.C. 605(b). This interim rule does not directly regulate small entities. Rather, the rule applies to Federal agencies and sets forth the process for their compliance with NEPA. Accordingly, CEQ hereby certifies that this interim final rule will not have a significant economic impact on a substantial number of small entities.

D. National Environmental Policy Act

Under the CEQ regulations, major Federal actions may include regulations. When CEQ issued regulations in 1978, it prepared a ''special environmental assessment'' for illustrative purposes pursuant to E.O. 11991. 43 FR 25230, 25232 (June 9, 1978). The NPRM for the 1978 Rule stated ''the impacts of procedural regulations of this kind are not susceptible to detailed analysis beyond that set out in the assessment.'' *Id.* Similarly, in 1986, although CEQ stated in the final rule that there were ''substantial legal questions as to whether entities within the Executive Office of the President are required to prepare environmental assessments,'' it also prepared a special environmental assessment. 51 FR 15618, 15619 (Apr. 25, 1986). The special environmental assessment issued in 1986 made a finding of no significant environmental impact, and there was no finding made for the assessment of the 1978 Rule. CEQ has similarly developed a special environmental assessment for this rule and made a finding of no significant impact, and included them in the docket for this rulemaking.

E. E.O. 13132, Federalism

E.O. 13132 requires agencies 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.[14] Policies that have federalism implications 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. CEQ does not anticipate that this interim final rule has federalism implications because it applies to Federal agencies, not States.

F. E.O. 13175, Consultation and Coordination With Indian Tribal Governments

E.O. 13175 requires agencies to have a process to ensure meaningful and timely input by Tribal officials in the development of policies that have Tribal implications.[15] Such policies include regulations that have substantial direct effects on one or more Indian Tribes, 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. The Presidential Memorandum of January 26, 2021 on Tribal Consultation and Strengthening Nation-to-Nation Relationships reaffirms the provisions of E.O. 13175 and directs Federal agencies to develop an action plan to implement E.O. 13175. CEQ adopted an Action Plan for Consultation and Coordination with Tribal Nations on April 26, 2021, to direct CEQ's actions to identify policies with Tribal implications and ensure sustained and meaningful consultation. This interim final rule is not a regulatory policy that has Tribal implications because it merely extends the time by which Federal agencies have to propose updates to their NEPA implementing procedures.

G. E.O. 12898, Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations

E.O. 12898 requires agencies to make achieving environmental justice part of their missions by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of agency programs, policies, and activities, including rulemakings, on minority populations and low-income populations.[16] This interim final rule would extend the deadline by which agencies have to submit proposals for changes to their NEPA procedures. Submitting a proposal for changes to the NEPA procedures does not change the manner in which Federal agencies implement NEPA; agencies would still need to subject those procedures to notice and comment and then issue final procedures. Therefore, submitting a proposal does not have adverse human health or environmental effects. CEQ

[12] *See Revocation of OMB Memorandum M–21–01, ''Budget and Management Guidance on Updates to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act''*, M–21–23 (Apr. 26, 2021), *https://www.whitehouse.gov/wp-content/uploads/2021/04/M-21-23.pdf.*

[13] 67 FR 53461 (Aug. 16, 2002).

[14] 64 FR 43255 (Aug. 10, 1999).

[15] 65 FR 67249 (Nov. 9, 2000).

[16] 59 FR 7629 (Feb. 16, 1994).

has determined, therefore, that this interim final rule would not cause disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.

H. E.O. 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use

Agencies must prepare a Statement of Energy Effects for significant energy actions under E.O. 13211.[17] This interim final rule is not a ''significant energy action'' because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy.

I. E.O. 12988, Civil Justice Reform

Under section 3(a) of E.O. 12988,[18] agencies must review their proposed regulations to eliminate drafting errors and ambiguities, draft them to minimize litigation, and provide a clear legal standard for affected conduct. Section 3(b) provides a list of specific issues that agencies should consider when conducting the reviews required by section 3(a). CEQ has conducted this review and determined that this interim final rule complies with the requirements of E.O. 12988.

J. Unfunded Mandate Reform Act

Section 201 of the Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531) requires Federal agencies to assess the effects of their regulatory actions on State, Tribal, and local governments, and the private sector to the extent that such regulations incorporate requirements specifically set forth in law. Before promulgating a rule that may result in the expenditure by a State, Tribal, or local government, in the aggregate, or by the private sector of $100 million, adjusted annually for inflation, in any 1 year, an agency must prepare a written statement that assesses the effects on State, Tribal, and local governments and the private sector. 2 U.S.C. 1532. This interim final rule applies to Federal agencies and would not result in expenditures of $100 million or more for State, Tribal, and local governments, in the aggregate, or the private sector in any 1 year. This action also does not impose any enforceable duty, contain any unfunded mandate, or otherwise have any effect on small governments subject to the requirements of 2 U.S.C. 1531–1538.

K. Paperwork Reduction Act

This interim final rule does not impose any new information collection burden that would require additional review or approval by OMB under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.*

List of Subjects in 40 CFR Part 1507

Administrative practice and procedure, Environmental impact statements, Environmental protection, Natural resources.

Dated: June 22, 2021.

Brenda Mallory,

Chair.

For the reasons stated in the preamble, the Council on Environmental Quality amends part 1507 in title 40 of the Code of Federal Regulations to read as follows:

PART 1507—AGENCY COMPLIANCE

■ 1. The authority citation for part 1507 continues to read as follows:

Authority: 42 U.S.C. 4321–4347; 42 U.S.C. 4371–4375; 42 U.S.C. 7609; E.O. 11514, 35 FR 4247, 3 CFR, 1966–1970, Comp., p. 902, as amended by E.O. 11991, 42 FR 26967, 3 CFR, 1977 Comp., p. 123; and E.O. 13807, 82 FR 40463, 3 CFR, 2017, Comp., p. 369.

■ 2. Amend § 1507.3 by revising the first sentence of paragraph (b) introductory text to read as follows:

§ 1507.3 Agency NEPA procedures.

* * * * *

(b) No more than 36 months after September 14, 2020, or 9 months after the establishment of an agency, whichever comes later, each agency shall develop or revise, as necessary, proposed procedures to implement the regulations in this subchapter, including to eliminate any inconsistencies with the regulations in this subchapter.

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[FR Doc. 2021–13770 Filed 6–28–21; 8:45 am]

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FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 73

[MB Docket No. 21–127; RM–11894; DA 21–700; FR ID 34398]

Television Broadcasting Services Schenectady, New York

AGENCY: Federal Communications Commission (FCC).

ACTION: Final rule.

SUMMARY: On April 5, 2021, the Media Bureau, Video Division (Bureau) issued a *Notice of Proposed Rulemaking* (*NPRM*) in response to a petition for rulemaking filed by WRGB Licensee, LLC (Petitioner), the licensee of WRGB, channel 6 (CBS), Schenectady, New York, requesting the substitution of channel 35 for channel 6 at Schenectady in the DTV Table of Allotments. For the reasons set forth in the *Report and Order* referenced below, the Bureau amends FCC regulations to substitute channel 35 for channel 6 at Schenectady.

DATES: Effective June 29, 2021.

FOR FURTHER INFORMATION CONTACT: Joyce Bernstein, Media Bureau, at (202) 418–1647 or *Joyce.Bernstein@fcc.gov.*

SUPPLEMENTARY INFORMATION: This is a synopsis of the Commission's *Report and Order,* MB Docket No. 21–127; RM–11894; DA 21–700, adopted and released on June 16, 2021. The full text of this document is available for download on the FCC's website at *https://docs.fcc.gov/public/attachments/DA-21-700A1.pdf.* To request materials in accessible formats for people with disabilities (braille, large print, electronic files, audio format), send an email to *fcc504@fcc.gov* or call the Consumer & Governmental Affairs Bureau at 202–418–0530 (voice), 202–418–0432 (tty).

The proposed rule was published at 86 FR 21681 on April 23, 2021. The Petitioner filed comments in support of the petition reaffirming its commitment to apply for channel 35. No other comments were filed. The Petitioner states that VHF channels have certain propagation characteristics which may cause reception issues for some viewers. In addition, WRGB has received numerous complaints from viewers unable to receive the Station's over-the-air signal, despite being able to receive signals from other stations. While the proposed channel 35 noise limited contour does not completely encompass the relevant channel 6 noise limited contour, WRGB is a CBS affiliate and there are three other CBS affiliated stations that serve some portion of the loss area. In addition, the Petitioner submitted an analysis, using the Commission's *TVStudy* software analysis program, demonstrating that, after taking into account service provided by other CBS stations, all of the population located within WRGB's original post-DTV transition channel 6 noise limited contour will continue to receive CBS service, except for 30 people, a number the Commission considers *de minimis.* As the Bureau explained in the *NPRM,* it used the technical parameters of WRGB's original post-transition digital channel 6 facility (File No. BPCDT–20080307AAK) in

[17] 66 FR 28355 (May 22, 2001).

[18] 61 FR 4729 (Feb. 7, 1996).

determining any predicted loss which may occur.

This document does not contain information collection requirements subject to the Paperwork Reduction Act of 1995, Public Law 104–13. In addition, therefore, it does not contain any proposed information collection burden ''for small business concerns with fewer than 25 employees,'' pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107–198, *see* 44 U.S.C. 3506(c)(4). Provisions of the Regulatory Flexibility Act of 1980, 5 U.S.C. 601–612, do not apply to this proceeding.

The Commission will send a copy of this *Report and Order* in a report to be sent to Congress and the Government Accountability Office pursuant to the Congressional Review Act, *see* 5 U.S.C. 801(a)(1)(A).

List of Subjects in 47 CFR Part 73

Television.

Federal Communication Commission.

Thomas Horan,

Chief of Staff, Media Bureau.

Final Rules

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR part 73 as follows:

PART 73—RADIO BROADCAST SERVICES

■ 1. The authority citation for part 73 continues to read as follows:

Authority: 47 U.S.C. 154, 155, 301, 303, 307, 309, 310, 334, 336, 339.

■ 2. In § 73.622(i), amend the Post-Transition Table of DTV Allotments, under New York, by revising the entry for Schenectady to read as follows:

§ 73.622 Digital television table of allotments.

* * * * *

(i) * * *

Community	Channel No.
* * * * *	
NEW YORK	
* * * * *	
Schenectady	*34, 35, 43
* * * * *	

[FR Doc. 2021–13812 Filed 6–28–21; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 622

[Docket No. 210623–0136]

RIN 0648–BK34

Fisheries of the Caribbean, Gulf of Mexico, and South Atlantic; Reef Fish Fishery of the Gulf of Mexico; Gray Triggerfish Management Measures

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Final rule.

SUMMARY: NMFS issues regulations to implement management measures described in a framework action to the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico (FMP), as prepared by the Gulf of Mexico Fishery Management Council (Council). This final rule modifies catch limits in the Gulf of Mexico (Gulf) exclusive economic zone (EEZ) for gray triggerfish. The purpose of this final rule and the framework action is to modify the catch limits, as applicable, consistent with the most recent interim analysis for gray triggerfish and to achieve optimum yield (OY) for the stock.

DATES: This final rule is effective July 29, 2021.

ADDRESSES: Electronic copies of the framework action, which includes an environmental assessment, a regulatory impact review, and a Regulatory Flexibility Act analysis, may be obtained from the Southeast Regional Office website at *https://www.fisheries.noaa.gov/action/framework-action-modification-gray-triggerfish-catch-limits.*

FOR FURTHER INFORMATION CONTACT: Kelli O'Donnell, Southeast Regional Office, NMFS, telephone: 727–824–5305, email: *Kelli.ODonnell@noaa.gov.*

SUPPLEMENTARY INFORMATION: The Gulf reef fish fishery, which includes gray triggerfish, is managed under the FMP. The FMP was prepared by the Council and is implemented by NMFS through regulations at 50 CFR part 622 under the authority of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

On April 21, 2021, NMFS published a proposed rule for the framework action and requested public comment (86 FR 20649). The proposed rule and the framework action outline the rationale for the actions contained in this final rule, which is unchanged from the proposed rule. A summary of the management measures described in the framework action and implemented by this final rule is described below. All weights in the final rule are described in round weight.

Background

The Magnuson-Stevens Act requires NMFS and regional fishery management councils to prevent overfishing and to achieve, on a continuing basis, the OY from federally managed fish stocks to ensure that fishery resources are managed for the greatest overall benefit to the nation, particularly with respect to providing food production and recreational opportunities, and protecting marine ecosystems.

Gray triggerfish in the Gulf EEZ are managed using both commercial and recreational sector measures with each sector having its own annual catch limit (ACL) and annual catch target (ACT). The sector allocation of the stock ACL, which equals the acceptable biological catch (ABC), is 21 percent commercial and 79 percent recreational and was implemented in 2008 through Amendment 30A to the FMP (73 FR 38139; July 3, 2008). Inseason accountability measures (AMs) for gray triggerfish specify that if commercial or recreational landings meet or are projected to meet the respective sector's ACT, that sector will close for the remainder of the fishing year. For the commercial sector, the post-season AM specifies that if the commercial ACL is exceeded despite the quota closure, then the following fishing year's commercial ACL and ACT (commercial quota) will be reduced by the amount of the prior year's commercial ACL overage. For the recreational sector, if the recreational ACL is exceeded and gray triggerfish are overfished, then in the following fishing year the recreational ACL and ACT would be reduced by the amount of the ACL overage in the prior fishing year. The current gray triggerfish ACLs, ACTs (set at 5 percent and 10 percent less than the commercial and recreational sector ACLs, respectively), and inseason AMs for both sectors and the post season AM for the recreational sector, were established in 2013, through Amendment 37 to the FMP (78 FR 27084; May 9, 2013). The postseason AM for the commercial sector was established in 2008, through Amendment 30A to the FMP (73 FR 38139).

The most recent Southeast Data, Assessment, and Review (SEDAR) stock assessment for gray triggerfish was completed and reviewed by the

Council's Scientific and Statistical Committee (SSC) in October 2015 (SEDAR 43). SEDAR 43 indicated that the gray triggerfish stock was not experiencing overfishing but remained overfished and would not be rebuilt by the end of 2017 as previously projected. As a result of SEDAR 43, the Council's SSC made recommendations for an increased overfishing limit (OFL) based on a fixed maximum fishing mortality threshold, which is independent of rebuilding, and ABCs based on an 8, 9, or 10-year rebuilding timeline. Because of the stock not rebuilding as anticipated, the Council decided not to change the ABC, sector ACLs, and sector ACTs set by Amendment 37 but to change the rebuilding timeline to rebuild the stock by 2025. Amendment 46 implicitly adopted the SSC's recommendations for an increased OFL by including alternatives with an ABC that was higher than the *status quo* OFL. Amendment 44 to the FMP, implemented in 2017 (82 FR 61488; December 28, 2017), updated the stock status to not overfished but did not revise the sector ACLs or ACTs.

Between 2012 and 2019, the commercial sector has exceeded its ACL of 64,100 lb (29,075 kg), two times, in both 2012 and 2018. During that same timeframe, the recreational sector has exceeded its ACL of 241,200 lb (109,406 kg), five times, in 2012, 2013, 2016, 2018, and 2019.

At its September 2020 meeting, the Council's SSC accepted a 2020 gray triggerfish interim analysis conducted by the NMFS Southeast Fisheries Science Center (SEFSC). Unlike full SEDAR stock assessments, interim analyses are designed to occur between regular SEDAR assessments to determine trends in stock condition and project future catch advice. While interim analyses take less time to complete, they cannot be used to determine if a stock is making progress towards rebuilding. Based on the interim analysis, abundance trends of the Gulf gray triggerfish stock suggest an increase in biomass that could support a greater harvest. The Council's SSC determined the interim analysis was suitable for providing ABC catch advice through 2023. From the interim analysis, the Council's SSC recommended the gray triggerfish stock ABC be increased to 456,900 lb (207,246 kg), for 2021 and subsequent fishing years, with the request that another interim analysis be completed in 2023. The Council's SSC previously recommended an increased OFL (1,220,000 lb (553,383 kg)) that was implicitly adopted by Amendment 46 and was not examined by this interim analysis.

In January 2021, the Council took final action on this framework action, consistent with the most recent interim analysis for gray triggerfish, and recommendations from the Council's SSC, the SEFSC, and the Council's Reef Fish Advisory Panel (Reef Fish AP) to increase the commercial and recreational catch limits for Gulf gray triggerfish, in order to achieve OY consistent with the requirements of the Magnuson-Stevens Act.

Management Measures Contained in This Final Rule

This final rule revises the commercial and recreational ACLs and ACTs consistent with the interim analysis and the Council's SSC, SEFSC, and the Council's Reef Fish AP recommendations.

Commercial ACL and ACT

This final rule increases the Gulf gray triggerfish commercial ACL from 64,100 lb (29,075 kg), to 95,949 lb (43,522 kg), for the 2021, and subsequent fishing years based on the current ACL sector allocation of 21 percent commercial. To determine the ACT, the Council used its ACL/ACT control rule to determine the buffer to be applied to the commercial ACL to account for updated information. Application of the control rule indicated that an 8 percent buffer is appropriate between the commercial ACL and ACT. This is an increase from the current buffer of 5 percent. Using a more recent time series, the control rule yielded a larger buffer as a result of the number of times sector landings exceeded the commercial ACL, current stock status (the stock is rebuilding), and the precision of landings data. The 8 percent buffer applied to the commercial ACL, revises the commercial ACT (commercial quota) from 60,900 lb (27,624 kg) to 88,273 lb (40,040 kg), for the 2021, and subsequent fishing years. The increased buffer between the commercial ACL and ACT is expected to reduce the risk of the commercial sector exceeding its ACL and to reduce the likelihood of overfishing the gray triggerfish stock. NMFS notes that the commercial sector has never exceeded the commercial ACL that is being implemented by this rule.

Recreational ACL and ACT

This final rule increases the Gulf gray triggerfish recreational ACL from 241,200 lb (109,406 kg) to 360,951 lb (163,725 kg), for the 2021 and subsequent fishing years based on the ACL recreational sector allocation of 79 percent. To determine the new recreational ACT, the ACL/ACT control rule was applied to determine the buffer between the ACL and ACT using updated information. The control rule yielded a 24 percent buffer, an increase from the current 10 percent buffer. The buffer increased because of past ACL overages, current stock status (the stock is rebuilding), the application of a more recent time series, and the precision of landings data. When the 24 percent buffer is applied to the new recreational ACL, the ACT is increased from 217,100 lb (98,475 kg) to 274,323 lb (124,431 kg), for the 2021 and subsequent fishing years.

NMFS notes that recreational landings in the 2013, 2016, and 2018 fishing years have exceeded the recreational ACL implemented in this rule. The increased buffers between the recreational ACL and ACT are expected to reduce the risk of the recreational sector exceeding its ACL, and to reduce the likelihood of overfishing the gray triggerfish stock.

Measure in the Framework Action But Not Codified in This Final Rule

In addition to the other measures contained in this final rule, the framework action also revises the Gulf gray triggerfish stock ABC. As a result of the gray triggerfish interim analysis, and the recommendation of the Council's SSC, the framework action increases the Gulf gray triggerfish stock ABC from 305,300 lb (138,482 kg), to 456,900 lb (207,246 kg). The stock ACL remains equal to the stock ABC. A buffer between the stock ABC and ACL was not recommended by the Council's Reef Fish AP so as to retain the Council's current management approach for gray triggerfish, which is to set the stock ACL equal to the ABC. In addition, the increased ABC is 37.5 percent of the OFL (1,220,000 lb (553,383 kg). This large difference between the ABC and OFL reduces the risk of overfishing of the gray triggerfish stock.

Comments and Responses

NMFS received a total of 13 comments on the proposed rule for the framework action. Most comments supported the measures for Gulf gray triggerfish in the proposed rule and framework action. Some comments suggested changes to gray triggerfish management measures that were outside the scope of the proposed rule and framework action, such as increasing the recreational season length, increasing the recreational bag limit, increasing the commercial trip limit, reducing the minimum size limits, or gleaning bycatch within the gray

triggerfish portion of the reef fish fishery; therefore, these comments are not addressed further in this final rule. Specific comments related to the proposed rule and the framework action are grouped by topic and addressed below.

Comment 1: The commercial and recreational catch limits for gray triggerfish in the Gulf should remain the same and not be increased.

Response: NMFS disagrees. Maintaining the current ACLs and ACTs is not consistent with the requirements of the Magnuson-Stevens Act to establish catch limits that achieve OY. The previous commercial ACL of 64,100 lb (29,075 kg), the recreational ACL of 241,200 lb (109,406 kg), the commercial ACT of 60,900 lb (27,624 kg), and the recreational ACT of 217,100 lb (98,475 kg) have been in effect since 2013 (78 FR 27084; May 9, 2013). In 2015, the results of SEDAR 43 found that the Gulf gray triggerfish stock OFL and ABC could be increased. The Council's SSC subsequently recommended these same increases. However, the Council at that time decided not to change the stock ABC, sector ACLs, or sector ACTs. In 2020, the Council's SSC accepted a 2020 gray triggerfish interim analysis, which determined that abundance trends of the Gulf gray triggerfish stock suggested an increase in biomass that could support additional harvest and was suitable for providing ABC catch advice through 2023. The Council accepted the SSC's recommendation for an increase to the ABC and subsequently approved revised sector ACLs based on the current allocation, in order to achieve OY consistent with the requirements of the Magnuson-Stevens Act. The Council's ACL/ACT control rule was used to set new increased buffers between each sector's ACL and ACT to reduce the likelihood of overfishing. Therefore, maintaining the previous catch limits would not serve the purpose of this rule, which is to achieve OY while reducing the likelihood of overfishing. The Gulf gray triggerfish stock is not currently overfished or undergoing overfishing as determined by SEDAR 43, the implementation of Amendment 44 to the FMP (82 FR 61488; December 28, 2017), and the most recent quarterly report on the status of the stocks.

Comment 2: The gray triggerfish population is still being overfished and any increases to the catch limits increases the risks to the stock and healthy oceans.

Response: NMFS disagrees that the gray triggerfish population is still overfished. In 2020, the most recent Gulf gray triggerfish interim analysis index of abundance trends suggested that the gray triggerfish biomass has increased in recent years. This additional biomass should support additional removals from the stock as related to the increases to the commercial and recreational ACLs and ACTs in this final rule. While the interim analysis was not able to provide a biomass estimate, the gray triggerfish stock is not considered to be overfished or undergoing overfishing. As described in the framework action, the catch limit increases in this final rule are based on the findings of the interim analysis, which is deemed by the Council's SSC as suitable for management advice and the use of the Council's ACL/ACT control rule, and best available science.

Classification

Pursuant to section 304(b)(3) of the Magnuson-Stevens Act, the NMFS Assistant Administrator has determined that this final rule is consistent with the framework action, the FMP, other provisions of the Magnuson-Stevens Act, and other applicable laws.

This final rule has been determined to be not significant for purposes of Executive Order 12866.

The Magnuson-Stevens Act provides the legal basis for this final rule. No duplicative, overlapping, or conflicting Federal rules have been identified. In addition, no new reporting and record-keeping requirements are introduced by this final rule. This final rule contains no information collection requirements under the Paperwork Reduction Act of 1995. A description of this final rule, why it is being considered, and the purposes of this final rule are contained in the preamble and in the **SUMMARY** section of this final rule.

The Chief Counsel for Regulation of the Department of Commerce certified to the Chief Counsel for Advocacy of the Small Business Administration during the proposed rule stage that this action would not have a significant economic impact on a substantial number of small entities. The factual basis for the certification was published in the proposed rule and is not repeated here. No comments were received regarding this certification. As a result, a regulatory flexibility analysis was not required and none was prepared.

List of Subjects in 50 CFR Part 622

Annual catch limit, Fisheries, Fishing, Gray triggerfish, Gulf, Reef fish, Quota.

Dated: June 23, 2021.

Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

For the reasons set out in the preamble, 50 CFR part 622 is amended as follows:

PART 622—FISHERIES OF THE CARIBBEAN, GULF OF MEXICO, AND SOUTH ATLANTIC

■ 1. The authority citation for part 622 continues to read as follows:

Authority: 16 U.S.C. 1801 *et seq.*

■ 2. In § 622.39, revise paragraph (a)(1)(vi) to read as follows:

§ 622.39 Quotas.

* * * * *

(a) * * *

(1) * * *

(vi) Gray triggerfish—88,273 lb (40,040 kg), round weight.

* * * * *

■ 3. In § 622.41, revise the last sentence of paragraph (b)(1) and paragraph (b)(2)(iii) to read as follows:

§ 622.41 Annual catch limits (ACLs), annual catch targets (ACTs), and accountability measures (AMs).

* * * * *

(b) * * *

(1) * * * The commercial ACL is 95,949 lb (43,522 kg), round weight.

(2) * * *

(iii) The recreational ACL for gray triggerfish is 360,951 lb (163,725 kg), round weight. The recreational ACT for gray triggerfish is 274,323 lb (124,431 kg), round weight.

* * * * *

[FR Doc. 2021–13807 Filed 6–28–21; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

50 CFR Part 660

[Docket No. 210505–0101; RTID 0648–XB156]

Fisheries Off West Coast States; Modification of the West Coast Commercial Salmon Fisheries; Inseason Action #17

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Inseason modification of 2021 management measures.

SUMMARY: NMFS announces an inseason action in the 2021 ocean salmon fisheries. These inseason actions modified the commercial salmon fisheries in the area from the U.S./Canada border to Cape Falcon, OR.

DATES: This inseason action became applicable on June 3, 2021, and remains in effect until superseded or modified.

FOR FURTHER INFORMATION CONTACT: Peggy Mundy at 206–526–4323, Email: *peggy.mundy@noaa.gov.*

SUPPLEMENTARY INFORMATION:

Background

In the 2021 annual management measures for ocean salmon fisheries (86 FR 26425, May 14, 2021), NMFS announced management measures for the commercial and recreational fisheries in the area from the U.S./Canada border to the U.S./Mexico border, effective from 0001 hours Pacific Daylight Time (PDT), May 16, 2021, until the effective date of the 2022 management measures, as published in the **Federal Register**. NMFS is authorized to implement inseason management actions to modify fishing seasons and quotas as necessary to provide fishing opportunity while meeting management objectives for the affected species (50 CFR 660.409). Inseason actions in the salmon fishery may be taken directly by NMFS (50 CFR 660.409(a)—Fixed inseason management provisions) or upon consultation with the Chairman of the Pacific Fishery Management Council (Council) and the appropriate State Directors (50 CFR 660.409(b)—Flexible inseason management provisions).

Management of the salmon fisheries is generally divided into two geographic areas: North of Cape Falcon (NOF) (U.S./Canada border to Cape Falcon, OR), and south of Cape Falcon (Cape Falcon, OR, to the U.S./Mexico border). The actions described in this document affected the NOF commercial salmon fishery as set out under the heading.

Inseason Action

Reason and Authorization for Inseason Action #17

The fishery affected by the inseason action described below was authorized in the final rule for 2021 annual management measures for ocean salmon fisheries (86 FR 26425, May 14, 2021). The 2021 annual management measures established a May-June commercial salmon fishery that includes subarea quotas for the areas from the U.S./Canada border to Queets River, WA (5,680 Chinook salmon), and the area from Leadbetter Point, WA, to Cape Falcon, OR (4,195 Chinook salmon). Data for the first half of this fishery indicate that both effort and catch are well below preseason expectations. Through June 2, 2021, 850 Chinook salmon were landed in the area from the U.S./Canada border to Queets River (15 percent of the subarea quota), and 22 Chinook salmon were landed in the area from Leadbetter Point to Cape Falcon (0.5 percent of the subarea quota).

The NMFS West Coast Regional Administrator (RA) considered the landings of Chinook salmon in the NOF commercial salmon fishery, fishery effort occurring to date as well as anticipated under the proposal, quotas set preseason, and the Chinook salmon quota remaining. The RA determined that the inseason action described below was necessary to increase access to available Chinook salmon quota and meet management goals set preseason. The modification of limited retention regulations is authorized by 50 CFR 660.409(b)(1)(ii).

Consultation on this inseason action occurred on June 3, 2021. Representatives from NMFS, Washington Department of Fish and Wildlife, Oregon Department of Fish and Wildlife, and Council staff participated in the consultation.

Inseason Action

Inseason Action #17

Description of the action: Inseason action #17 increased the Chinook salmon landing limit in the May–June non-tribal commercial ocean salmon fishery from the U.S./Canada border to Queets River, and from Leadbetter Point to Cape Falcon from 75 Chinook salmon per vessel per landing week (Thursday through Wednesday) to 100 Chinook salmon per vessel per landing week (Thursday through Wednesday).

Effective dates: Inseason action #17 took effect on Thursday, June 3, 2021, the first day of the Thursday through Wednesday landing week, and remains in effect until superseded. This inseason action was announced on NMFS' telephone hotline and U.S. Coast Guard radio broadcast on June 3, 2021 (50 CFR 660.411(a)(2)).

All other restrictions and regulations remain in effect as announced for the 2021 ocean salmon fisheries (86 FR 26425, May 14, 2021).

The RA determined that this inseason action was warranted based on the best available information on Pacific salmon abundance forecasts and anticipated fishery effort. The states manage the fisheries in state waters adjacent to the areas of the U.S. exclusive economic zone consistent with these Federal actions. As provided by the inseason notice procedures at 50 CFR 660.411, actual notice of the described regulatory action was given, prior to the time the action was effective, by telephone hotline numbers 206–526–6667 and 800–662–9825, and by U.S. Coast Guard Notice to Mariners broadcasts on Channel 16 VHF–FM and 2182 kHz.

Classification

NMFS issues these actions pursuant to section 305(d) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA). These actions are authorized by 50 CFR 660.409, which was issued pursuant to section 304(b) of the MSA, and is exempt from review under Executive Order 12866.

Pursuant to 5 U.S.C. 553(b)(3)(B), there is good cause to waive prior notice and an opportunity for public comment on these actions, as notice and comment would be impracticable and contrary to the public interest. Prior notice and opportunity for public comment on these actions was impracticable because NMFS had insufficient time to provide for prior notice, and the opportunity for public comment between the time Chinook salmon abundance, catch, and effort information was developed and fisheries impacts were calculated, and the time the fishery modifications had to be implemented in order to ensure that fisheries are managed based on the best available scientific information. As previously noted, actual notice of the regulatory action was provided to fishers through telephone hotline and radio notification. This action complies with the requirements of the annual management measures for ocean salmon fisheries (86 FR 26425, May 14, 2021), the fishery management plan (FMP), and regulations implementing the FMP under 50 CFR 660.409 and 660.411.

There is good cause under 5 U.S.C. 553(d)(3) to waive the 30-day delay in effective date, as a delay in effectiveness of these actions would allow fishing at levels inconsistent with the goals of the FMP and the current management measures.

Authority: 16 U.S.C. 1801 *et seq.*

Dated: June 24, 2021.

Jennifer M. Wallace,

Acting Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 2021–13836 Filed 6–28–21; 8:45 am]

BILLING CODE 3510–22–P

Proposed Rules

Federal Register
Vol. 86, No. 122
Tuesday, June 29, 2021

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2021–0514; Project Identifier MCAI–2020–01570–T]

RIN 2120–AA64

Airworthiness Directives; De Havilland Aircraft of Canada Limited (Type Certificate Previously Held by Bombardier, Inc.) Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for certain De Havilland Aircraft of Canada Limited Model DHC–8–400, –401, and –402 airplanes. This proposed AD was prompted by a report that the epoxy primer on the internal bore of the nacelle and landing gear attachment pins was not applied, and corrosion on the internal bore of the wing rear spar attachment pins was found. This proposed AD would require doing a detailed visual inspection of the nacelle to wing rear spar attachment pins, and the nacelle and landing gear attachment pins, for any corrosion, and doing all applicable corrective actions. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by August 13, 2021.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- *Federal eRulemaking Portal:* Go to *https://www.regulations.gov.* Follow the instructions for submitting comments.
- *Fax:* 202–493–2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- *Hand Delivery:* Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact De Havilland Aircraft of Canada Limited, Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; telephone 416–375–4000; fax 416–375–4539; email *thd@dehavilland.com;* internet *https://dehavilland.com.* You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206–231–3195.

Examining the AD Docket

You may examine the AD docket at *https://www.regulations.gov* by searching for and locating Docket No. FAA–2021–0514; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Deep Gaurav, Aerospace Engineer, Airframe and Propulsion Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516–228–7300; fax 516–794–5531; email *9-avs-nyaco-cos@faa.gov.*

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under **ADDRESSES**. Include ''Docket No. FAA–2021–0514; Project Identifier MCAI–2020–01570–T'' at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend the proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to *https://www.regulations.gov,* including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as ''PROPIN.'' The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Deep Gaurav, Aerospace Engineer, Airframe and Propulsion Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516–228–7300; fax 516–794–5531; email *9-avs-nyaco-cos@faa.gov.* Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

Transport Canada Civil Aviation (TCCA), which is the aviation authority for Canada, has issued TCCA AD CF–2020–51R1, dated February 24, 2021 (also referred to after this as the Mandatory Continuing Airworthiness Information, or the MCAI), to correct an unsafe condition for certain De Havilland Aircraft of Canada Limited Model DHC–8–400, –401, and –402 airplanes. You may examine the MCAI in the AD docket at *https://www.regulations.gov* by searching for and locating Docket No. FAA–2021–0514.

This proposed AD was prompted by a report that the epoxy primer on the internal bore of the nacelle and landing gear attachment pins was not applied, and corrosion on the internal bore of the wing rear spar attachment pins was found. The FAA is proposing this AD to

address premature corrosion and subsequent failure of the nacelle to landing gear and nacelle to rear wing spar attachment pins, which if undetected, could lead to a single or dual collapse of the main landing gear. See the MCAI for additional background information.

Related Service Information Under 1 CFR Part 51

De Havilland Aircraft of Canada Limited has issued-Service Bulletin 84–54–28, Revision B, dated January 24, 2020; and Service Bulletin 84–54–31, Revision B, dated February 21, 2020. This service information describes procedures for doing a detailed visual inspection of the nacelle to wing rear spar attachment pins, and the nacelle and landing gear attachment pins, for any corrosion; and doing all applicable corrective actions. Corrective actions include applying epoxy primer to the bore surface of the pins, a fluorescent magnetic particle inspection for any cracking, corrosion removal, reworking and part marking certain pins, and replacing any cracked or corroded pins with serviceable pins. These documents are distinct since they apply to different airplane configurations.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the **ADDRESSES** section.

FAA's Determination

This product has been approved by the aviation authority of another country, and is approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the State of Design Authority, the FAA has been notified of the unsafe condition described in the MCAI and service information referenced above. The FAA is proposing this AD because the FAA evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Proposed AD Requirements in This NPRM

This proposed AD would require accomplishing the actions specified in the service information already described.

Differences Between This Proposed AD and the MCAI or Service Information

Where Part III of TCCA CF–2020–51R1, dated February 24, 2021, specifies a detailed visual inspection and rectification of the nacelle and landing gear attachment pins, this AD requires a re-part mark of the yoke attachment pin as specified in Part B of the Accomplishment Instructions of De Havilland Service Bulletin 84–54–31, Revision B, dated February 21, 2020.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 41 airplanes of U.S. registry. The FAA estimates the following costs to comply with this proposed AD:

ESTIMATED COSTS FOR REQUIRED ACTIONS

Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Up to 9 work-hours × $85 per hour = Up to $765	$0	Up to $765	Up to $31,365.

The FAA has received no definitive data on which to base the cost estimates for the on-condition actions specified in this proposed AD.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect 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.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a ''significant regulatory action'' under Executive Order 12866,

(2) Would not affect intrastate aviation in Alaska, and

(3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

De Havilland Aircraft of Canada Limited (Type Certificate Previously Held by Bombardier, Inc.): Docket No. FAA–2021–0514; Project Identifier MCAI–2020–01570–T.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by August 13, 2021.

(b) Affected ADs

None.

(c) Applicability

This AD applies to De Havilland Aircraft of Canada Limited (type certificate previously held by Bombardier, Inc.) Model DHC–8–400, –401, and –402 airplanes, certificated in any category, serial numbers 4001, 4003 through 4550 inclusive, 4583 through 4585 inclusive, 4587, 4588, and 4590.

(d) Subject

Air Transport Association (ATA) of America Code 54, Nacelles/pylons.

(e) Unsafe Condition

This AD was prompted by a report that the epoxy primer on the internal bore of the

nacelle and landing gear attachment pins was not applied, and corrosion on the internal bore of the wing rear spar attachment pins was found. The FAA is issuing this AD to address premature corrosion and subsequent failure of the nacelle to landing gear and nacelle to rear wing spar attachment pins, which if undetected, could lead to a single or dual collapse of the main landing gear.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Inspection and Corrective Actions

(1) At the applicable compliance times specified in paragraphs (g)(1)(i) through (iii) of this AD: Do a detailed visual inspection of the nacelle to wing rear spar attachment pins, and the nacelle and landing gear attachment pins, for any cracking or corrosion, and do all applicable corrective actions, in accordance with Part A or Part B, as applicable, of Section 3., ''Accomplishment Instructions,'' of the applicable service information specified in figure 1 to paragraph (g) of this AD. Do all applicable corrective actions before further flight.

Figure 1 to paragraph (g) – *Service Information*

Serial Numbers–	Service Information–
4001, 4003 through 4550 inclusive	De Havilland Service Bulletin 84-54-28, Revision B, dated January 24, 2020
4001, 4003 through 4533 inclusive, 4583 through 4585 inclusive, 4587, 4588 and 4590	De Havilland Service Bulletin 84-54-31, Revision B, dated February 21, 2020

(i) For nacelle to wing rear spar attachment pins, or nacelle and landing gear attachment pins, as applicable, that have accumulated less than 26,000 flight cycles as of the effective date of this AD, and have been in service less than 12 years from their entry-into-service as of the effective date of this AD: Prior to the pins reaching 14 years from their entry-into-service, or prior to the airplane reaching 30,000 total flight cycles, whichever occurs first.

(ii) For nacelle to wing rear spar attachment pins, or nacelle and landing gear attachment pins, as applicable, that have accumulated 26,000 flight cycles or more as of the effective date of this AD, or have been in service 12 years or more from their entry-into-service as of the effective date of this AD: Within 4 years or 8,000 flight hours after the effective date of this AD, whichever occurs first.

(iii) For airplanes on which the actions specified in Bombardier Service Bulletin 84–54–27, dated August 11, 2017; or Bombardier Service Bulletin 84–54–28, dated August 11, 2017; as applicable, have been accomplished: Within 14 years or 30,000 flight cycles after the date of incorporation of Bombardier Service Bulletin 84–54–27, dated August 11, 2017; or Bombardier Service Bulletin 84–54–28, dated August 11, 2017; as applicable, whichever occurs first.

(2) For serial numbers 4583, 4584, 4585, 4587, 4588 and 4590: At the applicable compliance times specified in paragraphs (g)(1)(i) through (iii) of this AD, re-part mark the yoke attachment pin, in accordance with Part B of the Accomplishment Instructions of De Havilland Service Bulletin 84–54–31, Revision B, dated February 21, 2020.

(h) Credit for Previous Actions

This paragraph provides credit for actions required by paragraph (g) of this AD, if those actions were performed before the effective date of this AD using the applicable service information specified in paragraphs (h)(1) through (3) of this AD.

(1) Bombardier Service Bulletin 84–54–28, Revision A, dated April 10, 2019.

(2) Bombardier Service Bulletin 84–54–31, dated May 1, 2019.

(3) Bombardier Service Bulletin 84–54–31, Revision A, dated October 15, 2019.

(i) No Reporting Requirement

Although De Havilland Service Bulletin 84–54–28, Revision B, dated January 24, 2020; and De Havilland Service Bulletin 84–54–31, Revision B, dated February 21, 2020; specify to submit certain information to the manufacturer, this AD does not include that requirement.

(j) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) *Alternative Methods of Compliance (AMOCs):* The Manager, New York ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the manager of the certification office, send it to ATTN: Program Manager, Continuing Operational Safety, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516–228–7300; fax 516–794–5531. Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(2) *Contacting the Manufacturer:* For any requirement in this AD to obtain instructions from a manufacturer, the instructions must be accomplished using a method approved by the Manager, New York ACO Branch, FAA; or Transport Canada Civil Aviation (TCCA); or De Havilland Aircraft of Canada Limited's TCCA Design Approval Organization (DAO). If approved by the DAO, the approval must include the DAO-authorized signature.

(k) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) TCCA AD CF–2020–51R1, dated February 24, 2021, for related information. This MCAI may be found in the AD docket on the internet at *https://www.regulations.gov* by searching for and locating Docket No. FAA–2021–0514.

(2) For more information about this AD, contact Deep Gaurav, Aerospace Engineer, Airframe and Propulsion Section, FAA, New York ACO Branch, 1600 Stewart Avenue, Suite 410, Westbury, NY 11590; telephone 516–228–7300; fax 516–794–5531; email *9-avs-nyaco-cos@faa.gov.*

(3) For service information identified in this AD, contact De Havilland Aircraft of Canada Limited, Q-Series Technical Help Desk, 123 Garratt Boulevard, Toronto, Ontario M3K 1Y5, Canada; telephone 416–375–4000; fax 416–375–4539; email *thd@dehavilland.com;* internet *https://dehavilland.com.* You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206–231–3195.

Issued on June 23, 2021.

Lance T. Gant,

Director, Compliance & Airworthiness Division, Aircraft Certification Service.

[FR Doc. 2021–13726 Filed 6–28–21; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA–2021–0515; Project Identifier AD–2021–00191–E]

RIN 2120–AA64

Airworthiness Directives; Pratt & Whitney Turbofan Engines

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: The FAA proposes to adopt a new airworthiness directive (AD) for all Pratt & Whitney PW1500G and PW1900G series turbofan engines with a certain high-pressure turbine (HPT) 1st-stage hub or HPT rotor 1st-stage blade retaining plate installed. This proposed AD was prompted by a report from the manufacturer who determined that the HPT 1st-stage hub and HPT rotor 1st-stage blade retaining plate fail to meet the published life-cycle limits for each part. This proposed AD would require removal and replacement of the HPT 1st-stage hub and HPT rotor 1st-stage blade retaining plate prior to reaching certain cycle limits. The FAA is proposing this AD to address the unsafe condition on these products.

DATES: The FAA must receive comments on this proposed AD by June 29, 2021.

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- *Federal eRulemaking Portal:* Go to *https://www.regulations.gov.* Follow the instructions for submitting comments.
- *Fax:* (202) 493–2251.
- *Mail:* U.S. Department of Transportation, Docket Operations, M–30, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590.
- *Hand Delivery:* Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Pratt & Whitney, 400 Main Street, East Hartford, CT 06118; phone: (800) 565–0140; fax: (860) 565–5442; email: *help24@pw.utc.com;* website: *https://fleetcare.pw.utc.com.* You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238–7759.

Examining the AD Docket

You may examine the AD docket at *https://www.regulations.gov* by searching for and locating Docket No. FAA–2021–0515; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Mark Taylor, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238–7229; fax: (781) 238–7199; email: *Mark.Taylor@faa.gov*.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under **ADDRESSES**. Include ''Docket No. FAA–2021–0515; Project Identifier AD–2021–00191–E'' at the beginning of your comments. The most helpful comments reference a specific portion of the proposal, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this proposal because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to *https://www.regulations.gov,* including any personal information you provide. The agency will also post a report summarizing each substantive verbal contact received about this NPRM.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this NPRM contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this NPRM, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as ''PROPIN.'' The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this NPRM. Submissions containing CBI should be sent to Mark Taylor, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA received a report from the manufacturer, who determined after recalculating life limits using a thermal match model and other life-calculation methodology updates, the HPT 1st-stage hub and HPT rotor 1st-stage blade retaining plate failed to meet the published life-cycle limits for each part. This condition, if not addressed, could result in the release of the HPT 1st-stage hub or HPT rotor 1st-stage blade retaining plate, damage to the engine, and damage to the aircraft.

FAA's Determination

The FAA is issuing this NPRM after determining that the unsafe condition described previously is likely to exist or develop on other products of the same type design.

Related Service Information

The FAA reviewed Pratt & Whitney Service Bulletin (SB) PW1000G–A–72–00–0115–00B–930A–D, Issue No. 001, dated April 26, 2021, and Pratt & Whitney SB PW1000G–A–72–00–0168–00A–930A–D, Issue No. 001, dated April 26, 2021. These SBs describe procedures for removing and replacing the HPT 1st-stage hub and HPT rotor 1st-stage blade retaining plate.

Proposed AD Requirements in This NPRM

This proposed AD would require removal and replacement of the HPT 1st-stage hub and HPT rotor 1st-stage blade retaining plate prior to reaching certain cycle limits.

Costs of Compliance

The FAA estimates that this AD, if adopted as proposed, would affect 88 engines installed on airplanes of U.S. registry. The FAA estimates that in most cases the affected HPT 1st-stage hub and the affected HPT 1st-stage blade retaining plate will both be replaced during the same disassembly of the engine. This cost estimate therefore reflects the cost of replacing both parts during the same engine disassembly.

The FAA estimates the following costs to comply with this proposed AD:

ESTIMATED COSTS

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Replace HPT 1st-stage hub and HPT rotor 1st-stage blade retaining plate (pro-rated part cost).	300 work-hours × $85 per hour = $25,500.	$86,252	$111,752	$9,834,176

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect 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.

For the reasons discussed above, I certify this proposed regulation:

(1) Is not a ''significant regulatory action'' under Executive Order 12866,

(2) Would not affect intrastate aviation in Alaska, and

(3) Would not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39—AIRWORTHINESS DIRECTIVES

■ 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

■ 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

Pratt & Whitney: Docket No. FAA–2021–0515; Project Identifier AD–2021–00191–E.

(a) Comments Due Date

The FAA must receive comments on this airworthiness directive (AD) by August 13, 2021.

(b) Affected ADs

None.

(c) Applicability

This AD applies to Pratt & Whitney PW1519G, PW1521G, PW1521G–3, PW1521GA, PW1524G, PW1524G–3, PW1525G, PW1525G–3, PW1919G, PW1921G, PW1922G, PW1923G, and PW1923G–A model turbofan engines with a high-pressure turbine (HPT) 1st-stage hub, part number (P/N) 30G5701, or an HPT rotor 1st-stage blade retaining plate, P/N 30G1692, installed.

(d) Subject

Joint Aircraft System Component (JASC) Code 7250, Turbine Section.

(e) Unsafe Condition

This AD was prompted by a report from the manufacturer who determined that the HPT 1st-stage hub and HPT rotor 1st-stage blade retaining plate fail to meet the published life-cycle limits for each part. The FAA is issuing this AD to prevent failure of the HPT 1st-stage hub or HPT rotor 1st-stage blade retaining plate. The unsafe condition, if not addressed, could result in the release of the HPT 1st-stage hub or HPT rotor 1st-stage blade retaining plate, damage to the engine, and damage to the aircraft.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Required Actions

(1) For PW1519G, PW1521G, PW1521G–3, PW1521GA, PW1524G, and PW1524G–3 model turbofan engines:

(i) For an affected HPT 1st-stage hub and an affected HPT rotor 1st-stage blade retaining plate with 3,000 cycles since new (CSN) or fewer on the effective date of this AD, before the affected part exceeds 4,700 CSN, remove the affected part, as applicable, and replace with a part eligible for installation.

(ii) For an affected HPT 1st-stage hub and an affected HPT rotor 1st-stage blade retaining plate with greater than 3,000 CSN but fewer than 4,960 CSN on the effective date of the AD, at the next engine shop visit after accumulating 4,700 CSN or before the affected part exceeds 5,260 CSN, whichever occurs first, remove the affected part, as applicable, and replace with a part eligible for installation.

(iii) For an affected HPT 1st-stage hub and an affected HPT rotor 1st-stage blade retaining plate with 4,960 CSN or greater on the effective date of the AD, at the next engine shop visit or within 300 cycles after the effective date of this AD, whichever occurs first, remove the affected part, as applicable, and replace with a part eligible for installation.

(2) For PW1919G and PW1921G model turbofan engines:

(i) For an affected HPT 1st-stage hub and an affected HPT rotor 1st-stage blade retaining plate with 3,000 CSN or fewer on the effective date of this AD, before the affected part exceeds 4,700 CSN, remove the affected part, as applicable, and replace with a part eligible for installation.

(ii) For an affected HPT 1st-stage hub and an affected HPT rotor 1st-stage blade retaining plate with greater than 3,000 CSN but fewer than 4,700 CSN on the effective date of the AD, at the next engine shop visit after the affected part accumulates 4,700 CSN or before the affected part exceeds 5,000 CSN, whichever occurs first, remove the affected part, as applicable, and replace with a part eligible for installation.

(iii) For an affected HPT 1st-stage hub and an affected HPT rotor 1st-stage blade retaining plate with 4,700 CSN or greater on the effective date of the AD, at the next engine shop visit or within 300 cycles after the effective date of this AD, whichever occurs first, remove the affected part, as applicable, and replace with a part eligible for installation.

(3) For PW1525G and PW1525G–3 model turbofan engines:

(i) Before the affected HPT 1st-stage hub and affected HPT rotor 1st-stage blade retaining plate exceeds 2,800 CSN, respectively, or within 300 cycles after the effective date of this AD, whichever occurs later, remove the affected part, as applicable, and replace with a part eligible for installation.

(ii) [Reserved]

(4) For PW1922G, PW1923G, and PW1923G–A model turbofan engines:

(i) Before the affected HPT 1st-stage hub and affected HPT rotor 1st-stage blade retaining plate exceeds 3,000 CSN,

respectively, or within 300 cycles after the effective date of this AD, whichever occurs later, remove the affected part, as applicable, and replace with a part eligible for installation.

(ii) [Reserved]

(h) Definition

(1) For the purpose of this AD, an ''engine shop visit'' is the induction of an engine into the shop for maintenance involving the separation of pairs of major mating engine case flanges, except for the following, which do not constitute an engine shop visit:

(i) Separation of engine flanges solely for the purposes of transportation without subsequent maintenance does not constitute an engine shop visit.

(ii) Separation of engine flanges solely for the purpose of replacing the fan without subsequent maintenance does not constitute an engine shop visit.

(2) For the purpose of this AD, a ''part eligible for installation'' is:

(i) For PW1519G, PW1521G, PW1521G–3, PW1521GA, PW1524G, PW1524G–3, PW1919G, and PW1921G model turbofan engines:

(A) Any HPT 1st-stage hub with P/N 30G5701 with 4,700 CSN or fewer, or with a P/N not listed in this AD.

(B) Any HPT rotor 1st-stage blade retaining plate with P/N 30G1692 with 4,700 CSN or fewer, or with a P/N not listed in this AD.

(ii) For PW1525G and PW1525G–3 model turbofan engines:

(A) Any HPT 1st-stage hub with P/N 30G5701 with 2,800 CSN or fewer, or with a P/N not listed in this AD.

(B) Any HPT rotor 1st-stage blade retaining plate with P/N 30G1692 with 2,800 CSN or fewer, or with a P/N not listed in this AD.

(iii) For PW1922G, PW1923G, and PW1923G–A model turbofan engines:

(A) Any HPT 1st-stage hub with P/N 30G5701 with 3,000 CSN or fewer, or with a P/N not listed in this AD.

(B) Any HPT rotor 1st-stage blade retaining plate with P/N 30G1692 with 3,000 CSN or fewer, or with a P/N not listed in this AD.

(i) Alternative Methods of Compliance (AMOCs)

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in Related Information. You may email your request to: *ANE-AD-AMOC@faa.gov*.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(j) Related Information

(1) For more information about this AD, contact Mark Taylor, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238–7229; fax: (781) 238–7199; email: *Mark.Taylor@faa.gov*.

(2) For service information identified in this AD, contact Pratt & Whitney, 400 Main Street, East Hartford, CT 06118; phone: (800) 565–0140; fax: (860) 565–5442; email: *help24@pw.utc.com;* website: *https://fleetcare.pw.utc.com*. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238–7759.

Issued on June 23, 2021.

Lance T. Gant,

Director, Compliance & Airworthiness Division, Aircraft Certification Service.

[FR Doc. 2021–13709 Filed 6–28–21; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 71

[Docket No. FAA–2021–0518; Airspace Docket No. 21–ASW–12]

RIN 2120–AA66

Proposed Amendment Class E Airspace; Oklahoma City, OK

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This action proposes to amend the Class E airspace at Sundance Airport, Oklahoma City, OK. The FAA is proposing this action as the result of an airspace review due to the decommissioning of the Sundance Localizer (LOC).

DATES: Comments must be received on or before August 13, 2021.

ADDRESSES: Send comments on this proposal to the U.S. Department of Transportation, Docket Operations, West Building Ground Floor, Room W12–140, 1200 New Jersey Avenue SE, Washington, DC 20590; telephone (202) 366–9826, or (800) 647–5527. You must identify FAA Docket No. FAA–2021–0518/Airspace Docket No. 21–ASW–12, at the beginning of your comments. You may also submit comments through the internet at *https://www.regulations.gov*. You may review the public docket containing the proposal, any comments received, and any final disposition in person in the Dockets Office between 9:00 a.m. and 5:00 p.m., Monday through Friday, except federal holidays.

FAA Order 7400.11E, Airspace Designations and Reporting Points, and subsequent amendments can be viewed online at *https://www.faa.gov/air_traffic/publications/*. For further information, you can contact the Airspace Policy Group, Federal Aviation Administration, 800 Independence Avenue SW, Washington, DC 20591; telephone: (202) 267–8783. The Order is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of FAA Order 7400.11E at NARA, email *fedreg.legal@nara.gov* or go to *https://www.archives.gov/federal-register/cfr/ibr-locations.html*.

FOR FURTHER INFORMATION CONTACT: Jeffrey Claypool, Federal Aviation Administration, Operations Support Group, Central Service Center, 10101 Hillwood Parkway, Fort Worth, TX 76177; telephone (817) 222–5711.

SUPPLEMENTARY INFORMATION:

Authority for This Rulemaking

The FAA's authority to issue rules regarding aviation safety is found in Title 49 of the United States Code. Subtitle I, Section 106 describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the agency's authority. This rulemaking is promulgated under the authority described in Subtitle VII, Part A, Subpart I, Section 40103. Under that section, the FAA is charged with prescribing regulations to assign the use of airspace necessary to ensure the safety of aircraft and the efficient use of airspace. This regulation is within the scope of that authority as it would amend the Class E airspace extending upward from 700 feet above the surface at Sundance Airport, Oklahoma City, OK, to support instrument flight rule operations at this airport.

Comments Invited

Interested parties are invited to participate in this proposed rulemaking by submitting such written data, views, or arguments, as they may desire. Comments that provide the factual basis supporting the views and suggestions presented are particularly helpful in developing reasoned regulatory decisions on the proposal. Comments are specifically invited on the overall regulatory, aeronautical, economic, environmental, and energy-related aspects of the proposal. Communications should identify both docket numbers and be submitted in triplicate to the address listed above. Commenters wishing the FAA to acknowledge receipt of their comments on this notice must submit with those comments a self-addressed, stamped

postcard on which the following statement is made: ''Comments to Docket No. FAA–2021–0518/Airspace Docket No. 21–ASW–12.'' The postcard will be date/time stamped and returned to the commenter.

All communications received before the specified closing date for comments will be considered before taking action on the proposed rule. The proposal contained in this notice may be changed in light of the comments received. A report summarizing each substantive public contact with FAA personnel concerned with this rulemaking will be filed in the docket.

Availability of NPRMs

An electronic copy of this document may be downloaded through the internet at *https://www.regulations.gov.* Recently published rulemaking documents can also be accessed through the FAA's web page at *https://www.faa.gov/air_traffic/publications/airspace_amendments/.*

You may review the public docket containing the proposal, any comments received, and any final disposition in person in the Dockets Office (see the **ADDRESSES** section for the address and phone number) between 9:00 a.m. and 5:00 p.m., Monday through Friday, except federal holidays. An informal docket may also be examined during normal business hours at the Federal Aviation Administration, Air Traffic Organization, Central Service Center, Operations Support Group, 10101 Hillwood Parkway, Fort Worth, TX 76177.

Availability and Summary of Documents for Incorporation by Reference

This document proposes to amend FAA Order 7400.11E, Airspace Designations and Reporting Points, dated July 21, 2020, and effective September 15, 2020. FAA Order 7400.11E is publicly available as listed in the **ADDRESSES** section of this document. FAA Order 7400.11E lists Class A, B, C, D, and E airspace areas, air traffic service routes, and reporting points.

The Proposal

The FAA is proposing an amendment to 14 CFR part 71 by amending the Class E airspace extending upward from 700 feet above the surface to within a 6.5-mile (decreased from a 6.8-mile) radius of Sundance Airport, Oklahoma City, OK.

These actions are the result of an airspace review caused by the decommissioning of the Sundance LOC which provided guidance to instrument procedures at this airport.

Class E airspace designations are published in paragraph 6005 of FAA Order 7400.11E, dated July 21, 2020, and effective September 15, 2020, which is incorporated by reference in 14 CFR 71.1. The Class E airspace designations listed in this document will be published subsequently in the Order.

FAA Order 7400.11, Airspace Designations and Reporting Points, is published yearly and effective on September 15.

Regulatory Notices and Analyses

The FAA has determined that this regulation only involves an established body of technical regulations for which frequent and routine amendments are necessary to keep them operationally current, is non-controversial and unlikely to result in adverse or negative comments. It, therefore: (1) Is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under DOT Regulatory Policies and Procedures (44 FR 11034; February 26, 1979); and (3) does not warrant preparation of a regulatory evaluation as the anticipated impact is so minimal. Since this is a routine matter that will only affect air traffic procedures and air navigation, it is certified that this rule, when promulgated, would not have a significant economic impact on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

Environmental Review

This proposal will be subject to an environmental analysis in accordance with FAA Order 1050.1F, ''Environmental Impacts: Policies and Procedures'' prior to any FAA final regulatory action.

List of Subjects in 14 CFR 71

Airspace, Incorporation by reference, Navigation (air).

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me, the Federal Aviation Administration proposes to amend 14 CFR part 71 as follows:

PART 71—DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS

■ 1. The authority citation for 14 CFR part 71 continues to read as follows:

Authority: 49 U.S.C. 106(f), 106(g); 40103, 40113, 40120; E.O. 10854, 24 FR 9565, 3 CFR, 1959–1963 Comp., p. 389.

71.1 [Amended]

■ 2. The incorporation by reference in 14 CFR 71.1 of FAA Order 7400.11E, Airspace Designations and Reporting Points, dated July 21, 2020, and effective September 15, 2020, is amended as follows:

Paragraph 6005 Class E Airspace Areas Extending Upward From 700 Feet or More Above the Surface of the Earth.

* * * * *

ASW OK E5 Oklahoma City, OK [Amended]

Will Rogers World Airport, OK
(Lat. 35°23′35″ N, long. 97°36′03″ W)
Tinker AFB, OK
(Lat. 35°24′53″ N, long. 97°23′12″ W)
University of Oklahoma Westheimer Airport, OK
(Lat. 35°14′44″ N, long. 97°28′20″ W)
David Jay Perry Airport, OK
(Lat. 35°09′18″ N, long. 97°28′13″ W)
Clarence E. Page Municipal Airport, OK
(Lat. 35°29′17″ N, long. 97°49′25″ W)
El Reno Regional Airport, OK
(Lat. 35°28′22″ N, long. 98°00′21″ W)
Wiley Post Airport, OK
(Lat. 35°32′03″ N, long. 97°38′49″ W)
Sundance Airport, OK
(Lat. 35°36′07″ N, long. 97°42′22″ W)

That airspace extending upward from 700 feet above the surface within an 8.1-mile radius of Will Rogers World Airport, and within an 8.2-mile radius of Tinker AFB, and within a 6.7-mile radius of University of Oklahoma Westheimer Airport, and within 2.0 miles each side of the 213° bearing from the airport extending from the 6.7-mile radius to 7.8 miles southwest of the airport, and within a 6.3-mile radius of David Jay Perry Airport, and within a 6.5-mile radius of Clarence E. Page Municipal Airport, and within a 6.6-mile radius of El Reno Regional Airport, and within a 6.8-mile radius of Wiley Post Airport, and within a 6.5-mile radius of Sundance Airport.

Issued in Fort Worth, Texas, on June 23, 2021.

Martin A. Skinner,

Acting Manager, Operations Support Group, ATO Central Service Center.

[FR Doc. 2021–13735 Filed 6–28–21; 8:45 am]

BILLING CODE 4910–13–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

15 CFR Part 922

Plan for Periodic Review of Regulations

AGENCY: Office of National Marine Sanctuaries (ONMS), National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce (DOC).

ACTION: Notice of plan for periodic review of regulations; request for comments.

SUMMARY: The Regulatory Flexibility Act (RFA) requires that NOAA's Office of National Marine Sanctuaries (ONMS) periodically review existing regulations that have a significant economic impact on a substantial number of small entities, such as small businesses, small organizations, and small governmental jurisdictions. This plan describes how ONMS will perform this review and describes the regulations proposed for review in fiscal year 2022.

DATES: Comments must be received on or before July 29, 2021.

ADDRESSES: Comments may be submitted by:

• *Electronic Submission:* Submit all electronic public comments via the Federal eRulemaking Portal. Go *to http://www.regulations.gov,* and search for docket NOAA–NOS–2021–0047, click the ''Comment Now!'' icon, complete the required fields, and enter or attach your comments.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the comment period, may not be considered by NOAA. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personally identifiable information (for example, name, address, etc.), confidential business information, or otherwise sensitive information submitted voluntarily submitted by the commenter will be publicly accessible. NOAA will accept anonymous comments (enter ''N/A'' in the required fields if you wish to remain anonymous).

FOR FURTHER INFORMATION CONTACT: Meredith Walz, NOAA Office of National Marine Sanctuaries, 1305 East West Highway, Silver Spring, MD 20910, *meredith.walz@noaa.gov,* or 240–533–0686.

SUPPLEMENTARY INFORMATION:

Background

The Regulatory Flexibility Act (RFA), 5 U.S.C. 601 *et seq.,* requires that Federal agencies take into account how their regulations affect ''small entities,'' which the RFA defines to include small businesses, small governmental jurisdictions and small organizations. 5 U.S.C. 601. For regulations proposed after January 1, 1981, the agency must either prepare a Regulatory Flexibility Analysis or certify that the regulation, if promulgated, will not have a significant economic impact on a substantial number of small entities.

Section 610 of the RFA, 5 U.S.C. 610, requires Federal agencies to review existing regulations which have or will have a significant economic impact on a substantial number of small entities. It requires that ONMS publish a plan in the **Federal Register** explaining how it will review existing regulations that have a significant economic impact on a substantial number of small entities. Regulations that have a significant economic impact on a substantial number of small entities that became effective after January 1, 1981, must be reviewed within 10 years of the publication date of the final rule. Section 610(c) requires that ONMS publish in the **Federal Register** a list of rules it will review during the succeeding 12 months. The list must describe, explain the need for, and provide the legal basis for the rules, as well as invite public comment on the rules.

In addition, section 605 of the RFA, 5 U.S.C. 605, provides that if, when a rule is proposed or finalized, the head of an agency certifies to the Small Business Administration's Chief Counsel for Advocacy that the rule would not have a significant economic impact on a substantial number of small entities, then initial and final regulatory flexibility analyses do not need to be prepared for the rule. The Small Business Administration's guidance on implementing the requirements of RFA section 610 indicates that agencies may exercise their discretion to determine if previously changed conditions may mean that a certified rule now does have a significant economic impact on a substantial number of small entities and, therefore, should be subject to a full section 610 review. If there is evidence that a previously certified rule is now having a significant economic impact on a substantial number of small entities, then the Small Business Administration recommends that the agency should conduct a section 610 review of the rule.

Criteria for Review of Existing Regulations

The purpose of a section 610 review is to determine whether existing rules should be left unchanged, or whether they should be revised or rescinded in order to minimize significant economic impacts on a substantial number of small entities, consistent with the objectives of other applicable statutes. RFA section 610(b) requires agencies to consider five factors when conducting this review:

(1) Whether the rule is still needed;

(2) What type of public complaints or comments were received concerning the rule;

(3) How complex is the rule;

(4) How much the rule overlaps, duplicates or conflicts with other Federal rules, and, to the extent feasible, with state and local governmental rules; and

(5) How long it has been since the rule has been evaluated or how much the technology, economic conditions, or other factors have changed in the area affected by the rule.

For rules that were certified under RFA section 605, ONMS is not required to conduct a review under RFA section 610. However, ONMS may exercise its discretion to prepare an assessment to determine whether changed conditions may mean that the existing rules now do have a significant economic impact on a substantial number of small entities and should therefore be reviewed under RFA section 610.

Plan for Periodic Review of Rules

ONMS will conduct reviews in such a way as to ensure that all rules for which a final regulatory flexibility analysis was prepared are reviewed within 10 years of the year in which they were originally issued. During this same period, ONMS may exercise its discretion to also review rules certified under RFA section 605 as not having significant impacts. ONMS may evaluate whether changed conditions may mean that the existing rules now do have a significant economic impact on a substantial number of small entities and therefore should be reviewed under RFA section 610. ONMS intends that it will conduct section 610 reviews on applicable regulations on an annual basis. ONMS will make RFA Section 610 review reports available at the following website: *http://sanctuaries.noaa.gov/library/alldocs.html.*

ONMS Regulation Requiring Review for Fiscal Year 2022

ONMS has determined that one rulemaking finalized in fiscal year 2012 requires review under RFA section 610:

''Research Area Within Gray's Reef National Marine Sanctuary''. RIN 0648–AV88 (76 FR 63824; October 14, 2011). This final rule created an 8.27 square-mile research area within the southern portion of Gray's Reef National Marine Sanctuary. NOAA created the research area pursuant to its authority under the National Marine Sanctuaries Act, 16 U.S.C. 1431 *et seq.,* in order to provide a zone specifically designed for conducting controlled scientific studies in the absence of certain human

activities that could affect the results. NOAA prohibited fishing, diving, and stopping a vessel in the research area. NOAA prepared a final regulatory flexibility analysis for this rule when it was finalized.

ONMS invites comments on this rule, and will evaluate comments that would assist ONMS in conducting its RFA section 610 review. Unless we publish a document stating otherwise, ONMS will make the final report available at *http://sanctuaries.noaa.gov/library/alldocs.html.*

John Armor,

Director, Office of National Marine Sanctuaries, National Oceanic and Atmospheric Administration.

[FR Doc. 2021–13495 Filed 6–28–21; 8:45 am]

BILLING CODE 3510–NK–P

CONSUMER PRODUCT SAFETY COMMISSION

16 CFR Chapter II

[Docket No. CP–21–1]

Petition Requesting Rulemaking on Duster Aerosol Products

AGENCY: Consumer Product Safety Commission.

ACTION: Request for comment on petition for rulemaking.

SUMMARY: The Consumer Product Safety Commission (CPSC or Commission) has received a petition requesting that the Commission initiate rulemaking to adopt a safety standard for duster aerosol products. The Commission invites written comments concerning the petition.

DATES: Submit comments by August 30, 2021.

ADDRESSES: Submit comments, identified by Docket No. CP–21–1, by any of the following methods:

Electronic Submissions: Submit electronic comments to the Federal eRulemaking Portal at: *https://www.regulations.gov*. Follow the instructions for submitting comments. CPSC does not accept comments submitted by electronic mail (email), except through *https://www.regulations.gov* and as described below. CPSC encourages you to submit electronic comments by using the Federal eRulemaking Portal, as described above.

Mail/Hand Delivery/Courier Written Submissions: Submit comments by mail/hand delivery/courier to: Division of the Secretariat, Consumer Product Safety Commission, Room 820, 4330 East West Highway, Bethesda, MD 20814; telephone: (301) 504–7479. Alternatively, as a temporary option during the COVID–19 pandemic, you may email such submissions to: *cpsc-os@cpsc.gov*.

Instructions: All submissions must include the agency name and docket number for this notice. CPSC may post all comments without change, including any personal identifiers, contact information, or other personal information provided, to: *https://www.regulations.gov*. Do not submit electronically: Confidential business information, trade secret information, or other sensitive or protected information that you do not want to be available to the public. If you wish to submit such information, please submit it according to the instructions for mail/hand delivery/courier written submissions.

Docket: For access to the docket to read background documents or comments received, go to: *https://www.regulations.gov,* and insert the docket number, CP–21–1, into the ''Search'' box, and follow the prompts.

FOR FURTHER INFORMATION CONTACT: Alberta E. Mills, Division of the Secretariat, Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814; telephone: 301–504–7479; email: *amills@cpsc.gov*.

SUPPLEMENTARY INFORMATION: On April 2, 2021, Families United Against Inhalant Abuse (FUAIA) (petitioner), submitted a petition requesting the Commission initiate rulemaking to adopt a mandatory CPSC safety standard to address the hazards associated with ''duster'' aerosol products used for cleaning electronics and other items and containing the chemical 1,1-Difluorethane, or any derivative thereof. The Commission's procedure for petitioning for rulemaking is described at 16 CFR part 1051.

The petitioner states that ''duster'' products are any hydrofluorocarbon propellant cleaner products intended for the purpose of cleaning electronic devices, photographic equipment, and any other items having areas where dust resides and is inaccessible by hand. The petitioner also states that such duster products contain hydrofluorocarbon propellant cleaner, such as 1,1-Difluoroethane, or a similar derivative. The petitioner notes that these duster products are sold under a variety of brand names and are widely available to consumers in various retail stores and online.

The petitioner states that when 1,1-Difluoroethane used in duster aerosol products is inhaled from the can (commonly called huffing), intoxication occurs rapidly, yet is very short-lived (4 to 5 minutes). According to the petitioner, inhalation of this chemical is acutely dangerous and causes immediate brain damage and possible Sudden Sniffing Death (SSD). The petitioner states that 22 percent of first-time duster inhalers die, and the majority of all duster-inhalant deaths are attributed to SSD.

After reviewing all of the data, the petitioner concludes that: (1) Duster inhalation in the United States is a ''chronic problem''; (2) individuals of all ages, genders, ethnicities, and education, and socioeconomic levels are involved in the use of duster as an inhalant and are dying in large numbers throughout the United States; (3) there is an ''unreasonable'' risk of physical injury and death due to the inhalant use of duster products; and (4) current interventions (legislation, retail practices, manufacturer design) have been ineffective in resolving this problem.

The petitioner requests that CPSC promulgate a mandatory safety standard that includes the following:

- *A performance standard.* Require manufacturers to add an aversive (bitterant other than Denatonium Benzoate) to all duster aerosol cans at a level of 30–40 ppm. The duster can injection technology must be improved to ensure that the bitterant actually gets into the can and will also appear in the spray at the designated level.
- *Warning requirements.*[1] Place a ''much stronger'' warning on the can. An example of this warning could be: ''*DANGER: DEATH—This product can kill you if you breathe it.*''

The Commission seeks comments concerning this petition.

The major factors the Commission considers in deciding whether to grant or deny a petition regarding a product include the following items:

(1) Whether the product involved presents an unreasonable risk of injury.

(2) Whether a rule is reasonably necessary to eliminate or reduce the risk of injury.

(3) Whether failure of the Commission to initiate the rulemaking proceeding requested would unreasonably expose the petitioner or other consumers to the risk of injury which the petitioner alleges is presented by the product. 16 CFR § 1051.9(a).

[1] The petitioner also requests that CPSC promulgate a provision in a standard that requires retailers to monitor and limit individuals from continually purchasing multiple cans of duster from their stores within a designated (1 month) period. Under Section 7 of the CPSA, the Commission may issue only performance requirements and requirements for warnings or instructions. Therefore, the Commission lacks authority to require these additional provisions.

In considering these factors, the Commission will treat as an important component of each one the relative priority of the risk of injury associated with the product about which the petition has been filed and the Commission's resources available for rulemaking activities with respect to that risk of injury. 16 CFR 1051.9(b).

The CPSC Policy on Establishing Priorities for Commission Action, 16 CFR 1009.8, sets forth the criteria upon which Commission priorities are based.

The petition is available on the CPSC website *https://www.cpsc.gov/s3fs-public/Petition-from-Families-United-Against-Inhalant-Abuse-FUAIA.pdf?EYYcWmPdktNDi5NiVt8Vixck_.Sz.Mnf* or *http://www.regulations.gov,* under Docket No. CP–21–1, Supporting and Related Materials. Alternatively, interested parties may obtain a copy of the petition by writing or calling the Division of the Secretariat, Consumer Product Safety Commission, 4330 East West Highway, Bethesda, MD 20814; telephone (301) 504–6833.

Alberta E. Mills,

Secretary, U.S. Consumer Product Safety Commission.

[FR Doc. 2021–13337 Filed 6–28–21; 8:45 am]

BILLING CODE 6355–01–P

DEPARTMENT OF THE INTERIOR

Bureau of Safety and Environmental Enforcement

30 CFR Part 250

Bureau of Ocean Energy Management

30 CFR Part 550

[Docket ID BSEE–2019–0008, EEEE500000, 21XE1700DX, EX1SF0000.EAQ000]

RIN 1082–AA01

Oil and Gas and Sulfur Operations in the Outer Continental Shelf—Revisions to the Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf

AGENCY: Bureau of Safety and Environmental Enforcement (BSEE) and Bureau of Ocean Energy Management (BOEM), Department of the Interior.

ACTION: Withdrawal of proposed rule.

SUMMARY: The U.S. Department of the Interior (DOI or Department), acting through BSEE and BOEM, hereby withdraws in its entirety the proposed rule published on December 9, 2020, entitled ''Revisions to the Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf.''

DATES: As of the date of signature, June 23, 2021, the proposed rule published on December 9, 2020, at 85 FR 79266 is withdrawn.

FOR FURTHER INFORMATION CONTACT: For questions on any BSEE issues, contact Kirk Malstrom, BSEE, at *kirk.malstrom@bsee.gov* or at (703) 787–1751. For questions on any BOEM issues, contact Deanna Meyer-Pietruszka, BOEM, Chief, Office of Policy, Regulation, and Analysis, at *Deanna.Meyer-Pietruszka@boem.gov* or by mail to 1849 C Street NW, Washington, DC 22040 or by calling (202) 208–6352.

SUPPLEMENTARY INFORMATION: On July 15, 2016, BSEE and BOEM promulgated a narrowly focused rule (see 2016 Arctic Exploratory Drilling Rule at 81 FR 46478) revising the regulations applicable to exploratory drilling operations conducted during the Arctic Outer Continental Shelf (OCS) open-water drilling season by drilling vessels and ''jack-up rigs'' (collectively known as mobile offshore drilling units or MODUs) in the Beaufort Sea and Chukchi Sea Planning Areas. The regulations promulgated through the 2016 Arctic Exploratory Drilling Rule were intended to ensure that Arctic OCS exploratory drilling operations are conducted in a safe and responsible manner, while taking into account the unique conditions of the Arctic OCS as well as Alaska Natives' cultural traditions and their need for access to subsistence resources.

E.O. 13795, ''Implementing an America-First Offshore Energy Strategy'' (82 FR 20815), issued on April 28, 2017, and S.O. 3350, ''America-First Offshore Energy Strategy,'' issued on May 1, 2017, directed BSEE and BOEM to undertake a review of the 2016 Arctic Exploratory Drilling Rule. In response, on December 9, 2020, the Department published the proposed rule: ''Oil and Gas and Sulfur Operations on the Outer Continental Shelf—Revisions to the Requirements for Exploratory Drilling on the Arctic Outer Continental Shelf'' (85 FR 79266) (2020 Proposed Arctic Exploratory Drilling Rule). The proposed rule provided a 60-day public comment period, which closed February 8, 2021. After publication of the proposed rule, BSEE and BOEM received requests to extend the comment period for 60 days. BSEE and BOEM subsequently re-opened the comment period for an additional 60 days through a notice published in the **Federal Register** on February 10, 2021 (86 FR 8878). That comment period closed on April 9, 2021.

Since publication of the 2020 Proposed Arctic Exploratory Drilling Rule, President Biden issued E.O. 13990, ''Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis'' (86 FR 7037, Jan. 25, 2021). E.O. 13990 establishes a policy to, among other things, promote and protect public health and the environment. Section 7 of the E.O. revoked E.O. 13795. Further, on April 16, 2021, Secretary Haaland issued S.O. 3398, which revoked S.O. 3350. The Department has decided it will not proceed with a final rule codifying any provisions of the 2020 Proposed Arctic Exploratory Drilling Rule, and the proposed rule is hereby withdrawn. The withdrawal of the proposed rule does not preclude the Department from initiating the same or a similar rulemaking at a future date. Should the Department decide to undertake such a rulemaking, it will begin with a new proposed rule and provide new opportunities for comment.

Laura Daniel-Davis,

Principal Deputy Assistant Secretary, Land and Minerals Management.

[FR Doc. 2021–13803 Filed 6–28–21; 8:45 am]

BILLING CODE 4310–VH–P; 4310–MR–P

DEPARTMENT OF HOMELAND SECURITY

Coast Guard

33 CFR Part 117

[Docket No. USCG–2019–0955]

RIN 1625–AA09

Drawbridge Operation Regulation; New River, Fort Lauderdale, FL

AGENCY: Coast Guard, DHS.

ACTION: Supplemental notice of proposed rulemaking.

SUMMARY: On July 13, 2020, the Coast Guard published a notification of proposed rulemaking (NPRM) to change the operating schedule that governs the Florida East Coast (FEC) Railroad Bridge across the New River, mile 2.5, at Fort Lauderdale, Florida. This proposed change would allow the drawbridge to operate on a more predictable schedule. The Coast Guard is publishing this supplemental notice of proposed rulemaking (SNPRM) as considerable time has passed since the NPRM was published and minor modifications have been made to the proposed rule. We invite your comments on this proposed rulemaking.

DATES: Comments and related material must reach the Coast Guard on or before July 29, 2021.

ADDRESSES: You may submit comments identified by docket number USCG–2019–0955 using Federal e-Rulemaking Portal at *https://www.regulations.gov.*

See the ''Public Participation and Request for Comments'' portion of the **SUPPLEMENTARY INFORMATION** section below for instructions on submitting comments.

FOR FURTHER INFORMATION CONTACT: If you have questions on this supplemental proposed rule, call or email Ms. Jennifer Zercher, Bridge Management Specialist, Seventh Coast Guard District, telephone 305–415–6740, email *Jennifer.N.Zercher@uscg.mil.*

SUPPLEMENTARY INFORMATION:

I. Table of Abbreviations

CFR Code of Federal Regulations
DHS Department of Homeland Security
FR Federal Register
NPRM Notice of proposed rulemaking
SNPRM Supplemental notice of proposed rulemaking
ANPRM Advance Notice of Proposed Rulemaking
Pub. L. Public Law
§ Section
U.S.C. United States Code
FL Florida
FRA Federal Rail Administration
FECR Florida East Coast Railway
FEC Florida East Coast
VTUS–F Virgin Trains USA-Florida, LLC
MIASF Marine Industries Association of South Florida

II. Background, Purpose and Legal Basis

The Florida East Coast (FEC) Railroad Bridge across the New River, mile 2.5, at Fort Lauderdale, Florida is a single-leaf bascule railroad bridge with a four-foot vertical clearance at mean high water in the closed position. Traffic on the waterway includes both commercial and recreational vessels. Brightline, formerly Virgin Trains—USA Florida (VTUS–F), with support from the bridge owner, Florida East Coast Railway (FECR), requested a change to the drawbridge operating schedule due to an increase in rail traffic in recent years. The operating schedule for the bridge set forth in 33 CFR 117.313(c) no longer balances the needs of vessel and rail traffic.

On January 23, 2020, the Coast Guard published a Test Deviation, with a request for comments, entitled Drawbridge Operation Regulation; New River, Fort Lauderdale, FL in the **Federal Register** (85 FR 3852), to test the proposed operating schedule for the FEC New River Railroad Bridge. Seven comments were received and addressed in the NPRM.

On July 13, 2020, the Coast Guard published a Notice of Proposed Rulemaking entitled Drawbridge Operation Regulation; New River, Fort Lauderdale, FL in the **Federal Register** (85 FR 41932). During the comment period that ended August 12, 2020, we received two comments and those comments are addressed in Section III of this SNPRM.

We are issuing this supplemental proposal as considerable time has passed since the NPRM was published and comments were considered after the comment period had closed that lead to minor changes to the proposed rule. An Ex Parte Memorandum summarizing the communication is available in the docket.

The Coast Guard is issuing this proposed rule under authority 33 U.S.C. 499.

III. Discussion of Comments and Change

Two comments were received. One comment received was a re-submission by Brightline, formerly VTUS–F, which was addressed in the NPRM.

The second comment addressed concerns with the abbreviated vessel traffic study, interpretation of and language used in the proposed regulation. The commenter felt the inclusion of the abbreviated vessel traffic study might not have represented an accurate impact on the waterway as train service was disrupted by the coronavirus pandemic. The Coast Guard evaluated the survey provided. A decision was made to consider the data as train service was not reduced until March 18, 2020, the last day of the study.

The commenter's interpretation of the requirement to publish the 10-minute opening periods is correct. The requirement to publish the 10-minute opening periods applies to fixed 10-minute periods and the additional 10-minute periods from Noon to 2:59 p.m.

In regards to the commenter's interpretation of paragraph (5), actions taken by the Coast Guard, the Coast Guard will follow notification procedures to the maritime community as outlined by Coast Guard policy. Additionally, the Coast Guard will clarify who is to maintain the drawbridge log, mobile application and website in paragraphs (6) and (7) by adding the phrase ''by the drawbridge owner'' to the regulation.

The commenter requested to add language in paragraph (7)(ii), that would require notification of emergency circumstances be included on the website and mobile application. The following language was added ''. . . schedules, including but not limited to impacts due to emergency circumstances, minor repairs and inspections . . .''

The commenter's interpretation of the paragraph (8)(iii) is accurate. The drawbridge must open after the passage of rail traffic. However, the bridge may remain closed to navigation if periodic maintenance or inspections will be conducted in accordance with paragraph (1).

Lastly, the Coast Guard received a request from Marine Industries Association of South Florida (MIASF) to review and potentially define the term ''minor repairs'' as written in the propose rule after the comment period had closed. The Coast Guard evaluated the term ''minor repairs'' as it relates to drawbridge operating regulations and Federal Rail Administration (FRA) regulations. The Coast Guard does not define nor quantify ''minor repairs'' when authorizing federal drawbridge operation regulations; whereas FRA outlines what constitutes ''major repairs'' in 49 CFR 232.303. The Coast Guard made the decision to remove ''minor repairs'' from the proposed rule and include the following ''. . . and to perform periodic maintenance authorized in accordance with subpart A of this part.''

IV. Discussion of Proposed Rule

The proposed rule will allow the drawbridge to operate on a more predictable schedule. Under this proposed regulation, the draw of the FEC Railroad Bridge would provide a pre-determined 10-minute opening between 5:00 a.m. and 11:59 p.m. An additional 10-minute opening would be provided at various times throughout the day. A mobile application and website shall be maintained depicting the operational status of the drawbridge. This SNPRM proposes to remove ''minor repairs'' from the proposed regulatory text. This action allows for consistency with regulatory language frequently used in other regulations in 33 CFR part 117 subpart B. There are no other proposed changes to the operating schedule. The regulatory text we are proposing appears at the end of the document.

This proposed change would still allow vessels that are capable of transiting under the bridge, without an opening, to do so at any time while taking into account the reasonable needs of other modes of transportation. Vessels in distress and public vessels of the United States must be allowed to pass at any time or as soon as the train has cleared the bridge.

V. Regulatory Analyses

We developed this proposed rule after considering numerous statutes and Executive Orders related to rulemaking. Below we summarize our analyses based on these statutes and Executive Orders and we discuss First Amendment rights of protestors.

A. Regulatory Planning and Review

Executive Orders 12866 and 13563 direct agencies to assess the costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits. This SNPRM has not been designated a ''significant regulatory action,'' under Executive Order 12866. Accordingly, the SNPRM has not been reviewed by the Office of Management and Budget. (OMB).

This regulatory action determination is based on the ability that vessels can continue to transit the bridge at designated times throughout the day and when trains are not crossing or when a vessel is in distress.

B. Impact on Small Entities

The Regulatory Flexibility Act of 1980 (RFA), 5 U.S.C. 601–612, as amended, requires federal agencies to consider the potential impact of regulations on small entities during rulemaking. The term ''small entities'' comprises small businesses, not-for-profit organizations that are independently owned and operated and are not dominant in their fields, and governmental jurisdictions with populations of less than 50,000. The Coast Guard certifies under 5 U.S.C. 605(b) that this proposed rule would not have a significant economic impact on a substantial number of small entities.

While some owners or operators of vessels intending to transit the bridge may be small entities, for the reasons stated in section V.A above this proposed rule would not have a significant economic impact on any vessel owner or operator.

If you think that your business, organization, or governmental jurisdiction qualifies as a small entity and that this rule would have a significant economic impact on it, please submit a comment (see **ADDRESSES**) explaining why you think it qualifies and how and to what degree this rule would economically affect it.

Under section 213(a) of the Small Business Regulatory Enforcement Fairness Act of 1996 (Pub. L. 104–121), we want to assist small entities in understanding this proposed rule. If the rule would affect your small business, organization, or governmental jurisdiction and you have questions concerning its provisions or options for compliance, please contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section. The Coast Guard will not retaliate against small entities that question or complain about this proposed rule or any policy or action of the Coast Guard.

C. Collection of Information

This proposed rule would call for no new collection of information under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520.).

D. Federalism and Indian Tribal Government

A rule has implications for federalism under Executive Order 13132 (Federalism), if it has a substantial direct effect 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. We have analyzed this proposed rule under that Order and have determined that it is consistent with the fundamental federalism principles and preemption requirements described in Executive Order 13132.

Also, this proposed rule does not have tribal implications under Executive Order 13175 (Consultation and Coordination with Indian Tribal Governments) because it would not have a substantial direct effect on one or more Indian tribes, 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. If you believe this proposed rule has implications for federalism or Indian tribes, please contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

E. Unfunded Mandates Reform Act

The Unfunded Mandates Reform Act of 1995 (2 U.S.C. 1531–1538) requires Federal agencies to assess the effects of their discretionary regulatory actions. In particular, the Act addresses actions that may result in the expenditure by a State, local, or tribal government, in the aggregate, or by the private sector of $100,000,000 (adjusted for inflation) or more in any one year. Though this proposed rule will not result in such an expenditure, we do discuss the effects of this proposed rule elsewhere in this preamble.

F. Environment

We have analyzed this rule under Department of Homeland Security Management Directive 023–01, Rev. 1, associated implementing instructions, and Environmental Planning Policy COMDTINST 5090.1 (series), which guide the Coast Guard in complying with the National Environmental Policy Act of 1969 (NEPA) (42 U.S.C. 4321–4370f). The Coast Guard has that this action is one of a category of actions that do not individually or cumulatively have a significant effect on the human environment. This proposed rule promulgates the operating regulations or procedures for drawbridges. Normally such actions are categorically excluded from further review, under paragraph L49, of Chapter 3, Table 3–1 of the U.S. Coast Guard Environmental Planning Implementation Procedures.

Neither a Record of Environmental Consideration nor a Memorandum for the Record are required for this rule. We seek any comments or information that may lead to the discovery of a significant environmental impact from this proposed rule.

G. Protest Activities

The Coast Guard respects the First Amendment rights of protesters. Protesters are asked to contact the person listed in the **FOR FURTHER INFORMATION CONTACT** section to coordinate protest activities so that your message can be received without jeopardizing the safety or security of people, places or vessels.

VI. Public Participation and Request for Comments

We view public participation as essential to effective rulemaking, and will consider all comments and material received during the comment period. Your comment can help shape the outcome of this rulemaking. If you submit a comment, please include the docket number for this rulemaking, indicate the specific section of this document to which each comment applies, and provide a reason for each suggestion or recommendation.

We encourage you to submit comments through the Federal eRulemaking Portal at *https://www.regulations.gov.* If your material cannot be submitted using *https://www.regulations.gov,* contact the person in the **FOR FURTHER INFORMATION CONTACT** section of this document for alternate instructions.

We accept anonymous comments. All comments received will be posted without change to *https://www.regulations.gov* and will include any personal information you have provided. For more about privacy and submissions in response to this document, see DHS's eRulemaking

System of Records notice (85 FR 14226, March 11, 2020).

Documents mentioned in this SNPRM as being available in this docket and all public comments, will be in our online docket at *https://www.regulations.gov* and can be viewed by following that website's instructions. Additionally, if you go to the online docket and sign up for email alerts, you will be notified when comments are posted or a final rule is published.

List of Subjects in 33 CFR Part 117

Bridges.

For the reasons discussed in the preamble, the Coast Guard proposes to amend 33 CFR part 117 as follows:

PART 117—DRAWBRIDGE OPERATION REGULATIONS

■ 1. The authority citation for part 117 continues to read as follows:

Authority: 33 U.S.C. 499; 33 CFR 1.05–1; and Department of Homeland Security Delegation No. 0170.1.

■ 2. Amend § 117.313 by revising paragraph (c) to read as follows:

§ 117.313 New River.

* * * * *

(c) The draw of the Florida East Coast (FEC) Railroad Bridge across the New River, mile 2.5, at Fort Lauderdale shall operate as follows:

(1) The drawbridge shall be maintained in the fully open-to-navigation position for vessels at all times, except during period when it is closed for the passage of rail traffic, inspections and to perform periodic maintenance authorized in accordance with subpart A of this part.

(2) The drawbridge shall not be closed to navigation for more than 60 consecutive minutes.

(3) The drawbridge shall open and remain open to navigation for a fixed 10-minute period each hour from 5 a.m. to 11:59 p.m., except that the drawbridge shall be open at the following times which shall serve as the hourly fixed 10-minute period:

—7:00 a.m. until 7:10 a.m.
—9:00 a.m. until 9:10 a.m.
—4:00 p.m. until 4:10 p.m.
—6:00 p.m. until 6:10 p.m.
—10:00 p.m. until 10:10 p.m.

(i) Additionally, in each hour from 12:00 p.m. to 2:59 p.m., the drawbridge shall open and remain open to navigation for an additional 10-minute period.

(ii) The 10-minute opening periods shall be published on a quarterly basis by the drawbridge owner and reflected on the drawbridge owner's website and mobile application.

(4) The drawbridge shall have a drawbridge tender onsite at all times who is capable of physically tending and operating the drawbridge by local control, if necessary, or when ordered by the Coast Guard.

(i) The drawbridge tender shall provide estimated times of drawbridge openings and closures, upon request.

(ii) Operational information will be provided 24 hours a day on VHF–FM channels 9 and 16 or by telephone at (305) 889–5572. Signs shall be posted visible to marine traffic and displaying VHF radio contact information, website and application information, and the telephone number for the bridge tender.

(5) In the event of a drawbridge operational failure, or other emergency circumstances impacting normal drawbridge operations, the drawbridge owner shall immediately notify the Coast Guard Captain of the Port Miami and provide an estimated time of repair and return to normal operations.

(6) A drawbridge log shall be maintained including drawbridge opening and closing times. The drawbridge log should include reasons for those drawbridge closings that interfere with scheduled openings in this part. This drawbridge log shall be maintained by the drawbridge owner and upon request, be provided to the Coast Guard.

(7) A website and mobile application shall be maintained by the drawbridge owner and publish:

(i) Drawbridge opening times required by this subsection;

(ii) Timely updates to schedules; including but not limited to impacts due to emergency circumstances, minor repairs and inspections;

(iii) At least 24-hour advance notice for each schedule in order to facilitate planning by maritime operators; and

(iv) To the extent reasonably practicable, at least 60-minutes advance notice of schedule changes or delays.

(8) The drawbridge shall display the following lights:

(i) When the drawbridge is in the fully open position, green lights shall be displayed to indicate that vessels may pass.

(ii) When rail traffic approaches the block signal, the lights shall go to flashing red, then the drawbridge lowers and locks, and the lights shall remain flashing red.

(iii) After the rail traffic has cleared the drawbridge, the drawbridge shall open and the lights return to green.

* * * * *

Dated: June 21, 2021.

Eric C. Jones,

Rear Admiral, U.S. Coast Guard, Commander Seventh Coast Guard District.

[FR Doc. 2021–13701 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–04–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA–R07–OAR–2021–0378; FRL–10024–86–Region 7]

Air Plan Approval; Iowa; Infrastructure State Implementation Plan Requirements for the 2015 Ozone National Ambient Air Quality Standard

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to approve certain elements of a State Implementation Plan (SIP) submission from the State of Iowa addressing the applicable requirements of section 110 of the Clean Air Act (CAA) for the 2015 Ozone (O_3) National Ambient Air Quality Standard (NAAQS). Section 110 requires that each state adopt and submit a SIP revision to support the implementation, maintenance, and enforcement of each new or revised NAAQS promulgated by the EPA. These SIPs are commonly referred to as ''infrastructure'' SIPs. The infrastructure requirements are designed to ensure that the structural components of each state's air quality management program are adequate to meet the state's responsibilities under the CAA.

DATES: Comments must be received on or before July 29, 2021.

ADDRESSES: You may send comments, identified by Docket ID No. EPA–R07–OAR–2021–0378 to *https://www.regulations.gov.* Follow the online instructions for submitting comments.

Instructions: All submissions received must include the Docket ID No. for this rulemaking. Comments received will be posted without change to *https://www.regulations.gov/,* including any personal information provided. For detailed instructions on sending comments and additional information on the rulemaking process, see the ''Written Comments'' heading of the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: Jason Heitman, Environmental Protection Agency, Region 7 Office, Air Quality Planning Branch, 11201 Renner

Boulevard, Lenexa, Kansas 66219; telephone number (913) 551–7664; email address *heitman.jason@epa.gov.*

SUPPLEMENTARY INFORMATION:

Throughout this document ''we,'' ''us,'' and ''our'' refer to the EPA. A technical support document (TSD) is included in this proposed rulemaking docket.

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I. Written Comments
II. What is being addressed in this document?
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I. Written Comments

Submit your comments, identified by Docket ID No. EPA–R07–OAR–2021–0378, at *https://www.regulations.gov.* Once submitted, comments cannot be edited or removed from *Regulations.gov*. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.,* on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *https://www.epa.gov/dockets/commenting-epa-dockets.*

II. What is being addressed in this document?

The EPA is proposing to approve the infrastructure SIP submission received from the state on November 30, 2018 in accordance with section 110(a)(1) of the CAA. Specifically, the EPA is proposing to approve the following infrastructure elements of section 110(a)(2) of the CAA: (A) through (C), (D)(i)(II)—prevention of significant deterioration of air quality (prong 3) and protection of visibility (prong 4), (D)(ii), (E) through (H), and (J) through (M). Elements of section 110(a)(2)(D)(i)(I)—significant contribution to nonattainment (prong 1) and interfering with maintenance of the NAAQS (prong 2) will be addressed in a separate action.

Section 110(a)(2)(I) was discussed in the submission, however, the EPA does not expect infrastructure SIP submissions to address element (I). Section 110(a)(2)(I) requires states to meet the applicable SIP requirements of part D of the CAA relating to designated nonattainment areas. The specific part D submissions for designated nonattainment areas are subject to different submission schedules than those for section 110 infrastructure elements. The EPA will act on part D attainment plan SIP submissions through a separate rulemaking governed by the requirements for nonattainment areas, as described in part D.

A TSD is included as part of the docket to discuss the details of this proposed action, including an analysis of how the SIP meets the applicable 110 requirements for infrastructure SIPs.

III. Have the requirements for approval of a SIP revision been met?

The state submission has met the public notice requirements for SIP submissions in accordance with 40 CFR 51.102. The submission also satisfied the completeness criteria of 40 CFR part 51, appendix V. The state provided a public comment period for this SIP revision from September 18, 2018 to October 19, 2018, and received two comments related to a request for more stringent ozone requirements and an increase in ozone monitors. The state provided an adequate response to these comments. In addition, as explained in more detail in the TSD which is part of this docket, the revision meets the substantive SIP requirements of the CAA, including section 110 and implementing regulations.

IV. What action is EPA taking?

The EPA is proposing to approve elements of the November 30, 2018, submission addressing the infrastructure elements for the 2015 O_3 NAAQS. Specifically, the EPA is proposing to approve the following infrastructure elements of section 110(a)(2): (A) through(C), (D)(i)(II) prong 3 and prong 4, (D)(ii), (E) through (H), (J) through (M). The EPA is not acting on the elements of section 110(a)(2)(D)(i)(I)—prong 1 and prong 2 at this time. Section 110(a)(2)(I) was discussed in the submission as not being an applicable element and the EPA does not expect section 110(a)(2)(I) to be addressed in an infrastructure SIP submission. The EPA's analysis of the submission is addressed in a TSD which is part of this docket.

We are processing this as a proposed action because we are soliciting comments on this proposed action. Final rulemaking will occur after consideration of any comments.

V. Statutory and Executive Order Reviews

Under the Clean Air Act (CAA), the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the CAA. Accordingly, this action merely approves state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this action:

- Is not a significant regulatory action subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4);
- Does not have federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of the National Technology Transfer and Advancement Act (NTTA) because this rulemaking does not involve technical standards; 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).

The SIP is not approved to apply on any Indian reservation land or in any other area where EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as

specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Infrastructure, Intergovernmental relations, Ozone.

Dated: June 22, 2021.

Edward H. Chu,

Acting Regional Administrator, Region 7.

For the reasons stated in the preamble, the EPA proposes to amend 40 CFR part 52 as set forth below:

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

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

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

Subpart Q—Iowa

■ 2. In § 52.820, the table in paragraph (e) is amended by adding the entry ''(54)'' in numerical order to read as follows:

§ 52.820 Identification of plan.

* * * * *

(e) * * *

EPA-APPROVED IOWA NONREGULATORY PROVISIONS

Name of nonregulatory SIP provision	Applicable geographic or nonattainment area	State submittal date	EPA approval date	Explanation
*	*	*	*	*
(54)Section 110(a)(2) Infrastructure Requirements for the 2015 O_3 NAAQS.	Statewide	11/30/18	[Date of publication of the final rule in the **Federal Register**], [**Federal Register** citation of the final rule].	[EPA–R07–OAR–2021–0378; FRL–10024–86–Region 7]. This action proposes to approve the following CAA elements: 110(a)(2)(A), (B), (C), (D)(i)(II)—prongs 3 and 4, (D)(ii), (E), (F), (G), (H), (J), (K), (L), and (M). 110(a)(2)(D)(i)(I)—prongs 1 and 2 will be addressed in a separate action. 110(a)(2)(I) is not applicable.

[FR Doc. 2021–13824 Filed 6–28–21; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 52 and 81

[EPA–R07–OAR–2021–0391; FRL–10025–26–Region 7]

Air Plan Approval; Missouri Redesignation Request and Associated Maintenance Plan for the Jefferson County 2010 SO_2 1-Hour NAAQS Nonattainment Area

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: On December 27, 2017, the State of Missouri submitted a request for the Environmental Protection Agency (EPA) to redesignate the Jefferson County, Missouri, 2010 1-hour sulfur dioxide (SO_2) National Ambient Air Quality Standard (NAAQS) nonattainment area to attainment and to approve a State Implementation Plan (SIP) revision containing a maintenance plan for the area. The State provided supplemental information on: May 15, 2018; February 7, 2019; February 25, 2019; and April 9, 2021. In response to these submittals, the EPA is proposing to take the following actions: Approve the State's plan for maintaining attainment of the 2010 1-hour SO_2 primary standard in the area; and approve the State's request to redesignate the Jefferson County SO_2 nonattainment area to attainment for the 2010 1-hour SO_2 primary standard.

DATES: Comments must be received on or before July 29, 2021.

ADDRESSES: You may send comments, identified by Docket ID No. EPA–R07–OAR–2021–0391 to *https://www.regulations.gov.* Follow the online instructions for submitting comments.

Instructions: All submissions received must include the Docket ID No. for this rulemaking. Comments received will be posted without change to *https://www.regulations.gov/,* including any personal information provided. For detailed instructions on sending comments and additional information on the rulemaking process, see the ''Written Comments'' heading of the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: Ashley Keas, Environmental Protection Agency, Region 7 Office, Air Quality Planning Branch, 11201 Renner Boulevard, Lenexa, Kansas 66219 at (913) 551–7629 or by email at *keas.ashley@epa.gov.*

SUPPLEMENTARY INFORMATION: Throughout this document ''we,'' ''us,'' and ''our'' refer to the EPA.

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I. Written Comments

Submit your comments, identified by Docket ID No. EPA–R07–OAR–2021–0391, at *https://www.regulations.gov.* Once submitted, comments cannot be edited or removed from *regulations.gov.* The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.,* on the web, cloud, or other file sharing system). For

additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *https://www.epa.gov/dockets/commenting-epa-dockets.*

II. Have the requirements for approval of a SIP revision been met?

The State submission has met the public notice requirements for SIP submissions in accordance with 40 CFR 51.102. The submission also satisfied the completeness criteria of 40 CFR part 51, appendix V. The State provided public notice on the December 2017 SIP submittal from July 31, 2017 to September 7, 2017 and held a public hearing on August 31, 2017. The State received and addressed nineteen combined comments from a total of five sources. The State revised the maintenance plan based on public comment prior to submitting to the EPA.

On April 9, 2021, Missouri submitted a supplement to the SIP revision to the EPA consisting of an addendum to the Consent Agreement between Ameren and Missouri. The Consent Agreement addendum incorporates monitoring, reporting and recordkeeping requirements needed to make the emissions limits contained in the Consent Agreement practically enforceable. Missouri held a public hearing for this SIP supplement on January 28, 2021 and made the supplement available for public review and comment from December 28, 2020 through February 4, 2021. Missouri received supportive comments from Ameren.

In addition, as explained above (and in more detail in the technical support document which is included in the docket for this action), the revision meets the substantive SIP requirements of the CAA, including section 110 and implementing regulations.

III. What is the background for the EPA's proposed actions?

On June 2, 2010, the EPA revised the primary SO_2 NAAQS, establishing a new 1-hour standard of 75 parts per billion (ppb).[1] Under the EPA's regulations at 40 CFR part 50, the 2010 1-hour SO_2 NAAQS is met at a monitoring site when the 3-year average of the annual 99th percentile of daily maximum 1-hour average concentrations is less than or equal to 75 ppb (based on the rounding convention in 40 CFR part 50, appendix T).[2] Ambient air quality monitoring data for the 3-year period must meet a data completeness requirement. A year meets data completeness requirements when all four quarters are complete, and a quarter is complete when at least 75 percent of the sampling days for each quarter have complete data. A sampling day has complete data if 75 percent of the hourly concentration values, including State-flagged data affected by exceptional events which have been approved for exclusion by the Administrator, are reported.[3]

Upon promulgation of a new or revised NAAQS, the CAA requires the EPA to designate as nonattainment any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the NAAQS.[4] On August 5, 2013, the EPA designated a portion of Jefferson County, Missouri, as nonattainment for the 2010 1-hour primary SO_2 NAAQS, effective October 4, 2013.[5] The designation was based on 2008–2010 monitoring data in Herculaneum, Missouri, which monitored violations of the standard (see section III of this document for additional monitoring information). This action established an attainment date five years after the effective date for the areas designated as nonattainment for the 2010 SO_2 NAAQS (*i.e.,* by October 4, 2018). The State was also required to submit a SIP for the Jefferson County SO_2 nonattainment area to the EPA that meets the requirements of CAA sections 110, 172(c) and 191–192 within 18 months following the October 4, 2013, effective date of designation (*i.e.,* by April 4, 2015). The State of Missouri submitted the ''Nonattainment Area Plan for the 2010 1-Hour Sulfur Dioxide National Ambient Air Quality Standard Jefferson County Sulfur Dioxide Nonattainment Area'' on June 5, 2015, and subsequently withdrew the plan on March 30, 2018, following several intervening steps discussed later in this section.

On February 2, 2016, the State submitted a request asking the EPA to determine that the Jefferson County SO_2 nonattainment area attained the 2010 1-hour primary SO_2 NAAQS per the EPA's Clean Data Policy. The clean data policy represents the EPA's interpretation that certain planning-related requirements of part D of the Act, such as the attainment demonstration, reasonably available control measures (RACM), and reasonable further progress (RFP), are suspended for areas that are in fact attaining the NAAQS. A determination of attainment, or clean data determination, does not constitute a formal redesignation to attainment. If the EPA subsequently determines that an area is no longer attaining the standard, those requirements that were suspended by the clean data determination are once again due.

On June 23, 2017, the EPA published a notice of proposed rulemaking to approve the State's request for a clean data determination. The proposal was based on 2014–2016 monitoring data—the Mott Street monitor design value (dv) was 23 parts per billion (ppb)—and modeling data (a mix of 2013–2015 actual and allowable emissions).[6] [7] After considering public comments received, the EPA published a Notice of Final Rulemaking (NFRM) approving the State's request for a clean data determination in the **Federal Register** on September 13, 2017.[8]

On December 27, 2017, the State submitted a request for redesignation of the Jefferson County SO_2 nonattainment area to attainment and a SIP revision containing a 10-year maintenance plan for the area. On May 15, 2018, the State submitted a clarifying letter that Appendix A (containing the emissions inventory for the area) and Appendix B (containing a Consent Agreement for certain sources in the area) of the SIP submittal should be considered part of the SIP revision request. On February 7, 2019, and February 25, 2019, the State submitted supplemental modeling information to the EPA. On April 9, 2021, the State submitted an addendum to the Consent Agreement which contains the emissions limits and monitoring, reporting, and recordkeeping requirements needed to determine compliance with the emissions limits for the covered sources. This proposal document discusses the EPA's review of the redesignation request, the maintenance plan (including Consent Agreement and addendum), and the supplemental information and provides support for the EPA's proposed approval of the request to redesignate the area to attainment and for proposed approval of the 10-year maintenance plan. Additional analysis of the redesignation request, 10-year maintenance plan, Consent Agreement and addendum, and supplemental modeling information is

[1] *See* 75 FR 35520.

[2] *See* 40 CFR 50.17.

[3] 40 CFR part 50, appendix T, section 3(b).

[4] CAA section 107(d)(1)(A)(i).

[5] 78 FR 47191 (August 5, 2013), codified at 40 CFR 81.326.

[6] See 82 FR 28605.

[7] The State or Local Air Monitoring Station (SLAMS) was moved from Main Street to Mott Street in 2011 with EPA approval. The Mott Street SLAMS location was selected to characterize source specific (both SO_2 and lead) emissions from the Doe Run Herculaneum primary lead smelter.

[8] See 82 FR 42945.

provided in a Technical Support Document (TSD) included in the docket to this proposed rulemaking.[9]

IV. What are the criteria for redesignation?

The CAA provides the requirements for redesignating a nonattainment area to attainment. Specifically, section 107(d)(3)(E) of the CAA allows for redesignation of a nonattainment area provided that: (1) The Administrator determines that the area has attained the applicable NAAQS; (2) the Administrator has fully approved the applicable implementation plan for the area under section 110(k); (3) the Administrator determines that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the applicable SIP and applicable federal air pollutant control regulations and other permanent and enforceable reductions; (4) the Administrator has fully approved a maintenance plan for the area as meeting the requirements of section 175A; and (5) the State containing such area has met all requirements applicable to the area under section 110 and part D of the CAA.

V. What is the EPA's analysis of the request?

The EPA's evaluation of Missouri's redesignation request and maintenance plan is based on consideration of the five redesignation criteria provided under CAA section 107(d)(3)(E) and relevant guidance. On April 16, 1992, the EPA provided guidance on redesignation in the General Preamble for the Implementation of title I of the CAA Amendments of 1990 and supplemented this guidance on April 28, 1992.[10] [11] The EPA has provided further guidance on processing redesignation requests in several guidance documents. For the purposes of this action, the EPA will be referencing two of these documents: (1) The September 4, 1992 memo ''Procedures for Processing Requests to Redesignate Areas to Attainment'' (Calcagni Memo); and (2) the EPA's April 23, 2014 memorandum ''Guidance for 1-Hour SO_2 Nonattainment Area SIP Submissions'' (2014 SO_2 Guidance).[12]

Criterion (1)—The Jefferson County SO_2 Nonattainment Area Has Attained the 2010 1-Hour SO_2 NAAQS

For redesignating a nonattainment area to attainment, the CAA requires the EPA to determine that the area has attained the applicable NAAQS (CAA section 107(d)(3)(E)(i)). The EPA determined that the area attained the 2010 1-hour SO_2 NAAQS in its September 2017 NFRM approving the State's request for a clean data determination meeting the requirements of CAA section 107(d)(3)(E)(i). That determination was primarily based on a modeling analysis of recent actual emissions for sources in and around the nonattainment area. As described further in the TSD for this action, the Supplemental modeling submitted by Missouri in February 2019 to support the redesignation request and maintenance plan is based on a modeling demonstration of permanent and enforceable emissions at sources in the nonattainment area that similarly demonstrates the area is attaining the standard. Therefore, the EPA's determination that the area had achieved clean data is consistent with the proposed action to redesignate the area.

Following the EPA's determination that the area had achieved clean data, the EPA reviewed quality assured monitoring data recorded in the EPA's Air Quality System (AQS) from the Mott Street monitoring station. The 3-year, 2018–2020 design value for the Mott Street monitor is 14 ppb and continues to meet the 2010 1-hour SO_2 NAAQS, as shown in Table 1. If the 3-year design value violates the NAAQS prior to the EPA acting in response to the State's request, the EPA will not take final action to approve the redesignation request.[13] As discussed in more detail later in this section, Missouri has committed to continue monitoring in this area in accordance with 40 CFR part 58.

TABLE 1—2015–2020 MOTT STREET MONITOR DATA (PARTS PER BILLION (ppb)); 99TH PERCENTILE (99%) AND 3-YEAR DESIGN VALUE (dv)

Site	2015 99th %	2016 99th %	2017 99th %	2018 99th %	2019 99th %	2020 99th %	2015–2017 dv	2016–2018 dv	2017–2019 dv	2018–2020 dv
Mott Street	38	13	18	12	12	17	23	14	14	14

Criterion (2)—Missouri Has a Fully Approved SIP Under Section 110(k); and Criterion (5)—Missouri Has Met All Applicable Requirements Under Section 110 and Part D of Title I of the CAA

For redesignating a nonattainment area to attainment under a NAAQS, the CAA requires the EPA to determine that the State has met all applicable requirements for that NAAQS under section 110 and part D of title I of the CAA (CAA section 107(d)(3)(E)(v)) and that the State has a fully approved SIP under section 110(k) for that NAAQS for the area (CAA section 107(d)(3)(E)(ii)). The EPA proposes to find that Missouri has met all applicable SIP requirements for purposes of redesignation for the Jefferson County SO_2 nonattainment area under section 110 of the CAA (general SIP requirements). Additionally, the EPA proposes to find that the Missouri SIP satisfies the criterion that it meets applicable SIP requirements for purposes of redesignation under part D of title I of the CAA in accordance with section 107(d)(3)(E)(v). Further, the EPA proposes to determine that the SIP is fully approved with respect to all requirements applicable for the 2010 1-hour SO_2 NAAQS for purposes of redesignation in accordance with section 107(d)(3)(E)(ii). In proposing to make these determinations, the EPA ascertained which requirements are applicable to the Jefferson County SO_2 nonattainment area and, if applicable, that they are fully approved under section 110(k).

[9] The TSD discusses the EPA's review of the CAA section 107(d)(3)(E) redesignation criteria: (i) A determination of attainment; (iii) a determination that the improvement in air quality is due to permanent and enforceable reductions in emissions; and (iv) a fully approved maintenance plan as well CAA section 175A maintenance plan criteria: (1) Attainment inventory; (2) maintenance demonstration; and (3) continued monitoring. The EPA's review of the remaining redesignation and maintenance plan criteria are sufficiently addressed in the preamble language to the NPRM.

[10] See 57 FR 13498.

[11] See 57 FR 18070.

[12] *https://www.epa.gov/sites/production/files/2016-06/documents/20140423guidance_nonattainment_sip.pdf.*

[13] See 2014 SO_2 Guidance, at 56.

a. The Jefferson County SO_2 Nonattainment Area Has Met All Applicable Requirements Under Section 110 and Part D of the CAA

General SIP requirements. General SIP elements and requirements are delineated in section 110(a)(2) of title I, part A of the CAA. These requirements include, but are not limited to, the following: Submittal of a SIP that has been adopted by the State after reasonable public notice and hearing; provisions for establishment and operation of appropriate procedures needed to monitor ambient air quality; implementation of a source permit program; provisions for the implementation of part C requirements (Prevention of Significant Deterioration (PSD)) and provisions for the implementation of part D requirements (New Source Review (NSR) permit programs); provisions for air pollution modeling; and provisions for public and local agency participation in planning and emissions control rule development.

Section 110(a)(2)(D) requires that SIPs contain certain measures to prevent sources in a State from significantly contributing to air quality problems in another State. To implement this provision, the EPA has required certain States to establish programs to address the interstate transport of air pollutants. The section 110(a)(2)(D) requirements for a State are not linked with a nonattainment area's designation and classification in that State. The EPA believes that the requirements linked with a nonattainment area's designation and classifications are the relevant measures to evaluate in reviewing a redesignation request. The transport SIP submittal requirements, where applicable, continue to apply to a State regardless of the designation of any one area in the State. Thus, the EPA does not believe that the CAA's interstate transport requirements should be construed to be applicable requirements for purposes of redesignation.

In addition, the EPA believes other section 110 elements that are neither connected with nonattainment plan submissions nor linked with an area's attainment status are applicable requirements for purposes of redesignation. The area will still be subject to these requirements after the area is redesignated. The section 110 and part D requirements which are linked with an area's designation and classification are the relevant measures to evaluate in reviewing a redesignation request. This approach is consistent with the EPA's existing policy on applicability (*i.e.,* for redesignations) of conformity and oxygenated fuels requirements, as well as with section 184 ozone transport requirements.[14]

Title I, part D, applicable SIP requirements. Section 172(c) of the CAA sets forth the basic requirements of attainment plans for nonattainment areas that are required to submit them pursuant to section 172(b). Subpart 5 of part D, which includes section 191 and 192 of the CAA, establishes requirements for SO_2, nitrogen dioxide and lead nonattainment areas. A thorough discussion of the requirements contained in sections 172(c) can be found in the General Preamble for Implementation of Title I.[15]

Section 172 and subpart 5 requirements. Section 172(c)(1) requires the plans for all nonattainment areas to provide for the implementation of all RACM as expeditiously as practicable and to provide for attainment of the NAAQS. The EPA interprets this requirement to impose a duty on all nonattainment areas to consider all available control measures and to adopt and implement such measures as are reasonably available for implementation in each area as components of the area's attainment demonstration. Under section 172, States with nonattainment areas must submit plans providing for timely attainment and meeting a variety of other requirements.

The EPA's longstanding interpretation of the nonattainment planning requirements of section 172 is that once an area is attaining the NAAQS, those requirements are not ''applicable'' for purposes of CAA section 107(d)(3)(E)(ii) and (v) and therefore need not be approved into the SIP before the EPA can redesignate the area. In the 1992 General Preamble for Implementation of Title I, the EPA set forth its interpretation of applicable requirements for purposes of evaluating redesignation requests when an area is attaining a standard.[16] The EPA noted that the requirements for RFP and other measures designed to provide for attainment do not apply in evaluating redesignation requests because those nonattainment planning requirements ''have no meaning'' for an area that has already attained the standard.[17] This interpretation was also set forth in the Calcagni Memo. The EPA's understanding of section 172 also forms the basis of its Clean Data Policy, which was articulated with regard to the 2010 1-hour SO_2 NAAQS in the EPA's 2014 SO_2 Guidance, and suspends a State's obligation to submit most of the attainment planning requirements that would otherwise apply, including an attainment demonstration and planning SIPs to provide for RFP, RACM, and contingency measures under section 172(c)(9). Courts have upheld the EPA's interpretation of section 172(c)(1) for ''reasonably available'' control measures and control technology as meaning only those controls that advance attainment, which precludes the need to require additional measures where an area is already attaining.[18]

Therefore, because the Jefferson County SO_2 nonattainment area is currently attaining the 2010 1-hour SO_2 NAAQS, no additional measures are needed to provide for attainment, and section 172(c)(1) requirements for an attainment demonstration and RACM are not part of the ''applicable implementation plan'' required to have been approved prior to redesignation per CAA section 107(d)(3)(E)(ii) and (v). The other section 172 requirements that are designed to help an area achieve attainment—the section 172(c)(2) requirement that nonattainment plans contain provisions promoting reasonable further progress, the requirement to submit the section 172(c)(9) contingency measures, and the section 172(c)(6) requirement for the SIP to contain control measures necessary to provide for attainment of the NAAQS—are also not required to be approved as part of the ''applicable implementation plan'' for purposes of satisfying CAA section 107(d)(3)(E)(ii) and (v).

Section 172(c)(3) requires submission and approval of a comprehensive, accurate, and current inventory of actual emissions. The requirement for an emissions inventory can be satisfied by meeting the inventory requirements of the maintenance plan.[19] However, when the State withdrew its attainment plan for the area in March 2018, it did not withdraw the baseline emissions inventory submitted with that plan. On November 23, 2018, the EPA published a notice of proposed rulemaking in the **Federal Register** proposing to approve that the State met the section 172(c)(3)

[14] *See* Reading, Pennsylvania, proposed and final rulemakings (61 FR 53174–53176, October 10, 1996), (62 FR 24826, May 7, 2008); Cleveland-Akron-Loraine, Ohio, final rulemaking (61 FR 20458, May 7, 1996); and Tampa, Florida, final rulemaking at (60 FR 62748, December 7, 1995). *See also* the discussion on this issue in the Cincinnati, Ohio, redesignation (65 FR 37890, June 19, 2000), and in the Pittsburgh, Pennsylvania, redesignation (66 FR 50399, October 19, 2001).

[15] See 57 FR 13498.

[16] *See* 57 FR 13498, 13564.

[17] *Id.*

[18] *NRDC* v. *EPA,* 571 F.3d 1245, 1252 (D.C. Cir. 2009); *Sierra Club* v. *EPA,* 294 F.3d 155, 162 (D.C. Cir. 2002); *Sierra Club* v. *EPA,* 314 F.3d 735, 744 (5th Cir. 2002); *Sierra Club* v. *EPA,* 375 F.3d 537 (7th Cir. 2004). But see *Sierra Club* v. *EPA,* 793 F.3d 656 (6th Cir. 2015).

[19] Calcagni Memo at 6.

requirement to submit an emissions inventory for the Jefferson County SO_2 nonattainment area.[20] On February 13, 2019, the EPA published a final rulemaking in the **Federal Register** approving the State's emissions inventory for the Jefferson County SO_2 nonattainment area.[21]

Section 172(c)(4) requires the identification and quantification of allowable emissions for major new and modified stationary sources to be allowed in an area, and section 172(c)(5) requires source permits for the construction and operation of new and modified major stationary sources anywhere in the nonattainment area. The State has an approved nonattainment NSR program.[22] Regardless, the State has demonstrated that the Jefferson County SO_2 nonattainment area will be able to maintain the NAAQS without part D NSR in effect. Missouri's PSD program will be in effect in the Jefferson County SO_2 nonattainment area upon redesignation to attainment.

Section 172(c)(7) requires the SIP to meet the applicable provisions of section 110(a)(2). As noted above, the EPA believes the Missouri SIP meets the requirements of section 110(a)(2) applicable for purposes of redesignation.

Section 176 conformity requirements. Section 176(c) of the CAA requires States to establish criteria and procedures to ensure that federally supported or funded projects conform to the air quality planning goals in the applicable SIP. The requirement to determine conformity applies to transportation plans, programs, and projects that are developed, funded, or approved under title 23 of the United States Code (U.S.C.) and the Federal Transit Act (transportation conformity) as well as to all other federally supported or funded projects (general conformity). State transportation conformity SIP revisions must be consistent with federal conformity regulations relating to consultation, enforcement, and enforceability that the EPA promulgated pursuant to its authority under the CAA.

Missouri has an approved general conformity SIP.[23] Moreover, the EPA interprets the conformity SIP requirements as not applying for purposes of evaluating a redesignation request under section 107(d) because, like other requirements listed above, State conformity rules are still required after redesignation and federal conformity rules apply where State rules have not been approved.[24]

As noted in the 2014 SO_2 Guidance, transportation conformity is required under CAA section 176(c) to ensure that federally supported highway and transit project activities are consistent with (''conform to'') the purpose of the SIP. Transportation conformity applies to areas that are designated nonattainment, and those areas redesignated to attainment (''maintenance areas'' with plans developed under CAA section 175A) for transportation-related criteria pollutants. Due to the relatively small, and decreasing, amounts of sulfur in gasoline and on-road diesel fuel, the EPA's conformity rules provide that they do not apply to SO_2 unless either the EPA Regional Administrator or the director of the State air agency has found that transportation-related emissions of SO_2 as a precursor are a significant contributor to a $PM_{2.5}$ nonattainment problem, or if the SIP has established an approved or adequate budget for such emissions as part of the RFP, attainment or maintenance strategy.[25] Neither the EPA nor Missouri has made such a finding for transportation related emissions of SO_2 for the Jefferson County SO_2 nonattainment area.

For these reasons, the EPA proposes to find that Missouri has satisfied all applicable requirements for purposes of redesignation of the Jefferson County SO_2 nonattainment area under section 110 and part D of title I of the CAA.

b. The Jefferson County SO_2 Nonattainment Area Has a Fully Approved Applicable SIP Under Section 110(k) of the CAA

The EPA has fully approved the applicable Missouri SIP for the Jefferson County SO_2 nonattainment area under section 110(k) of the CAA for all requirements applicable for purposes of redesignation. As indicated above, the EPA believes that the section 110 elements that are neither connected with nonattainment plan submissions nor linked to an area's attainment status are not applicable requirements for purposes of redesignation. The EPA has approved all part D requirements applicable under the 2010 SO_2 NAAQS, as identified above, for purposes of this redesignation.

Criterion (3)—The Air Quality Improvement in the Jefferson County SO_2 Nonattainment Area Is Due to Permanent and Enforceable Reductions in Emissions

For redesignating a nonattainment area to attainment, the CAA requires the EPA to determine that the air quality improvement in the area is due to permanent and enforceable reductions in emissions resulting from implementation of the SIP, applicable federal air pollution control regulations, and other permanent and enforceable reductions (CAA section 107(d)(3)(E)(iii)). The EPA proposes to find that Missouri has demonstrated that the observed air quality improvement in the Jefferson County SO_2 nonattainment area is due to permanent and enforceable reductions in emissions. Specifically, the EPA considers the shutdown of the Doe Run Herculaneum primary lead smelter (lead smelter), identified as the key contributor to the SO_2 NAAQS violations at the Mott Street monitor, to be both permanent and enforceable.[26] As stated on page 10 of the Calcagni Memo, ''Emission reductions from source shutdowns can be considered permanent and enforceable to the extent that those shutdowns have been reflected in the SIP and all applicable permits have been modified accordingly.'' The lead smelter was limited to the terms of a consent decree entered by Doe Run, Missouri, and the EPA in the United States District Court in the Eastern District of Missouri (2011 Consent Decree).[27] On December 31, 2013, pursuant to the terms of the 2011 Consent Decree, the lead smelter permanently ceased operations of the sintering plant. The 2011 Consent Decree also required the lead smelter to permanently cease smelting operations and retire the blast furnaces by April 30, 2014; the lead smelter ceased operation of the blast furnaces on December 31, 2013, concurrently with the cessation of operation of the sintering plant. In addition, the Consent Decree required Doe Run to surrender air permits for the emission units required to be permanently shut down by the Consent Decree. Given the well-established correlation of much lower SO_2 emissions at the Mott Street monitor during periods when the lead smelter has been shut down, the EPA

[20] See 83 FR 59348.

[21] See 84 FR 3703.

[22] See 80 FR 31844.

[23] See 78 FR 57267.

[24] *See Wall* v. *EPA,* 265 F.3d 426 (6th Cir. 2001) (upholding this interpretation); *see also* 60 FR 62748 (December 7, 1995) (redesignation of Tampa, Florida).

[25] See 40 CFR 93.102(b)(1), (2)(v).

[26] See EPA's final Technical Support Document (TSD) for the Jefferson County SO_2 Nonattainment Area, in the docket for EPA's initial round of 2010 SO_2 designations at EPA–HQ–OAR–2012–0233–0318.

[27] Case No. 4:10–cv–01895–JCH on December 21, 2011.

anticipates that the SO_2 NAAQS will continue to be attained. See Table 1 for recent monitoring data trends at this monitor.

Additionally, the State entered into a Consent Agreement with Ameren Missouri (Ameren), included as Appendix B to the maintenance plan submission, limiting the SO_2 emissions from three Ameren facilities. One facility, Ameren-Rush Island Energy Center (Rush Island), is located within the nonattainment area boundary. The other two facilities, Ameren Meramec Energy Center (Meramec) and Ameren Labadie Energy Center (Labadie) are located outside of the nonattainment area boundary. The Consent Agreement emission limits are provided in Table 2.

TABLE 2—AMEREN/MISSOURI CONSENT AGREEMENT SO_2 EMISSION LIMITS

Source	Emission limit per source (pounds per hour)	Averaging time
Labadie	40,837	24-hr block average.
Meramec	7,371	24-hr block average.
Rush Island	13,600	24-hr block average.

Because it is located inside of the Jefferson County SO_2 nonattainment area, the State modeled Rush Island at a constant emission rate of 14,600 lbs SO_2/hr for every hour of the year in all five years (2013–2017) of the modeling analysis. This modeled emission rate corresponds to the facility's enforceable 24-hour block average limit for hourly SO_2 emissions of 13,600 lbs SO_2/hr when accounting for variability. The State modeled Meramec and Labadie as nearby sources in accordance with the code of federal regulations (CFR) 40 CFR part 51, appendix W, *Guideline on Air Quality Models.* That is, the State modeled Meramec and Labadie's permitted/allowable emission rate from the Consent Agreement with actual temporally varying heat input levels. Please see the TSD for details of the modeling inputs and additional discussion of the air quality modeling. The modeling results demonstrate attainment and project continued maintenance of the NAAQS, and the TSD also contains discussion of the EPA's review of the modeling.

Therefore, the EPA is proposing to find that the air quality improvement in the Jefferson County SO_2 nonattainment area is due to permanent and enforceable reductions in emissions.

Criterion (4)—The Jefferson County SO_2 Nonattainment Area Has a Fully Approved Maintenance Plan Pursuant to Section 175A of the CAA

To redesignate a nonattainment area to attainment, the CAA requires the EPA to determine that the area has a fully approved maintenance plan pursuant to section 175A of the CAA (CAA section 107(d)(3)(E)(iv)). In conjunction with its request to redesignate the Jefferson County SO_2 nonattainment area to attainment for the 2010 1-hour SO_2 NAAQS, the State submitted a SIP revision to provide for the maintenance of the 2010 1-hour SO_2 NAAQS for at least 10 years after the effective date of redesignation to attainment. The EPA is proposing to find that this maintenance plan for the area meets the requirements for approval under section 175A of the CAA.

a. What is required in a maintenance plan?

CAA section 175A sets forth the elements of a maintenance plan for areas seeking redesignation from nonattainment to attainment. Under section 175A, the plan must demonstrate continued attainment of the applicable NAAQS for at least 10 years after the Administrator approves a redesignation request to attainment. Eight years after the redesignation, the State must submit a revised maintenance plan demonstrating that attainment will continue to be maintained for the 10 years following the initial 10-year period. To address the possibility of future NAAQS violations, the maintenance plan must contain contingency measures as the EPA deems necessary to assure prompt correction of any future 2010 1-hour SO_2 violations. The Calcagni Memo provides further guidance on the content of a maintenance plan, explaining that a maintenance plan should address five requirements: The attainment emissions inventory, maintenance demonstration, monitoring, verification of continued attainment, and a contingency plan. As is discussed more fully later in this section, the EPA is proposing to determine that Missouri's maintenance plan includes all the necessary components and is thus proposing to approve it as a revision to the Missouri SIP.

b. Attainment Emissions Inventory

As part of a State's maintenance plan, the air agency should develop an attainment inventory to identify the level of emissions in the affected area which is enough to attain and maintain the SO_2 NAAQS.[28] The EPA is proposing to approve that Missouri has met this requirement through modeling of permanent and enforceable emissions limits that will result in continued attainment and maintenance of the NAAQS. Missouri also provided emissions inventories as part of the maintenance plan. Specifically, Missouri selected 2014 as the attainment emissions inventory year for developing an emissions inventory for SO_2 in the nonattainment area through 2030. Please see the TSD included in the docket for this action for details of the base year, attainment year and future year emissions inventories and the EPA's review of these inventories. The TSD also details the EPA's review of the modeling demonstration provided by Missouri which forms the basis for the EPA's approval of this maintenance plan requirement.

c. Maintenance Demonstration

The Calcagni memo describes two ways for a State to demonstrate maintenance of the NAAQS for a period of at least 10 years following the redesignation of the area: (1) The State can show that future emissions of a pollutant will not exceed the level of the attainment inventory, or (2) the State can model to show that the future mix of sources and emission rates will not cause a violation of the standard. The memo goes on to say that areas that are required to model to demonstrate attainment of the standard should complete the same level of modeling to demonstrate that the permanent and enforceable emissions are enough to maintain the standard. The State performed several modeling iterations to demonstrate that the standard will be maintained. In its February 7, 2019, and February 25, 2019, supplemental

[28] See 2014 SO_2 Guidance, at 66.

modeling, Missouri has demonstrated maintenance by modeling all sources inside of the nonattainment area at their permanent, enforceable, allowable emission rates, nearby sources at their permanent, enforceable, allowable emission rates (with actual operating conditions for 2013–2017), and other sources addressed through the use of a background concentration. The EPA proposes that the supplemental modeling provided by Missouri demonstrates the standard will be attained and maintained for at least 10 years following redesignation of the area, consistent with the second method outlined in the Calcagni memo by which a State may demonstrate maintenance of the NAAQS. Please see the TSD for details of the modeling inputs, results and the EPA's review of them. The EPA is proposing to approve Missouri's maintenance plan including the supplemental modeling and a background concentration revised by the EPA as meeting the maintenance demonstration requirement.

d. Monitoring Network

Missouri has committed to continue operating the ''appropriate SO_2 network in the Jefferson County nonattainment area'' in accordance with the requirements of 40 CFR part 58, and approved annual monitoring network plans, to verify the attainment status of the area. The State committed to quality assure the data in accordance with 40 CFR part 58 and submit the data to the EPA's air quality system (AQS). The maintenance plan, consistent with the State's 2019 annual ambient monitoring network plan, indicate that the Mott Street monitor is the only SLAMS or SLAMS like monitor operational in the nonattainment area.[29]

There are also three industrial source monitors located around Rush Island.[30] These monitors are required per the Consent Agreement between Ameren and the State.[31] The Consent Agreement required the monitors to start operation by December 2015 and operate 12 consecutive quarters (3 years). The industrial source monitors have also been identified in the State's annual ambient monitoring network plans since 2015.[32] The Consent Agreement also requires certain responses by Ameren if elevated monitoring values are recorded at any of the industrial source monitors.

The maintenance plan and Consent Agreement requires Ameren to operate the industrial source monitors for a minimum of 12 consecutive quarters. The maintenance plan and Consent Agreement do not establish that the monitors must be operated as SLAMS-like monitors which would make them subject to the discontinuation requirements of 40 CFR part 58.[33] However, because the EPA is proposing to approve the requirement to operate the industrial source monitors, and that the contingency measures may be triggered by data recorded by these industrial source monitors, as contained in the Consent Agreement, into the SIP, the monitors must operate until the EPA approves a revision to the SIP to remove the monitoring requirements.

Because the industrial source monitors were not identified by the State as necessary to meet the requirements of the Data Requirements Rule (DRR) they are not subject to the requirements of 40 CFR 51.1203(c).[34] The 2018 annual monitoring network plan commits the State to ''continuing to work with Ameren to collect quality assured SO_2 ambient air quality data and meteorological data near the Rush Island power station to provide quantifiable and useful information to supplement the ongoing 1-hour SO_2 NAAQS implementation process.''

Because there is no regulatory obligation, or commitment from Ameren or the State to operate the industrial source monitors as SLAMS-like or for the duration of the maintenance period, the EPA is proposing to approve that the State is meeting its obligation to continue monitoring in the area, and verify ongoing attainment and maintenance, via operation of the Mott Street SLAMS monitor and that Missouri's maintenance plan meets the ''Monitoring Network'' requirement.[35] However, as previously noted, because the EPA is proposing to approve the Consent Agreement into the SIP, continued operation of the industrial source monitors will be required until the EPA approves a revision to the SIP to remove the monitoring requirements.[36] The available recent monitoring data from these industrial monitors is included in the TSD associated with this action.

e. Verification of Continued Attainment

Each air agency should ensure that it has the legal authority to implement and enforce all measures necessary to attain and maintain the 2010 SO_2 NAAQS. The air agency's submittal should indicate how it will track the progress of the maintenance plan for the area either through air quality monitoring or modeling.[37]

Missouri has the legal authority to enforce and implement the maintenance plan for the Jefferson County 2010 SO_2 nonattainment area. This includes the authority to adopt, implement, and enforce any subsequent emissions control contingency measures determined to be necessary to correct future SO_2 attainment problems.[38] As noted, the State will track the progress of the maintenance plan by continuing to operate the Mott Street monitor. Additionally, the State committed to provide future inventory updates to track emissions during the 10-year maintenance period. State Regulation 10 CSR 10–6.110, *Reporting Emission Data, Emission Fees, and Process Information,* (which is SIP approved) requires that all installations with a construction or operating permit report its annual emissions to the State. The methods for calculating and reporting emissions are detailed in each installation's applicable permit. The data collected on emissions inventory questionnaires from permitted sources form the basis of the point source emissions inventory that is

[29] See Missouri's 2019 Ambient Monitoring Network Plan contained in the docket for this action.

[30] The industrial monitors are not classified as SLAMS nor as Data Requirements Rule monitors.

[31] The Consent Agreement is included as Appendix B of the maintenance plan.

[32] The EPA approved the State's 2019 Ambient Monitoring Network Plan via letter dated January 8, 2021. Missouri's 2019 Plan and the EPA's approval letter are included in the docket for this action.

[33] However, the EPA notes that the industrial source monitors are operated in accordance with an approved industrial source monitoring quality assurance project plan (QAPP) and quality management plan (QMP). The relevant QAPP and QMP documents are included in the docket for this action. The QMP outlines the quality assurance audits to be conducted by Missouri staff to ensure the industrial monitoring data is collected in a manner equivalent to SLAMS and may be used to determine NAAQS compliance. See Missouri's 2016 Ambient Monitoring Network Plan contained in the docket for this action for more information.

[34] The EPA promulgated the DRR August 21, 2015. The DRR requires air agencies to characterize air quality, either by monitoring or modeling, around sources that emit 2,000 tons per year (tpy) or more of SO_2. The requirement for air quality characterization near a source may be avoided by adopting enforceable emission limits that ensure that the source will not emit more than 2,000 tpy of SO_2. On January 15, 2016, the State submitted a final list identifying the sources in the State around which SO_2 air quality will be characterized. Rush Island was not included in the list because it is within the Jefferson County SO_2 nonattainment area. Starting in 2016, Missouri's annual monitoring network plans state that monitoring around Rush Island is being conducted by agreement between the State and Ameren.

[35] Any change in the operational status or location of the Mott Street monitor must be approved by the Regional Administrator in accordance with the requirements of 40 CFR part 58.

[36] The EPA would also need to approve the monitor changes as part of the State's annual monitoring network plan.

[37] See 2014 SO_2 Guidance at 67–68.

[38] The EPA last determined that Missouri's SIP was sufficient to meet the requirements of section 110(a)(2)(E)(i) of the CAA on March 22, 2018 (83 FR 12496).

compiled annually.[39] In addition, in compliance with the EPA's Air Emissions Reporting Requirements [80 FR 8787], Missouri develops a comprehensive emissions inventory of point, area, and mobile sources every 3 years. This triennial inventory compiled by the State is contained in the EPA's national emissions inventory (NEI) which is made publicly available every 3 years. For these reasons, the EPA is proposing to find that Missouri's maintenance plan meets the ''Verification of Continued Attainment'' requirement.

f. Contingency Measures in the Maintenance Plan

Section 175A of the CAA requires that a maintenance plan include such contingency measures as the EPA deems necessary to assure that the State will promptly correct a violation of the NAAQS that occurs after redesignation. The maintenance plan should identify the contingency measures to be adopted, a schedule and procedure for adoption and implementation, and a time limit for action by the State. A State should also identify specific indicators to be used to determine when the contingency measures need to be implemented. The maintenance plan must also include a requirement that a State will implement all measures with respect to control of the pollutant that were contained in the SIP before redesignation of the area to attainment in accordance with section 175A(d).

The contingency plan includes a triggering mechanism to determine when contingency measures are needed and a process of developing and implementing appropriate control measures. The triggering mechanisms contained in the maintenance plan and Consent Agreement are based on monitoring data from the Mott Street monitor and the industrial source monitors around the Ameren Rush Island facility. The EPA finds it appropriate to rely on monitoring data to trigger the contingency plan because the Mott Street monitor is being relied upon to demonstrate continued maintenance in the area as discussed in the Monitoring Network section of this document. Additionally, the industrial source monitors were sited consistent with relevant EPA guidance to capture maximum impacts from the Rush Island plant.[40] Because the Rush Island plant is the largest remaining source in the maintenance area, the EPA agrees that monitoring around the Rush Island plant would be the best indicator of any potential future air quality issues in the maintenance area and thereby represents a reasonable triggering mechanism for the State's contingency plan.

The State listed two types of triggers of its contingency plan. The first, a ''warning level response,'' will be triggered by a 99th percentile of daily maximum 1-hour average SO_2 concentrations greater than 79 ppb in a single calendar year in the Jefferson County maintenance area. The second, an ''action level response,'' will be triggered if a violation of the NAAQS is recorded in the Jefferson County maintenance area, specifically if the 3-year average of annual 99th percentile daily maximum 1-hour concentrations is 76 ppb or higher.

If the warning level response is triggered, a study must be completed to determine whether the monitored SO_2 value indicates a trend toward higher concentrations in the Jefferson County maintenance area. The study will evaluate whether the trend, if any, is likely to continue. The study shall be completed as expeditiously as possible, but no later than 24 months after the State has determined that a warning level response has been triggered. It should be noted that the EPA does not require a State to implement contingency measures when occasional exceedances are recorded.

If the action level response is triggered and is not found to be due to an exceptional event as defined at 40 CFR part 50.1(j), measures to address the violation shall be implemented as expeditiously as possible, but no later than 24 months after quality assured ambient data that has been entered into the AQS database indicating that this trigger has occurred. If a new measure or control is already promulgated and scheduled to be implemented at the federal or State level, and that measure or control is determined to be enough to address the upward trend in ambient SO_2 concentrations within the maintenance area, additional local measures may be unnecessary. Furthermore, Missouri will submit to the EPA an analysis demonstrating the proposed action level response measures are adequate to return the area to attainment. Contingency measures considered will be based on an analysis of the cause of the elevated ambient SO_2 concentrations from the entity(ies) likely to be contributing to the elevated concentrations. Measures may include improvements to existing control devices, addition of secondary control devices or improvements in housekeeping and maintenance, among other measures. It is not possible to develop a comprehensive list of contingency measures that can address all possible violations until the cause of the elevated concentrations is known. Any contingency measures implemented will require a compliance plan and expeditious compliance timeline from the entity(ies) involved. The EPA is proposing to find that Missouri's maintenance plan meets the ''Contingency Measures'' requirement.

In addition to the contingency plan contained in the maintenance plan, the Consent Agreement contains specific contingency plan triggers and requirements for Ameren. Specifically, the Consent Agreement requires that Ameren perform an air quality analysis if any elevated monitoring values are recorded (one occurrence of a measured SO_2 concentration that exceeds 75 ppb for one hour) at any of the three industrial source monitors. Ameren must submit this air quality analysis including the monitored information and any relevant operational information to Missouri within a specified time frame.

If through discussion of the air quality analysis, it is established that the elevated monitoring values were attributable to Ameren Rush Island, Ameren would provide the State with proposed potential mitigation measures, SO_2 emissions limitations, and a compliance schedule.

The EPA proposes to conclude that the maintenance plan adequately addresses the five basic components of a maintenance plan: The attainment emissions inventory, maintenance demonstration, monitoring, verification of continued attainment, and a contingency plan. Therefore, the EPA proposes to find that the maintenance plan SIP revision submitted by Missouri for the Jefferson County 2010 SO_2 nonattainment area meets the requirements of section 175A of the CAA and proposes to approve the plan.

VI. What are the actions the EPA is proposing to take?

The EPA is proposing to approve the maintenance plan for the Jefferson County 2010 SO_2 1-hour NAAQS nonattainment area into the Missouri SIP (as compliant with CAA section 175A). The maintenance plan demonstrates that the area will continue to maintain the 2010 1-hour SO_2 NAAQS and includes a process to develop contingency measures to remedy any future violations of the 2010

[39] This information is available to the EPA or members of the public upon request from the State of Missouri.

[40] See Missouri's 2015 and 2016 annual monitoring network plans contained in the docket for this action for more information about the siting of the monitors around Rush Island.

1-hour SO_2 NAAQS and procedures for evaluation of potential violations.

Additionally, the EPA is proposing to determine that the Jefferson County 2010 SO_2 1-hour NAAQS nonattainment area has met the criteria under CAA section 107(d)(3)(E) for redesignation from nonattainment to attainment for the 2010 1-hour SO_2 NAAQS. On this basis, the EPA is proposing to approve Missouri's redesignation request for the area. Final approval of Missouri's redesignation request would change the legal designation of the portion of Jefferson County designated nonattainment at 40 CFR part 81 to attainment for the 2010 1-hour SO_2 NAAQS.

VII. Environmental Justice Concerns

When the EPA establishes a new or revised NAAQS, the CAA requires the EPA to designate all areas of the U.S. as either nonattainment, attainment, or unclassifiable. Area designations address environmental justice concerns by ensuring that the public is properly informed about the air quality in an area. If an area is designated in nonattainment of the NAAQS, the CAA provides for the EPA to redesignate the area to attainment upon a demonstration by the state authority that air quality is attaining the NAAQS and will continue to maintain the NAAQS in order to ensure that all those residing, working, attending school, or otherwise present in those areas are protected, regardless of minority and economic status.

VIII. Incorporation by Reference

In this document, the EPA is proposing to amend regulatory text that includes incorporation by reference. In accordance with the requirements of 1 CFR 51.5, the EPA is proposing to incorporate by reference the Missouri State Implementation Plan described in the proposed amendments to 40 CFR part 52 set forth below. The EPA has made, and will continue to make, these materials generally available through *www.regulations.gov* and at the EPA Region 7 Office (please contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section of this preamble for more information).

IX. Statutory and Executive Order Reviews

Under the Clean Air Act (CAA), the Administrator is required to approve a SIP submission that complies with the provisions of the Act and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, the EPA's role is to approve State choices, if they meet the criteria of the CAA. Accordingly, this action merely approves State law as meeting Federal requirements and does not impose additional requirements beyond those imposed by State law. For that reason, this action:

- Is not a significant regulatory action subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104–4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);
- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of the National Technology Transfer and Advancement Act (NTTA) because this rulemaking does not involve technical standards; and
- This action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). The analysis for this determination is contained in Section VII of this action, ''Environmental Justice Concerns.''

The SIP is not approved to apply on any Indian reservation land or in any other area where the EPA or an Indian tribe has demonstrated that a tribe has jurisdiction. In those areas of Indian country, the rule does not have tribal implications and will not impose substantial direct costs on tribal governments or preempt tribal law as specified by Executive Order 13175 (65 FR 67249, November 9, 2000).

List of Subjects

40 CFR Part 52

Environmental protection, Air pollution control, Incorporation by reference, Maintenance plan, Redesignation, Sulfur oxides.

40 CFR Part 81

Environmental protection, Air pollution control, Designations, Redesignation, Intergovernmental relations, Reporting and recordkeeping requirements, Sulfur oxides.

Dated: June 22, 2021.

Edward H. Chu,

Acting Regional Administrator, Region 7.

For the reasons stated in the preamble, the EPA proposes to amend 40 CFR parts 52 and 81 as set forth below:

PART 52—APPROVAL AND PROMULGATION OF IMPLEMENTATION PLANS

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

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

Subpart AA—Missouri

■ 2. In § 52.1320:

■ a. The table in paragraph (d) is amended by adding the entry ''(34)'' in numerical order.

■ b. The table in paragraph (e) is amended by adding the entry ''(79)'' in numerical order.

The additions read as follows:

§ 52.1320 Identification of plan.

* * * * *

(d) * * *

EPA-APPROVED MISSOURI SOURCE-SPECIFIC PERMITS AND ORDERS

Name of source	Order/permit No.	State effective date	EPA approval date	Explanation
* *	*	*	*	* *
(34) Ameren Missouri	Consent Agreement and Addendum No. APCP–2015–034.	12/14/2020	[Date of publication of the final rule in the **Federal Register**], [**Federal Register** citation of the final rule].	

(e) * * *

EPA-APPROVED MISSOURI NONREGULATORY SIP PROVISIONS

Name of nonregulatory SIP revision	Applicable geographic or nonattainment area	State submittal date	EPA approval date	Explanation
* *	*	*	*	* *
(79) Jefferson County 1-hour SO_2 NAAQS Maintenance Plan and Supplemental Modeling Analyses.	Jefferson County	12/27/17; 5/15/18; 2/7/19; 2/25/19; and 4/9/21	[Date of publication of the final rule in the **Federal Register**], [**Federal Register** citation of the final rule]	This action approves the Maintenance Plan and the Supplemental Modeling Analyses for the Jefferson County area.

■ 3. In § 52.1343, add paragraph (c) to read as follows:

§ 52.1343 Control strategy: Sulfur dioxide.

* * * * *

(c) *Redesignation to attainment.* EPA has determined, as of [date of publication of the final rule in the **Federal Register**], that the Jefferson County 2010 SO_2 nonattainment area is redesignated to attainment of the 2010 SO_2 1-hour National Ambient Air Quality Standard (NAAQS) in accordance with the requirements of Clean Air Act (CAA) section 107(d)(3) and has approved its maintenance plan and supplemental modeling demonstration analyses as meeting the requirements of CAA section 175A.

PART 81—DESIGNATION OF AREAS FOR AIR QUALITY PLANNING PURPOSES

■ 4. The authority citation for part 81 continues to read as follows:

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

Subpart C—Section 107 Attainment Status Designations

■ 5. In § 81.326, revise the entry ''Jefferson County, MO'' in the table entitled ''Missouri—2010 Sulfur Dioxide NAAQS [Primary]'' to read as follows:

§ 81.326 Missouri.

* * * * *

MISSOURI—2010 SULFUR DIOXIDE NAAQS

[Primary]

Designated area [1]	Designation	
	Date [2]	Type
* * * *	* *	*
Jefferson County, MO	[Date 30 days after date of publication of the final rule in the **Federal Register**]	Attainment.
Jefferson County (part):		
That portion within Jefferson County described by connecting the following four sets of UTM coordinates moving in a clockwise manner:		
(Herculaneum USGS Quadrangle) 718360.283 4250477.056, 729301.869 4250718.415, 729704.134 4236840.30, 718762.547 4236558.715.		
(Festus USGS Quadrangle) 718762.547 4236558.715, 729704.134 4236840.30, 730066.171 4223042.637, 719124.585 4222680.6.		
(Selma USGS Quadrangle) 729704.134 4236840.30, 730428.209 4236840.3, 741047.984 4223283.996, 730066.171 4223042.637.		
(Valmeyer USGS Quadrangle) 729301.869 4250718.415, 731474.096 4250798.868, 730428.209 4236840.3, 729704.134 4236840.30.		
* * * *	* *	*

[1] Includes any Indian country in each county or area, unless otherwise specified. EPA is not determining the boundaries of any area of Indian country in this table, including any area of Indian country located in the larger designation area. The inclusion of any Indian country in the designation area is not a determination that the state has regulatory authority under the Clean Air Act for such Indian country.

[2] This date is April 9, 2018, unless otherwise noted.

* * * * *

[FR Doc. 2021–13693 Filed 6–28–21; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 81

[EPA–HQ–OAR–2014–0464; FRL–10024–28–OAR]

Error Correction of the Area Designations for the 2010 1-Hour Sulfur Dioxide (SO_2) Primary National Ambient Air Quality Standard (NAAQS) in Freestone and Anderson Counties, Rusk and Panola Counties, and Titus County in Texas

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule; withdrawal.

SUMMARY: The Environmental Protection Agency (EPA) is withdrawing its August 22, 2019, proposed rule, which proposed both to determine that the EPA made an error in the area designations for the 2010 Sulfur Dioxide (SO_2) Primary National Ambient Air Quality Standard (NAAQS) for portions of Freestone and Anderson Counties, Rusk and Panola Counties, and Titus County in Texas, and to correct the proposed error by modifying the designations of those areas to unclassifiable. The EPA is withdrawing the proposed rule because the EPA, informed in part by technical information received during the public comment period on the proposed rule that further supports the EPA's initial designations of these areas, no longer believes the bases identified in the proposed error correction support the proposed conclusion that an error correction is appropriate.

DATES: As of June 29, 2021, the proposed rule published at 84 FR 43757 on August 22, 2019, is withdrawn.

FOR FURTHER INFORMATION CONTACT: Corey Mocka, U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Air Quality Policy Division, 109 T.W. Alexander Drive, Mail Code C539–04, Research Triangle Park, NC 27711; phone number: (919) 541–5142; email address: *mocka.corey@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. Background

On December 13, 2016, the EPA designated portions of Freestone and Anderson Counties, Rusk and Panola Counties, and Titus County in Texas as nonattainment for the 2010 1-hour primary SO_2 NAAQS (81 FR 89870, codified at 40 CFR 81.344) (''Round 2 Supplement''). On February 13, 2017, Vistra Energy, which owns SO_2 emissions sources in each of the three areas, sent the EPA a petition for reconsideration, purportedly pursuant to Clean Air Act (CAA) section 307(d)(7)(B) and the Administrative Procedure Act 5 U.S.C. 553(e), and for administrative stay of the EPA's nonattainment designations for portions of Freestone and Anderson Counties (''Big Brown Steam Electric Station area''), Rusk and Panola Counties (''Martin Lake Electrical Station area''), and Titus County (''Monticello Steam Electric Station area''). On March 15, 2017, the Texas Commission on Environmental Quality (TCEQ) also submitted a request for an administrative stay of the Round 2 Supplement final designations for these areas in Texas.[1] On September 21, 2017, the EPA initially responded to Vistra Energy's February 2017 petition for reconsideration by indicating an intent to undertake an administrative action with notice and comment to revisit the nonattainment designations for the three areas, but explained that pending completion of such action, the nonattainment designations remained in effect.[2] [3]

The EPA published a proposed rule in the **Federal Register** on August 22, 2019, titled ''Error Correction of the Area Designations for the 2010 1-Hour Sulfur Dioxide (SO_2) Primary National Ambient Air Quality Standard (NAAQS) in Freestone and Anderson Counties, Rusk and Panola Counties, and Titus County in Texas'' (84 FR 43757) (''Proposed Error Correction''). Under the EPA's CAA authority at section 110(k)(6) to correct errors in acting on state implementation plans (SIPs) or in issuing designations, redesignations, classifications or reclassifications, the EPA proposed that in designating these areas as nonattainment under CAA sections 107(d)(1)(A)(i), (d)(1)(B)(ii), and (d)(2)(A), it erred in not giving greater weight to Texas's preference to characterize air quality through monitoring, and to steps undertaken by Texas to begin monitoring in these three areas, when considering all available information; in relying on available air quality analyses in making the initial designations that the EPA recognized included certain limitations; or a combination of these two issues. Therefore, to correct these proposed errors, the EPA also proposed that the previously designated nonattainment areas in Freestone and Anderson Counties, Rusk and Panola Counties, and Titus County in Texas each be revised to reflect an unclassifiable designation under CAA section 107(d)(1)(A)(iii). The EPA has not finalized the Proposed Error Correction and is not doing so in this action. Instead, the EPA is now withdrawing the Proposed Error Correction.[4]

II. Reasons for Withdrawing the Proposed Error Correction

A. Additional Air Quality Modeling

In the Proposed Error Correction, the EPA proposed that it erred in relying on available air quality modeling submitted by Sierra Club in making the initial nonattainment designations for these three areas. The EPA explained in the proposed action that the modeling submitted by Sierra Club (''December 2015'' and ''March 2016'' modeling), which purported to show nonattainment, was developed in accordance with the general recommendations on modeling provided by the EPA but stated that the modeling contained ''key limitations and uncertainties.'' We made this statement in the Proposed Error Correction despite also acknowledging that we had explained in the record for the Round 2 Supplement that individually these key limitations and uncertainties would not significantly change modeled results or, in many cases, could result in underestimation of SO_2 concentrations. In the Proposed Error Correction, the EPA also stated that given the possible collective significance of these issues and, in the case of the areas around the Martin Lake and Monticello facilities, given that the maximum modeled concentrations are within about 10 percent of the 2010 SO_2 NAAQS, we were less confident in our prior statements that potential adjustments to the Sierra Club modeling would not result in modeled values near

[1] Additionally, TCEQ submitted a petition for reconsideration on December 11, 2017, and on December 19, 2017, Vistra Energy provided additional information regarding facility retirements and the deployment of additional SO_2 monitors to support its February 2017 petition for reconsideration and administrative stay.

[2] *https://www.epa.gov/sites/production/files/2018-09/documents/3143_signed_response.pdf.*

[3] The EPA recently found that Texas has failed to submit State Implementation Plans to satisfy certain nonattainment planning requirements of the CAA for portions of Freestone and Anderson Counties, Rusk and Panola Counties, and Titus County. *See* 85 FR 48111.

[4] Additionally, as detailed in a separate document published elsewhere in this issue of the **Federal Register** that has been signed concurrently along with this withdrawal notice, the EPA is also now denying the administrative petitions from Vistra Energy and TCEQ. *See https://www.regulations.gov* under Docket ID No. EPA–HQ–OAR–2014–0464.

or below the NAAQS.[5] Additionally, the EPA stated in the Proposed Error Correction that while individually these deficiencies are not dispositive, collectively they are a sufficient basis for the EPA to propose that we erred in relying on the Sierra Club modeling in making the initial nonattainment designations for the three Texas areas.

The EPA received several comments on the Proposed Error Correction. Sierra Club submitted a comment on the Proposed Error Correction that included updated modeling (''September 2019 modeling''). Sierra Club's updated September 2019 modeling addressed all aspects of the March 2016 modeling that the EPA had identified in the Proposed Error Correction as a limitation or uncertainty. The September 2019 modeling purported to demonstrate that the Martin Lake Electrical Station area did not meet the 2010 SO_2 NAAQS at the time of designation in the Round 2 Supplement (*i.e.,* December 2016), and also currently does not meet the 2010 SO_2 NAAQS based on more recent data. Sierra Club did not submit updated modeling for the Big Brown and Monticello areas as part of its September 2019 comment submission, but rather asserted that the EPA's previously identified limitations (individually or collectively) have no material effect on the model results for those areas in the same way as they demonstrated with the Martin Lake area's modeling.

The EPA also notes, upon re-review of the Proposed Error Correction and Round 2 Supplement, that we did not acknowledge in the Proposed Error Correction that we actually considered the collective impact of all these same aspects of the modeling in the record for the Round 2 Supplement (to the extent those aspects remained in the March 2016 modeling relied on in the Round 2 Supplement).[6] In the Proposed Error Correction, we also did not explain any change in our thinking from our assessment of the collective impact in the Round 2 Supplement's record.

As explained further in the technical support document for this withdrawal, the EPA has assessed Sierra Club's September 2019 modeling submitted during the Proposed Error Correction public comment period.[7] This assessment supports the EPA's previous reliance on the March 2016 modeling as the basis for its final nonattainment designation for the Martin Lake area in the Round 2 Supplement. Based on consideration of that information submitted by commenters and on further consideration of the entirety of our record for the Round 2 Supplement, the EPA now has concerns with the accuracy of the Proposed Error Correction's characterization of the March 2016 modeling and no longer believes that this proposed basis supports the proposed conclusion that an error correction is appropriate or that reliance on such information for the nonattainment designation was in error. The refined modeling submitted on the Proposed Error Correction demonstrates that the EPA's Round 2 Supplement assessment of the impact of further refining the March 2016 modeling was reasonable and correct, that such refinement would not alter the conclusion that the Martin Lake area was not attaining the NAAQS at the time of the Round 2 Supplement. Overall, the EPA's assessment of the information and of our record for the Round 2 Supplement for all three areas is that refinement of the aspects of the modeling the EPA identified in the Proposed Error Correction would not alter the EPA's nonattainment designations for any of the three nonattainment area designations in the Round 2 Supplement, and that the submitted information further confirms our Round 2 Supplement analysis of then-available data.

B. Comments on Texas's Monitoring Preference

In the Proposed Error Correction, the EPA also proposed that when we considered all available information at the time of designation, we erred in failing to give ''greater'' weight to the State of Texas' preference to use ambient air monitors to characterize SO_2 air quality in their state for purposes of the designation. We proposed this despite also acknowledging in the proposal that because these areas (around certain SO_2 emissions sources) were subject to the Round 2 deadline of July 2, 2016, these areas were required to be designated at that time based on the EPA's assessment of available information even though the State of Texas stated a preference to later characterize the areas based on future monitoring data and its intention to install monitors for these areas.

In addition to the modeling submitted during the public comment period for the Proposed Error Correction, the Sierra Club also commented that the EPA was required to designate the three areas in Texas by the court-ordered deadline based on the information available at that time (*i.e.,* Sierra Club's December 2015 and March 2016 modeling). Because monitoring information was not available in 2016 for the Martin Lake, Big Brown, or Monticello areas, the Sierra Club stated that monitoring data consequently could not inform the EPA's designations decisions. The Environmental Protection Network (EPN) submitted a similar comment claiming that the EPA did not have the discretion to delay designations for these three areas in Texas under the applicable court-ordered deadline and that the EPA was required to designate the areas based on the best available data at the time of the designations. Additionally, EPN asserted that Texas's preference for future air quality monitoring did not undermine the available modeling data demonstrating that the areas were violating the 2010 SO_2 NAAQS.

In light of the comments submitted on the Proposed Error Correction, and the absence of a clearly identified error in the Round 2 Supplement, the EPA no longer believes that this proposed basis supports the proposed conclusion that an error correction is appropriate and no longer believes that we failed to give the appropriate weight to the State's preference for future monitoring information when we considered all available information at the time of the Round 2 Supplement. For the reasons discussed below, the EPA has concerns with the prior proposed assertion that the EPA was in error for not giving greater weight to the state's preference for *future* monitoring information in the absence of any available monitoring data at that time, let alone over reliance on *then-available* air quality modeling to assess SO_2 air quality. Given that the Proposed Error Correction's basis was predicated on the EPA relying on or weighing more heavily a preference for information that was not available at the time the EPA was required to finalize the Round 2 Supplement, the EPA no longer believes such a basis provides substantial support for the argument that the Round 2 Supplement should be revised.

CAA section 107(d) specifies that the EPA make designations based on the air quality at the time of final designations (*i.e.,* determining at the time of signature whether the area meets the NAAQS) and consider all available information on air quality at that time. In other words, the

[5] As explained in the EPA's final designations Technical Support Document (TSD), the modeled 99th percentile daily maximum 1-hour SO_2 concentrations for the Martin Lake and Monticello facilities are 14 percent and 8 percent above the 2010 SO_2 NAAQS, respectively.

[6] *See* pages 27–29, 48–50, and 75–77 of the EPA's final designations TSD, available in the public docket and at *https://www.epa.gov/sites/production/files/2016-11/documents/texas_4_deferred_luminant_tsd_final_docket.pdf.*

[7] *See https://www.regulations.gov* under Docket ID No. EPA–HQ–OAR–2014–0464.

EPA does not interpret the statute as allowing the EPA to consider future air quality in the initial designations process, and the D.C. Circuit has upheld this interpretation as reasonable.[8] The record for the Round 2 Supplement explains, and the EPA maintains, that both air quality modeling and ambient monitoring are appropriate tools for characterizing ambient air quality for purposes of informing decisions to implement the SO_2 NAAQS, including designation determinations.[9] The EPA's reliance on modeling to assess SO_2 air quality, even in the face of conflicting monitoring, where appropriate, has been judicially affirmed. *See, e.g., Montana Sulphur & Chemical Company* v. *EPA,* 666 F.3d 1174, 1185 (9th Cir. 2012).

In the Round 2 Supplement for these three areas, the EPA considered Texas's recommendations but appropriately modified the recommendations, per CAA section 107(d)(1)(B)(2), because they were not supported by currently available information. Specifically, the EPA's assessment of Sierra Club's modeling was that currently available information showed violations of the 2010 SO_2 NAAQS. At the time of the EPA's final nonattainment designations for portions of Freestone and Anderson Counties, Rusk and Panola Counties, and Titus County, although Texas preferred that the EPA designate the areas based on proposed future monitoring data rather than on existing submitted modeling, there were no representative monitoring data [10] or other reliable modeling demonstrations available to refute Sierra Club's information demonstrating violations of the 2010 SO_2 NAAQS, as explained in the EPA's final designations TSD.[11] The absence of available monitoring data at that time did not relieve the EPA of its obligation to issue designations for these areas by the court-ordered deadline. Furthermore, at the time of the final designations, the Agency did not have the discretion to await the results of 3 years of ambient air monitoring data (*i.e.,* 2018–2020) from Texas's proposed (but not yet established) monitoring sites before taking final action due to the court's order to designate certain areas in Texas. There was, however, as explained previously and in the EPA's final designations TSD, valid modeling submitted by the Sierra Club based on the then-most recent actual emissions demonstrating that the areas were violating the 2010 SO_2 NAAQS. As explained earlier, the EPA no longer believes there were errors in our Round 2 Supplement's analysis that Sierra Club submitted valid, representative modeling (based on the then-most recent actual SO_2 emissions) that demonstrated that the areas were violating the 2010 SO_2 NAAQS, or that further refining the modeling would result in modeled values near or below the standard. Therefore, even though the EPA considered Texas's preference for monitoring, given that the statute requires that the EPA consider available information, Texas's preference for reliance on monitoring information when there were no such monitoring data available at the time of the EPA's final designations in December 2016 did not and could not rebut Sierra Club's modeling showing violations of the 2010 SO_2 NAAQS.[12]

III. Purpose of This Action

In the 2019 Proposed Error Correction, the EPA proposed that our relying on the Sierra Club modeling *along with* our not giving greater weight to Texas' preference for monitoring, represented an insufficient basis for the EPA's initial nonattainment designations. For the reasons discussed previously, the EPA no longer believes it has a basis under these reasons individually or collectively to propose to or conclude that we made errors in our nonattainment designations of these areas, and, therefore, no longer believes that we have a basis to conclude that the EPA could not determine, based on available information at the time of issuing the designation, whether the three Texas areas that are the subject of this proposed action were meeting or not meeting the 2010 SO_2 NAAQS (*i.e.,* the conclusion necessary to correct the designations to unclassifiable). Therefore, the EPA is withdrawing the Proposed Error Correction.

IV. Statutory and Executive Order Reviews

This withdrawal of a proposed rule does not establish new regulatory requirements. Hence, the requirements of other regulatory statutes and Executive Orders that generally apply to rulemakings (*e.g.,* the Regulatory Flexibility Act) do not apply to this action.

List of Subjects in 40 CFR Part 81

Environmental protection, Air pollution control, Sulfur dioxide.

Michael S. Regan,

Administrator.

[FR Doc. 2021–13696 Filed 6–28–21; 8:45 am]

BILLING CODE 6560–50–P

[8] *See Miss. Comm'n on Envtl. Quality* v. *EPA,* 790 F.3d 138, 156 (D.C. Cir. 2015); *Catawba County* v. *EPA,* 571 F.3d 20, 43–44 (D.C. Cir. 2009). The 2015 decision upheld the EPA's designations issued just days before new certified air quality data became available showing more areas violating the 2008 ozone NAAQS than the EPA designated as nonattainment. *See also State of Texas* v. *EPA,* 983 F.3d 826, 837–838 (5th Cir. 2020) (holding that the EPA's nonattainment designation, which modified the state's recommendation, was not arbitrary and capricious because the county was not compliant with the ozone NAAQS when the EPA promulgated its designation and the CAA uses concrete terms such that a county either does or does not meet the NAAQS).

[9] Round 2 Supplement Reponses to Comments, Page 13. Available in the public docket and at *https://www.epa.gov/sites/production/files/2016-11/documents/rtc_so2_comments_received_document_4_tx_sources_final_0.pdf.*

[10] As explained in the EPA's intended and final designations TSDs and the responses to comments document that accompanied the Round 2 Supplement, at the time of the EPA's final designations on December 13, 2016, there were no SO_2 monitors sited in the areas of maximum concentration to properly characterize the air quality around the Martin Lake, Big Brown, or Monticello areas, nor were there SO_2 monitors in the same counties as the facilities.

[11] The EPA received a comment from the Utility Air Regulatory Group on the Round 2 Supplement suggesting that the EPA wait for the future completion of three years of monitoring before designating certain Round 2 areas. In the Round 2 Supplement Responses to Comments (page 14), the EPA responded that the Agency does not have the discretion to await the results of future monitoring because of the court order to designate certain areas by the July 2, 2016, deadline.

[12] *See State of Texas* v. *EPA,* 983 F.3d 826, 836–838 (5th Cir. 2020).

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 1036 and 1037

[EPA–HQ–OAR–2019–0307; FRL–10018–51–OAR]

Improvements for Heavy-Duty Engine and Vehicle Test Procedures

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of proposed rulemaking.

SUMMARY: This notice of proposed rulemaking includes corrections, clarifications, additional flexibilities, and adjustment factors to improve the Greenhouse gas Emissions Model (GEM) compliance tool for heavy-duty vehicles while more closely matching the outputs produced by the original GEM version 3.0 that was used to establish the CO_2 standards for Model Years 2021 and later in the 2016 Heavy-duty Phase 2 final rule. This document supplements the proposed rule published on May 12, 2020, which included a larger set of proposed revisions to modify and improve GEM. Most of the proposed revisions from that notice of proposed rulemaking are addressed in a final rulemaking published elsewhere in the Final Rules section of this issue of the **Federal Register**. Given the nature of this proposal, there will be neither

significant environmental impacts nor significant economic impacts for any sector.

DATES:

Comments: Comments must be received on or before August 30, 2021.

Public Hearing: If anyone contacts us requesting a public hearing on or before July 6, 2021, we will hold an online hearing at 10 a.m. Eastern Standard Time on July 14, 2021.

ADDRESSES:

Comments: Submit your comments, identified by Docket ID No. EPA–HQ–OAR–2019–0307, at *http://www.regulations.gov.* For detailed instructions on sending comments and additional information on the rulemaking process, see the ''Public Participation'' section of this document.

Docket: EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2019–0307. Publicly available docket materials are available either electronically at *http://www.regulations.gov* or in hard copy at Air and Radiation Docket and Information Center, EPA Docket Center, EPA/DC, EPA WJC West Building, 1301 Constitution Ave. NW, Room 3334, Washington, DC. Out of an abundance of caution for members of the public and our staff, the EPA Docket Center and Reading Room was closed to public visitors on March 31, 2020, to reduce the risk of transmitting COVID–19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. We encourage the public to submit comments via *https://www.regulations.gov* or email, as there is a temporary suspension of mail delivery to EPA, and no hand deliveries are currently accepted. For further information on EPA Docket Center services and the current status, please visit us online at *https://www.epa.gov/dockets.*

Public Hearing: Individuals are invited to notify EPA of interest in a public hearing; see **FOR FURTHER INFORMATION CONTACT**.

Public Participation: Comments: All submissions received must include the Docket ID No. EPA–HQ–OAR–2019–0307 for this rulemaking. Follow the online instructions for submitting comments. Once submitted, comments received may be posted without change to *https://www.regulations.gov/,* including any personal information provided, and cannot be edited or removed from *Regulations.gov*. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (*i.e.,* on the web, cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit *http://www2.epa.gov/dockets/commenting-epa-dockets.*

Out of an abundance of caution for members of the public and our staff, the EPA Docket Center and Reading Room was closed to public visitors on March 31, 2020, to reduce the risk of transmitting COVID–19. Our Docket Center staff will continue to provide remote customer service via email, phone, and webform. We encourage the public to submit comments via *https://www.regulations.gov* or email, as there is a temporary suspension of mail delivery to EPA, and no hand deliveries are currently accepted. For further information on EPA Docket Center services and the current status, please visit us online at *https://www.epa.gov/.*

EPA continues to carefully and continuously monitor information from the Centers for Disease Control and Prevention, local area health departments, and our Federal partners so we can respond rapidly as conditions change regarding COVID–19.

Docket: All documents in the docket are listed on the *www.regulations.gov* website. Although listed in the index, some information is not publicly available, *e.g.,* CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form through the EPA Docket Center at the location listed in the **ADDRESSES** section of this document.

Public Hearing: If we hold a public hearing, we will announce detailed information about the hearing on our website *https://www.epa.gov/regulations-emissions-vehicles-and-engines/supplemental-rule-improvements-heavy-duty-engine-and.* Send requests for a hearing and questions about the status of a hearing to the contact identified in **FOR FURTHER INFORMATION CONTACT**.

FOR FURTHER INFORMATION CONTACT: Amy Kopin, Office of Transportation and Air Quality, Assessment and Standards Division, Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor, MI 48105; telephone number: (734) 214–4173; email address: *kopin.amy@epa.gov.*

SUPPLEMENTARY INFORMATION:

Table of Contents

I. General Information
II. Greenhouse Gas Emissions Model (GEM) Background
III. Proposed Updates to GEM
IV. Statutory Authority and Executive Order Reviews

I. General Information

Does this action apply to me?

This action relates to companies that manufacture or sell new heavy-duty engines and vehicles as defined under EPA's CAA regulations.[1] Regulated categories and entities include the following:

NAICS codes [A]	NAICS titles	Examples of potentially regulated entities
333618, 336111, 336112, 336120, 336211, 336999.	Other Engine Equipment Manufacturing, Automobile Manufacturing, Light Truck and Utility Vehicle Manufacturing, Heavy Duty Truck Manufacturing, Motor Vehicle Body Manufacturing, All Other Transportation Equipment Manufacturing.	Motor vehicle manufacturers and engine manufacturers.

[A] North American Industry Classification System (NAICS).

[1] ''Heavy-duty engine'' and ''heavy-duty vehicle'' are defined in 40 CFR 1037.801.

This list is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

What action is the Agency taking?

This action proposes to amend the regulations that implement our air pollutant emission standards for heavy-duty engines and vehicles. The proposed amendments in this notice of proposed rulemaking include corrections, clarifications, additional flexibilities, and adjustment factors to the Greenhouse gas Emissions Model (GEM) compliance tool for heavy-duty vehicles. These amendments would modify the existing test procedure for heavy-duty highway engines and vehicles and apply to the measurement of CO_2 emissions. EPA published a proposed rule on May 12, 2020 (85 FR 28153) (''Technical Amendments proposed rule''). EPA is issuing a final rulemaking (''Technical Amendments final rule'') relating to most revisions proposed in the Technical Amendments proposed rule, published in the Final Rules section of this issue of the **Federal Register**, titled ''Improvements for Heavy-Duty Engine and Vehicle Test Procedures, and other technical amendments,'' docket number EPA–HQ–OAR–2019–0307; FRL–10018–52–OAR.

This action supplements the Technical Amendments proposed rule for only certain specific aspects of revising GEM by proposing several amendments to the model, after consideration of comments solicited and received on the Technical Amendments proposed rule, including a proposed revision to address concerns raised regarding potential stringency impacts that may result from changes to GEM.

What are the incremental costs and benefits of this action?

This action is limited in scope and does not have significant economic or environmental impacts. EPA has therefore not estimated the potential costs or benefits of this notice of proposed rulemaking.

II. Greenhouse Gas Emissions Model (GEM) Background

GEM is a computer application that estimates the greenhouse gas (GHG) emissions and fuel efficiency performance of specific aspects of heavy-duty vehicles. GEM uses several vehicle-specific inputs, such as engine fuel maps, aerodynamic drag coefficients, and vehicle weight ratings, to simulate vehicle and engine operation and model the amount of CO_2 emitted over multiple duty cycles for tractors and vocational vehicles. The resulting CO_2 values over these cycles are weighted by GEM to provide a composite GEM score. GEM version 3.0 was used to set standards in the Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles-Phase 2 (''Phase 2'') rulemaking (81 FR 73478). For purposes of determining compliance, composite GEM scores are compared to the applicable Phase 2 vehicle standard.

In the Technical Amendments proposed rule, we proposed several amendments to GEM 3.0, including corrections, clarifications, and additional flexibilities in a revised version of the model, GEM 3.5 (85 FR 28145). EPA also requested comment on whether any differences in GEM output values resulting from changes to the model would impact the effective stringency of the program and, if so, whether EPA should revise the GEM model itself or address such impacts via regulations (see 85 FR 28145).

Comments received in response to the NRPM supported most of the proposed updates to GEM and requested additional revisions to further improve the model.[2] The California Air Resources Board (CARB) provided comment on this topic, stating the importance of GEM results being consistent with the current program standards to avoid affecting program stringency. CARB recommended that EPA revise GEM in order to ensure stringency is maintained.[3]

After considering the comments received, EPA applied further potential changes to GEM 3.5 and released a new development version of GEM, GEM 3.7, to the public for download and review by stakeholders to evaluate and assess the performance of this revised model. GEM 3.7 incorporated some corrections and improvements relative to the proposed version GEM 3.5, as noted in the corresponding memorandum in the rulemaking docket.[4]

While evaluating GEM 3.7, we found differences in the output values for some tractor and vocational vehicles compared to the output values from GEM 3.0 used to set the Phase 2 CO_2 standards. To understand the differences between GEM 3.0 and GEM 3.7, we recreated the process used in 2016 to determine the numerical level of the Phase 2 standards. Without an adjustment to the resulting GEM output value, these differences in GEM output values when compared to the Phase 2 final rule could be considered an effective change in stringency. In light of GEM 3.7 output differences and considering CARB's comment, we identified adjustment factors in that same docketed memo that could be applied to the unrounded GEM 3.7 output to better ensure effective stringency of the standards is maintained.[5]

The Truck and Engine Manufacturers Association (EMA) requested additional time for its members to review the potential updates to the model in GEM 3.7 and evaluate the impact of the adjustment factors made available.[6]

As described in the Technical Amendments final rule, EPA released a revised version of GEM (*i.e.,* GEM 3.5.1) that corrected three errors in GEM 3.5 and finalized provisions to specify GEM 3.5.1 without adjustment factors as the compliance tool for meeting Phase 2 standards.[7] GEM 3.5.1 includes the following updates to GEM 3.5:

- Corrected duty cycle weighting factors for vocational vehicles in the Heavy Heavy-Duty Multipurpose subcategory.
- Corrected an idle map error when the cycle average engine fuel mapping procedure is used for all three drive cycles.
- Corrected a functional error that unnecessarily required manufacturers to include transmission power loss data when using the option to enter a unique (instead of default) k-factor for the torque converter.

[2] See ''Improvements for Heavy-Duty Engine and Vehicle Test Procedures, and other Technical Amendments Response to Comments'', Publication Number: EPA–420–R–20–026, December 2020. Chapter 2 of the Response to Comments provides additional details on the amendments, clarifications requested by commenters, and our responses to most of the comments to the NPRM.

[3] California Air Resources Board, Docket number EPA–HQ–OAR–2019–0207–0030.

[4] Nelson, Brian. Memorandum to Docket EPA–HQ–OAR–2019–0307. ''Development version of GEM and adjustment factors''. October 23, 2020. Docket number EPA–HQ–OAR–2019–0307–0083. Also available online: *https://www3.epa.gov/otaq/gem-p2v3.7-release-memo-2020-10-23.pdf.*

[5] *Id.*

[6] Charmley, Bill. Memorandum to Docket EPA–HQ–OAR–2019–0307. ''EPA discussions with the Truck and Engine Manufacturers Association, and with the California Air Resources Board, regarding Highway Heavy-Duty Technical Amendments.'' December 14, 2020. Docket Number EPA–HQ–OAR–2019–0307–0092.

[7] See the notice of final rulemaking for ''Improvements for Heavy-Duty Engine and Vehicle Test Procedures, and other Technical Amendments'' published in the Final Rule's section of today's **Federal Register**, titled ''Improvements for Heavy-Duty Engine and Vehicle Test Procedures,'' docket number EPA–HQ–OAR–2019–0307; FRL–10018–52–OAR.

III. Proposed Updates to GEM

In this notice of proposed rulemaking, as detailed further in this section, we are proposing to revise GEM and to revise GEM's test procedures to include adjustment factors after consideration of comments solicited and received on the Technical Amendments proposed rule. We request comment only on these specific revisions and are not proposing changes to or seeking comment on any other amendments included in the Technical Amendments proposed or final rule.

We are releasing GEM version 3.8 for notice and comment.[8] The proposed GEM 3.8 allows additional compliance flexibilities and improves the vehicle simulation by incorporating the following improvements relative to GEM 3.5.1:

- Changed limits on engine input to allow small negative torque inputs.
- Corrected how GEM adjusts the idle fueling of the transient cycle by using the same idle duration time both for subtracting the idle fuel rate from the transient cycle average engine fuel map and for adding back in the simulated idle fuel rate.
- Added an option for vocational vehicles to input a value for neutral coasting in GEM and amend the related test procedure in 40 CFR 1037.520(j)(1).
- Corrected manual and automated manual transmissions to perform clutched upshifts for Heavy HDV.

We request comment on the revisions listed above.

As noted in a memorandum to the docket, the resulting standards generated using GEM 3.8 in place of GEM 3.0 were, on average, 0.58 percent lower for tractors and 0.20 percent higher for vocational vehicles, with the greatest difference (an increase of 1.3 percent) occuring in a few of the custom chassis standards.[9] To ensure that these changes to GEM do not change the effective stringency of the Phase 2 CO_2 standards, we propose a revision to the test procedures in 40 CFR 1037.520(o) to include a table of adjustment factors to be applied to the unrounded GEM 3.8 output to correct the differences. We request comment on this proposed revision to 40 CFR 1037.520(o). EPA also requests comment on whether EPA should incorporate the adjustment factors directly into the GEM model, if EPA is able to develop a version of the GEM model which properly incorporates the adjustment factors.

We are proposing to incorporate by reference into the regulations the revised version, GEM 3.8, for manufacturers to demonstrate compliance with the Phase 2 standards, including obtaining a certificate of conformity and submitting end-of-year reports. For MY 2021, we are proposing to allow use of GEM 3.5.1 under § 1037.150(bb) as an interim provision, but to limit this optional use of GEM 3.5.1 for demonstrating compliance with the Phase 2 standards, including obtaining a certificate of conformity and submitting end-of-year reports, to MY 2021 vehicles only. A manufacturer who opts to use GEM 3.5.1 for MY 2021 is required to apply GEM 3.5.1 across its entire MY 2021 U.S.-directed production volume. We also propose to allow MY 2021 data based on the use of GEM 3.5.1 to be used for carryover requests for certificates of conformity for MY 2022 and future years for qualifying vehicles under § 1037.235(d); however, manufacturers would still need to use GEM 3.8 for end-of-year reporting for MY 2022 and later. Under this proposal, GEM 3.8 would need to be used for all other certificates of conformity for MY 2022 and later. Due to the model improvements and flexibilities available in GEM 3.8 relative to GEM 3.5.1, we request comment on the appropriateness of requiring that GEM 3.8 be used for MY 2021 end-of-year reports even if MY 2021 certificates of conformity were obtained using GEM 3.5.1. Finally, we are proposing that if an engine fuel map was run on an engine using a cycle generated from GEM 3.5.1 for MY 2021 and the manufacturer of that engine applies for carryover certification for MY 2022 or later, the manufacturer would not need to rerun the engine fuel map. We request comment on these requirements, allowable uses, and limitations proposed for each of these revised GEM model versions, including the use of GEM 3.5.1 for MY 2021 and carryover applications.

IV. Statutory Authority and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *http://www2.epa.gov/laws-regulations/laws-and-executive-orders.*

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

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review.

B. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. This action is designed to reduce testing burdens, increase compliance flexibility, and make various corrections and adjustments to compliance provisions; as a result, we anticipate no costs associated with this rule. We have therefore concluded that this action will have no net regulatory burden for directly regulated small entities.

C. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This action imposes no enforceable duty on any state, local or tribal governments. Requirements for the private sector do not exceed $100 million in any one year.

D. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

E. Executive Order 13175: Consultation and Coordination With Indian Tribal Governments

This action does not have tribal implications as specified in Executive Order 13175. This rule will be implemented at the Federal level and affects engine and vehicle manufacturers. Thus, Executive Order 13175 does not apply to this action.

F. Executive Order 13045: Protection of Children From Environmental Health Risks and Safety Risks

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental

[8] Greenhouse gas Emissions Model (GEM) Phase 2, Version 3.8, December 2020. A working version of this software is also available for download at *https://www.epa.gov/regulations-emissions-vehicles-and-engines/greenhouse-gas-emissions-model-gem-medium-and-heavy-duty.*

[9] Sanchez, James, Memorandum to Docket EPA–HQ–OAR–2019–0307. Process of Using GEM to Set Vehicle Standards. December 4, 2020.

health or safety risks addressed by this action present a disproportionate risk to children. There are no environmental health or safety risks created by this action that could present a disproportionate risk to children.

G. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

H. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Public Law 104–113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.,* materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs agencies to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. This action involves technical standards.

Except for the reference discussed below, the standards included in the regulatory text as incorporated by reference in 40 CFR part 1037 were all previously approved for IBR and no change is proposed in this action.

In accordance with the requirements of 1 CFR 51.5, we are proposing to incorporate by reference a new version of the Greenhouse gas Emissions Model (GEM), which we use for certifying heavy-duty highway vehicles to the greenhouse gas emission standards in 40 CFR part 1037. The model calculates emission rates for heavy-duty highway vehicles based on input values defined by the manufacturer. The model is available as noted in the amended regulations at 40 CFR 1037.810.

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

The EPA believes this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). Due to the small environmental impact, this regulatory action will not have a disproportionate adverse effect on minority populations, low-income populations, or indigenous peoples.

List of Subjects

40 CFR Part 1036

Administrative practice and procedure, Air pollution control, Confidential business information, Environmental protection, Greenhouse gases, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements, Warranties.

40 CFR Part 1037

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

Jane Nishida,

Acting Administrator.

For the reasons set out in the preamble, we propose to amend title 40, chapter I of the Code of Federal Regulations as set forth below.

PART 1036—CONTROL OF EMISSIONS FROM NEW AND IN-USE HEAVY-DUTY HIGHWAY ENGINES

■ 1. The authority citation for part 1036 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

■ 2. Amend § 1036.150 by adding paragraph (r) to read as follows:

§ 1036.150 Interim provisions.

* * * * *

(r) *Carryover fuel maps.* You may use fuel maps from model year 2021 engines for certifying model year 2022 and later vehicles using carryover provisions in § 1036.235(d), even if the specified version of the GEM simulation tool to generate duty cycles for fuel mapping changes for those later model years.

PART 1037—CONTROL OF EMISSIONS FROM NEW HEAVY-DUTY MOTOR VEHICLES

■ 3. The authority citation for part 1037 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

■ 4. Amend § 1037.150 by adding paragraph (bb) to read as follows:

§ 1037.150 Interim provisions.

* * * * *

(bb) *Transition to updated GEM.* Vehicle manufacturers may demonstrate compliance with Phase 2 GHG standards in model year 2021 vehicles using GEM Phase 2, Version 3.5.1 (incorporated by reference in § 1037.810). Each vehicle manufacturer must use a single version of GEM for all its model year 2021 families. Vehicle manufacturers may use GEM Phase 2, Version 3.5.1 for later model years only to certify vehicle families from model year 2021 that qualify for using carryover provisions in § 1037.235(d).

■ 5. Amend § 1037.520 by revising the introductory text and paragraph (j)(1) and adding paragraph (o) to read as follows:

§ 1037.520 Modeling CO_2 emissions to show compliance for vocational vehicles and tractors.

This section describes how to use the Greenhouse gas Emissions Model (GEM) (incorporated by reference in § 1037.810) to show compliance with the CO_2 standards of §§ 1037.105 and 1037.106 for vocational vehicles and tractors. Use GEM version 2.0.1 to demonstrate compliance with Phase 1 standards; use GEM Phase 2, Version 3.8 to demonstrate compliance with Phase 2 standards. Use good engineering judgment when demonstrating compliance using GEM. See § 1037.515 for calculation procedures for demonstrating compliance with trailer standards.

* * * * *

(j) * * *

(1) *Intelligent controls.* Enter 2 for tractors with predictive cruise control. This includes any cruise control system that incorporates satellite-based global-positioning data for controlling operator demand. For tractors without predictive cruise control and for all vocational vehicles, enter 1.5 if they have neutral coasting, unless good engineering judgment indicates that a lower percentage should apply.

* * * * *

(o) *Adjusting results for updated GEM.* Adjust composite results from GEM Phase 2, Version 3.8 using the following equation to account for modeling changes relative to GEM Phase 2, Version 3.0:

$$e_{\mathrm{CO2}_{\mathrm{Adjusted}}} = \frac{e_{\mathrm{CO2}}}{1 + AF}$$

Eq. 1037.520-1

Where:

e_{CO2} = FEL CO_2 Emissions from GEM.

AF = the adjustment factor from the following table:

TABLE 10 OF § 1037.520—ADJUSTMENT FACTORS FOR COMPOSITE RESULTS FROM GEM PHASE 2, VERSION 3.8

Regulatory subcategory	Adjustment factor		
	MY 2022–2023	MY 2024–2026	MY 2027-and-later
Class 7 Day Cab Low Roof	−0.0104	−0.0090	−0.0094
Class 7 Day Cab Mid Roof	−0.0106	−0.0084	−0.0097
Class 7 Day Cab High Roof	−0.0088	−0.0084	−0.0090
Class 8 Day Cab Low Roof	−0.0062	−0.0079	−0.0068
Class 8 Sleeper Cab Low Roof	−0.0014	−0.0015	−0.0016
Class 8 Day Cab Mid Roof	−0.0059	−0.0062	−0.0064
Class 8 Sleeper Cab Mid Roof	−0.0013	0.0000	0.0000
Class 8 Day Cab High Roof	−0.0058	−0.0062	−0.0066
Class 8 Sleeper Cab High Roof	−0.0013	−0.0014	−0.0016
Class 8 Heavy Haul	−0.0076	−0.0080	−0.0062
Multi-Purpose Light HDV Compression-ignition	0.0000	−0.0029	0.0000
Regional Light HDV Compression-ignition	0.0000	0.0000	0.0000
Urban Light HDV Compression-ignition	0.0000	0.0000	0.0000
Multi-Purpose Medium HDV Compression-ignition	−0.0038	0.0000	0.0000
Regional Medium HDV Compression-ignition	0.0000	0.0000	0.0000
Urban Medium HDV Compression-ignition	−0.0034	−0.0037	0.0000
Multi-Purpose Heavy HDV Compression-ignition	0.0038	0.0041	0.0043
Regional Heavy HDV Compression-ignition	0.0000	0.0000	0.0000
Urban Heavy HDV Compression-ignition	0.0065	0.0071	0.0037
Multi-Purpose Light HDV Spark-ignition	0.0000	0.0000	−0.0027
Regional Light HDV Spark-ignition	0.0000	0.0000	0.0000
Urban Light HDV Spark-ignition	0.0000	0.0000	0.0000
Multi-Purpose Medium HDV Spark-ignition	0.0000	0.0000	0.0000
Regional Medium HDV Spark-ignition	0.0000	0.0000	0.0040
Urban Medium HDV Spark-ignition	0.0030	0.0032	0.0034
School bus	−0.0034	−0.0034	0.0000
Motor home	0.0000	0.0000	0.0000
Coach bus	0.0000	0.0000	0.0049
Other bus	0.0067	0.0067	0.0000
Refuse hauler	0.0096	0.0096	0.0034
Concrete mixer	0.0125	0.0125	0.0127
Mixed-use vehicle	0.0125	0.0125	0.0127
Emergency vehicle	0.0123	0.0123	0.0125

■ 6. Amend § 1037.810 by revising paragraph (c) to read as follows:

§ 1037.810 Incorporation by reference.

* * * * *

(c) U.S. EPA, Office of Air and Radiation, 2565 Plymouth Road, Ann Arbor, MI 48105, *www.epa.gov*.

(1)(i) Greenhouse gas Emissions Model (GEM), Version 2.0.1, September 2012 (''GEM version 2.0.1''), IBR approved for § 1037.520.

(ii) Greenhouse gas Emissions Model (GEM) Phase 2, Version 3.5.1, November 2020 (''GEM Phase 2, Version 3.5.1''); IBR approved for § 1037.150(bb).

(iii) Greenhouse gas Emissions Model (GEM) Phase 2, Version 3.8, November 2020 (''GEM Phase 2, Version 3.8''); IBR approved for § 1037.520.

(iv) GEM's MATLAB/Simulink Hardware-in-Loop model, Version 3.8, December 2020 (''GEM HIL model''); IBR approved for § 1037.550(a).

(2) The computer code for these models is available as noted in paragraph (a) of this section. A working version of the software is also available for download at *https://www.epa.gov/regulations-emissions-vehicles-and-engines/greenhouse-gas-emissions-model-gem-medium-and-heavy-duty*.

* * * * *

[FR Doc. 2021–05305 Filed 6–28–21; 8:45 am]

BILLING CODE 6560–50–P

Notices

Federal Register
Vol. 86, No. 122
Tuesday, June 29, 2021

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

DEPARTMENT OF AGRICULTURE

Farm Service Agency

[Docket ID: FSA–2021–0009]

Information Collection Request; Direct Loan Servicing—Special

AGENCY: Farm Service Agency, USDA.

ACTION: Notice; request for comments.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, the Farm Service Agency (FSA) is requesting comments from all interested individuals and organizations on an extension of a currently approved information collection that supports Direct Loan Servicing—Special. The information is used in eligibility and feasibility determinations on borrower requests for disaster set-aside, primary loan servicing, buyout at market value, and homestead protection, as well as liquidation of security.

DATES: We will consider comments that we receive August 30, 2021.

ADDRESSES: We invite you to submit comments on this notice. You may submit comments by any of the following methods:

- *Federal eRulemaking Portal:* Go to: *www.regulations.gov* and search for Docket ID FSA–2021–0009. Follow the online instructions for submitting comments.
- *Mail, Hand-Delivery, or Courier:* Carolyn Estrada, Senior Loan Officer, USDA/FSA 3140 S State Route 100, Tiffin, Ohio, 44883.

You may also send comments to the Desk Officer for Agriculture, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503. Copies of the information collection may be requested by contacting Tyneca Jefferies at USDA/FSA/FLP, STOP 0523, 1400 Independence Avenue SW, Washington, DC 20250–0503.

FOR FURTHER INFORMATION CONTACT: For specific questions related to collection activities, contact Carolyn Estrada at (419) 447–7017—an extension number 2903; or, by email at: *carolyn.estrada@usda.gov*. Persons with disabilities who require alternative means for communication should contact the USDA Target Center at (202) 720–2600 or (844) 433–2774 (toll-free nationwide).

SUPPLEMENTARY INFORMATION:

Title: Farm Loan Programs; Direct Loan Servicing—Special.

OMB Control Number: 0560–0233.

OMB Expiration Date: 09/31/2021.

Type of Request: Extension with revision.

Abstract: FSA's Farm Loan Programs provide loans to family farmers to purchase real estate and equipment and finance agricultural production. 7 CFR 766, Direct Loan Servicing—Special, provides the requirements for servicing financially distressed and delinquent direct loan borrowers. FSA's loan servicing options include disaster set-aside, primary loan servicing (including reamortization, rescheduling, deferral, write down and conservation contracts), buyout at market value, and homestead protection. FSA also services borrowers who file bankruptcy or liquidate security when available servicing options are not sufficient to produce a feasible plan. The information collections contained in the regulation are necessary to evaluate a borrower's request for consideration of the special servicing actions.

The annual burden hours and the numbers of respondents and responses increased because the loan servicing activities increased slightly to reflect the current numbers since the last OMB approval.

For the following estimated total annual burden on respondents, the formula used to calculate the total burden hour is the estimated average time per response multiplied by the estimated total annual responses.

Estimate of Respondent Burden: Public reporting burden for this information collection is estimated to average 0.38 hours per response to include the time for reviewing instructions, searching information, gathering and maintaining information the data and completing and reviewing the collection of information.

Respondents: Individuals or households, businesses or other for profit farms.

Estimated Annual Number of Respondents: 17,174.

Estimated Number of Reponses per Respondent: 1.89.

Estimated Total Annual Responses: 32,496.

Estimated Average Time per Response: 0.38 hours.

Estimated Total Annual Burden on Respondents: 12,221 hours.

We are requesting comments on all aspects of this information collection to help us to:

(1) Evaluate whether the collection of information is necessary for the proper performance of the functions of the FSA, including whether the information will have practical utility;

(2) Evaluate the accuracy of the FSA's estimate of burden including the validity of the methodology and assumptions used;

(3) Enhance the quality, utility, and clarity of the information to be collected; or

(4) Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

All comments received in response to this notice, including names and addresses when provided, will be a matter of public record. Comments will be summarized and included in the submission for Office of Management and Budget approval.

Zach Ducheneaux,

Administrator, Farm Service Agency.

[FR Doc. 2021–13874 Filed 6–28–21; 8:45 am]

BILLING CODE 3410–05–P

DEPARTMENT OF AGRICULTURE

Forest Service

White Pine-Nye Resource Advisory Committee

AGENCY: Forest Service, USDA.

ACTION: Notice of meeting.

SUMMARY: The White Pine-Nye Resource Advisory Committee (RAC) will hold a virtual meeting by phone and/or video conference. The committee is authorized under the Secure Rural Schools and Community Self-Determination Act (the Act) and operates in compliance with the Federal

Advisory Committee Act. The purpose of the committee is to improve collaborative relationships and to provide advice and recommendations to the Forest Service concerning projects and funding consistent with Title II of the Act as well as make recommendations on recreation fee proposals for sites on the Humboldt-Toiyabe National Forest within White Pine, Nye, Lander and Eureka Counties, consistent with the Federal Lands Recreation Enhancement Act. RAC information and virtual meeting information can be found at the following website: *https://www.fs.usda.gov/htnf/.*

DATES: The meeting will be held on July 29, 2021 at 10:00 a.m., Pacific Daylight Time.

All RAC meetings are subject to cancellation. For status of the meeting prior to attendance, please contact the person listed under **FOR FURTHER INFORMATION CONTACT.**

ADDRESSES: The meeting will be held via TEAMS with an option to join by conference call.

Written comments may be submitted as described under **SUPPLEMENTARY INFORMATION.** All comments, including names and addresses when provided, are placed in the record and are available for public inspection and copying. The public may inspect comments received upon request.

FOR FURTHER INFORMATION CONTACT: Jose Noriega, Designated Federal Officer (DFO), by phone at 775–289–0176 or email at *jose.noriega@usda.gov.* Individuals who use telecommunication devices for the hearing-impaired (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 between 8:00 a.m. and 8:00 p.m., Eastern Daylight Time, Monday through Friday.

SUPPLEMENTARY INFORMATION: The purpose of the meeting is to:

1. Elect a RAC chairperson and vice chairperson;
2. Introduce and provide an overview of RAC roles and responsibilities;
3. Establish operating norms for the RAC;
4. Review and provide a recommendation on proposed recreation fee increases on the Ely Ranger District, Humboldt-Toiyabe National Forest;
5. Review Title II project proposal recommendation and approval process; and
6. Schedule the next meeting.

The meeting is open to the public. The agenda will include time for people to make oral statements of three minutes or less. Individuals wishing to make an oral statement should request in writing by July 9, 2021, to be scheduled on the agenda. Anyone who would like to bring related matters to the attention of the committee may file written statements with the committee staff before or after the meeting. Written comments and requests for time for oral comments must be sent to Jose Noriega, Ely Ranger District, 825 Avenue E, Ely, NV 89301; or by email to *jose.noriega@usda.gov.*

Meeting Accommodations: If you are a person requiring reasonable accommodation, please make requests in advance for sign language interpreting, assistive listening devices, or other reasonable accommodation. For access to the facility or proceedings, please contact the person listed in the section titled **FOR FURTHER INFORMATION CONTACT.** All reasonable accommodation requests are managed on a case-by-case basis.

Dated: June 23, 2021.

Cikena Reid,

USDA Committee Management Officer.

[FR Doc. 2021–13798 Filed 6–28–21; 8:45 am]

BILLING CODE 3411–15–P

DEPARTMENT OF AGRICULTURE

Forest Service

Ketchikan Resource Advisory Committee; Meeting

AGENCY: Forest Service, USDA.

ACTION: Notice of meeting.

SUMMARY: The Ketchikan Resource Advisory Committee (RAC) will hold a virtual meeting by phone and/or video conference. The committee is authorized under the Secure Rural Schools and Community Self-Determination Act (the Act) and operates in compliance with the Federal Advisory Committee Act. The purpose of the committee is to improve collaborative relationships and to provide advice and recommendations to the Forest Service concerning projects and funding consistent with Title II of the Act as well as make recommendations on recreation fee proposals for sites on the Tongass National Forest, within Ketchikan Borough, consistent with the Federal Lands Recreation Enhancement Act.

DATES: The meeting will be held on July 22, 2021 at 6:00 p.m., Alaska Daylight Time.

All RAC meetings are subject to cancellation. For status of the meeting prior to attendance, please contact the person listed under **FOR FURTHER INFORMATION CONTACT.**

ADDRESSES: The meeting will be held virtually via telephone and/or video conference.

Written comments may be submitted as described under **SUPPLEMENTARY INFORMATION.** All comments, including names and addresses when provided, are placed in the record and are available for public inspection and copying. The public may inspect comments received upon request.

FOR FURTHER INFORMATION CONTACT: Shane Walker, Designated Federal Officer (DFO), by phone at 907–228–4100 or email at *michael.s.walker@usda.gov* or Penny Richardson, RAC Coordinator, at 907–228–4105 or email at *penny.richardson@usda.gov.*

Individuals who use telecommunication devices for the hearing-impaired (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 between 8:00 a.m. and 8:00 p.m., Eastern Daylight Time, Monday through Friday.

SUPPLEMENTARY INFORMATION: The purpose of the meeting is to:

1. Hear from Title II project proponents and discuss project proposals;
2. Make funding recommendations on Title II projects;
3. Approve meeting minutes; and
4. Schedule the next meeting.

The meeting is open to the public. The agenda will include time for people to make oral statements of three minutes or less. Individuals wishing to make an oral statement should request in writing by July 15, 2021, to be scheduled on the agenda. Anyone who would like to bring related matters to the attention of the committee may file written statements with the committee staff before or after the meeting. Written comments and requests for time for oral comments must be sent to Penny Richardson, RAC Coordinator, 3031 Tongass Ave., Ketchikan, AK 99901; or by email to *penny.richardson@usda.gov.*

Meeting Accommodations: If you are a person requiring reasonable accommodation, please make requests in advance for sign language interpreting, assistive listening devices, or other reasonable accommodation. For access to the facility or proceedings, please contact the person listed in the section titled **FOR FURTHER INFORMATION CONTACT.** All reasonable accommodation requests are managed on a case-by-case basis.

Dated: June 23, 2021.

Cikena Reid,

USDA Committee Management Officer.

[FR Doc. 2021–13794 Filed 6–28–21; 8:45 am]

BILLING CODE 3411–15–P

DEPARTMENT OF AGRICULTURE

Forest Service

Del Norte County Resource Advisory Committee: Meeting

AGENCY: Forest Service, USDA.

ACTION: Notice of meeting.

SUMMARY: The Del Norte County Resource Advisory Committee (RAC) will hold a series of virtual meetings (with a call-in option). The committee is authorized under the Secure Rural Schools and Community Self-Determination Act (the Act) and operates in compliance with the Federal Advisory Committee Act (FACA). The purpose of the committee is to improve collaborative relationships and to provide advice and recommendations to the Forest Service concerning projects and funding consistent with Title II of the Act. RAC information can be found at the following website: *www.fs.usda.gov/main/srnf/workingtogether/advisorycommittee.*

DATES: The following virtual meetings will be held:

- July 20, 2021, 4:00 p.m.–8:00 p.m. Pacific Daylight Time
- July 21, 2021, 4:00 p.m.–8:00 p.m. Pacific Daylight Time
- July 22, 2021, 4:00 p.m.–8:00 p.m. Pacific Daylight Time

All RAC meetings are subject to cancellation. For status of the meeting prior to attendance, please contact the person listed under **FOR FURTHER INFORMATION CONTACT**.

ADDRESSES: The meeting will be held with virtual attendance only (with call-in option). For virtual meeting information, please contact the person listed under **FOR FURTHER INFORMATION CONTACT**.

Written comments may be submitted as described under **SUPPLEMENTARY INFORMATION**. All comments, including names and addresses when provided, are placed in the record and are available for public inspection and copying. The public may inspect comments received at: Gasquet Ranger District, 10600 Highway 199, Gasquet, CA 95543. Please call ahead to facilitate entry into the building.

FOR FURTHER INFORMATION CONTACT: Jeff Marszal, Del Norte County RAC Designated Federal Official (DFO), by phone at (707) 457–3131 or via email at *jeffrey.marszal@usda.gov.*

Individuals who use telecommunication devices for the hearing-imparired (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 between 8:00 a.m. and 8:00 p.m., Eastern Daylight Time, Monday through Friday.

SUPPLEMENTARY INFORMATION: The purpose of the meeting is to:

1. Elect committee chairperson, review FACA regulations, update committee governing documents, review past practices, and determine new process for project proposals;
2. Provide updates regarding the status of Secure Rural Schools Program and Title II funding;
3. Review and recommend existing potential projects eligible for funding; and
4. Solicit new project proposals.

The meetings are open to the public. The agendas will include time for people to make oral statements of three minutes or less. Individuals wishing to make an oral statement should request in writing 7 days before the meeting to be scheduled on the agenda for that particular meeting. Anyone who would like to bring related matters to the attention of the committee may file written statements with the committee staff before or after the meetings. Written comments and requests for time to make oral comments must be sent to Jeff Marszal, Del Norte County RAC DFO, Gasquet Ranger District, 10600 Highway 199, Gasquet, CA 95543; by email to *jeffrey.marszal@usda.gov;* or via facsimile to (707) 457–3794.

Meeting Accommodations: If you are a person requiring reasonable accommodation, please make requests in advance for sign language interpreting, assistive listening devices, or other reasonable accommodation. For access to the facility or proceedings, please contact the person listed in the section titled **FOR FURTHER INFORMATION CONTACT**. All reasonable accommodation requests are managed on a case-by-case basis.

Dated: June 23, 2021.

Cikena Reid,

USDA Committee Management Officer.

[FR Doc. 2021–13793 Filed 6–28–21; 8:45 am]

BILLING CODE 3411–15–P

DEPARTMENT OF AGRICULTURE

Forest Service

Information Collection; Grazing Permit Administration Forms

AGENCY: Forest Service, USDA.

ACTION: Notice; request for comment.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, the Forest Service is seeking comments from all interested individuals and organizations on the extension (with no revision) of a currently approved information collection, *Grazing Permit Administration Forms.*

DATES: Comments must be received in writing on or before August 30, 2021 to be assured of consideration. Comments received after that date will be considered to the extent practicable.

ADDRESSES: Commenters are encouraged to submit comments by email, if possible. You may submit comments by any of the following methods:

- *Email: mary.monson@usda.gov.*
- *Mail:* USDA Forest Service, Director, Forest Management, Range Management and Vegetation Ecology, Attention: Kaylene Monson, 1400 Independence Ave. SW, Mailstop Code: 1103, Washington, DC 20250–1103.
- *Hand Delivery/Courier:* Forest Service, USDA, 1400 Independence Avenue SW, Washington, DC 20250.

Comments received in response to this notice may be made available to the public through relevant websites and upon request. For this reason, please do not include in your comments information of a confidential nature, such as sensitive personal information or proprietary information. If you send an email comment, your email 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. Please note that responses to this public comment request containing any routine notice about the confidentiality of the communication will be treated as public comments that may be made available to the public notwithstanding the inclusion of the routine notice.

The public may request an electronic copy of the draft supporting statement and/or any comments received. Requests should be emailed to *mary.monson@usda.gov.*

FOR FURTHER INFORMATION CONTACT: Kaylene Monson, Forest Management, Rangeland Management and Vegetation Ecology at 406–217–1358 or email *mary.monson@usda.gov.* Individuals who use telecommunication devices for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 twenty-four hours a day, every day of the year, including holidays.

SUPPLEMENTARY INFORMATION:

Title: Grazing Permit Administration Forms.

OMB Number: 0596–0003.

Expiration Date of Approval: November 30, 2021.

Type of Request: Extension with no Revision of a currently approved information collection.

Abstract: This information collection extension is necessary to continue allowing proper administration of livestock grazing programs on National Forest System (NFS) lands. Domestic livestock grazing occurs on approximately 94 million acres of NFS lands. Grazing on NFS lands is subject to authorization and administrative oversight by the Forest Service. The information collected by the Forest Service is the minimum required for issuance and administration of grazing permits, including fee collections, as authorized by the Federal Land Policy and Management Act (FLPMA) of 1976, as amended (43 U.S.C. 1700 *et seq.*) and United States Department of Agriculture regulations at 36 CFR 222, subparts A and C. Similar information is not available from any other source. Some of the forms have been updated for technical corrections; these edits do not change the intent, amount, or type of information collected from the public.

Forest Service officials currently use the following forms to collect the information necessary to administer this program.

FS–2200–001; Refund, Credit, or Transfer Application collects the following information:

Estimate of Annual Burden: 20 minutes to complete the form.

- Name and mailing address;
- Permit number;
- National Forest or Grassland and Ranger District;
- Purpose of application: Credit on next year's fees, refund of overpaid fees, or transfer of credit to another account;
- The allotment, kind of livestock and number;
- Period rangeland not used; From and To dates;
- Reason for less use than permitted; and
- Signature of Permittee.

Information collected on this form enables the Forest Service to evaluate a grazing permittee's request for refund, credit, or transfer of the unused portion of the preceding season's grazing fees paid to the Forest Service for the occupancy of the National Forest System lands by permitted livestock.

FS–2200–002; Application for Temporary Grazing or Livestock Use Permit collects the following information:

Estimate of Annual Burden: 20 minutes to complete the form.

- Name and address of applicant;
- Livestock number, kind, and class;
- Period of use;
- Grazing allotment; and
- Signature of Applicant.

Information collected on this form enables the Forest Service to determine whether individuals qualify for a temporary grazing or livestock use permit, which authorizes grazing on certain NFS lands for a period not to exceed one year. The Forest Service uses the information on this form to determine whether the applicant is likely to comply with grazing permit terms and conditions.

FS–2200–012; Waiver of Term Grazing Permit enables the Forest Service to terminate an individual's grazing privileges on certain NFS lands based upon that individual's sale or transfer of base property, permitted livestock, or both to another individual who desires to acquire a new grazing permit. The waiver enables the Forest Service to cancel the grazing permit held by the individual who sold or transferred the base property, permitted livestock, or both; and to identify the individual who acquired the base property, permitted livestock, or both as the preferred applicant for a new grazing permit.

Estimate of Annual Burden: 30 minutes to complete the form.

- Name and address of permittee;
- Permit number;
- Date Permit Issued;
- Livestock number and livestock class;
- Period of use;
- Allotment;
- National Forest or Grassland and Ranger District;
- Date of Sale;
- Name and address of Purchaser;
- Livestock Number and Class OR Base Property Description;
- Signature of Permittee; and
- Signature of Purchaser.

FS–2200–013; Escrow Waiver of Term Grazing Permit Privileges collects information on loans made to permittees. The Forest Service uses the information to record the name and address of a permittee's lender, the amount of the loan, and the due date for repayment. The information assists Agency officials in determining whether to hold in escrow, on behalf of the lender, all of the privileges associated with the grazing permit except the privilege to graze. The Forest Service uses the collected information to (1) notify the lender of important issues associated with the administration of the grazing permit and (2) facilitate the transfer of a grazing permit to the lender if the permittee defaults on the loan.

Estimate of Annual Burden: 20 minutes to complete the form.

- Name and address of permittee;
- Permit number;
- Date Permit Issued;
- Livestock number and livestock class;
- National Forest or Grassland and Ranger District;
- Financial Institution Name and address;
- Livestock Number and Class OR Base Property Description;
- Amount of Loan and payable date; and
- Signature of Permittee.

FS–2200–016; Application for Term Grazing Permit collects the following information:

Estimate of Annual Burden: 30 minutes to complete the form.

- Name and address of applicant;
- Livestock Number, Kind and Class;
- Period of use;
- Grazing allotment; and
- Signature of applicant.

The information collected on this form enables the Forest Service to evaluate an applicant's eligibility and qualification to hold a term grazing permit authorizing the use of National Forest System lands for livestock grazing purposes, to determine the applicant's ability to comply with grazing permit terms and conditions, and to notify the applicant in writing of matters associated with the administration of permitted grazing including, but not limited to, bills for the fees associated with the permitted grazing.

FS–2200–017; Application for Term Private Land Grazing Permit collects the following information:

Estimate of Annual Burden: 20 minutes to complete the form.

- Name and address of applicant;
- Livestock Number, Kind and Class;
- Period of use;
- Grazing allotment; and
- Signature of applicant.

The information collected on this form enables the Forest Service to evaluate an applicant's eligibility and qualification to hold a term private land-grazing permit, which authorizes the use of National Forest System lands and private lands owned or controlled by the applicant for livestock grazing purposes. The information also enables the Forest Service to determine the applicant's ability to comply with grazing permit terms and conditions, and to notify the applicant in writing of matters associated with the administration of permitted grazing.

FS–2200–025; Ownership Statement by Corporation, Partnership, or Other Legal Entity collects the following information:

Estimate of Annual Burden: 10 minutes to complete the form.

- Name of corporation, partnership, or other legal entity;
- The name, title, signing authority, mailing address, shares owned, or percent of ownership of each stockholder, partner, or member of the entity; and

• Signature of applicant.

The information on this form enables the Forest Service to evaluate whether a corporation, partnership, or other legal entity is eligible and qualified to hold a term grazing permit authorizing grazing on certain National Forest System lands, whether the entity is authorized to conduct business in the state in which the National Forest System lands to be grazed are located, and which shareholders, partners, or members are authorized to sign official documents on behalf of the legal entity.

Type of Respondents: Individuals, Families, or Businesses (especially those owning and operating ranches and farms).

Estimated Annual Number of Respondents: 1,290.

Estimated Annual Number of Responses per Respondent: 1.

Estimated Total Annual Burden on Respondents: 504 hours.

Comment Is Invited

Comment is invited on: (1) Whether this collection of information is necessary for the stated purposes and the proper performance of the functions of the Agency, including whether the information will have practical or scientific utility; (2) the accuracy of the Agency's estimate of the burden of the collection of information, including the validity of the methodology and assumptions used; (3) ways to enhance the quality, utility, and clarity of the information to be collected; and (4) ways to minimize the burden of the collection of information on respondents, including the use of automated, electronic, mechanical, or other technological collection techniques or other forms of information technology.

All comments received in response to this notice, including names and addresses when provided, will be a matter of public record. Comments will be summarized and included in the submission request toward Office of Management and Budget approval.

Barnie Gyant,

Associate Deputy Chief, National Forest System.

[FR Doc. 2021–13795 Filed 6–28–21; 8:45 am]

BILLING CODE 3411–15–P

DEPARTMENT OF AGRICULTURE

Forest Service

El Dorado County Resource Advisory Committee

AGENCY: Forest Service, USDA.

ACTION: Notice of meeting.

SUMMARY: The El Dorado County Resource Advisory Committee (RAC) will hold a virtual meeting. The committee is authorized under the Secure Rural Schools and Community Self-Determination Act (the Act) and operates in compliance with the Federal Advisory Committee Act. The purpose of the committee is to improve collaborative relationships and to provide advice and recommendations to the Forest Service concerning projects and funding consistent with the Act. RAC information can be found at the following website: *https://www.fs.usda.gov/main/eldorado/workingtogether/advisorycommittees*.

DATES: The meeting will be held on Wednesday, July 13, 2021, 4:00–6:00 p.m., Pacific Daylight Time.

All RAC meetings are subject to cancellation. For status of meeting prior to attendance, please contact the person listed under **FOR FURTHER INFORMATION CONTACT.**

ADDRESSES: The meeting will be held with virtual attendance only. For virtual meeting information, please contact the person listed under **FOR FURTHER INFORMATION CONTACT.**

Written comments may be submitted as described under **SUPPLEMENTARY INFORMATION.** All comments, including names and addresses when provided, are placed in the record and are available for public inspection and copying. The public may inspect comments received at: El Dorado National Forest Supervisor's Office, 100 Forni Road, Placerville, CA. Please call ahead to facilitate entry into the building.

FOR FURTHER INFORMATION CONTACT: Jennifer Chapman, Public Affairs Officer by phone at (530) 957–9660 or via email at *jennifer.chapman@usda.gov.*

Individuals who use telecommunication devices for the hearing-impaired (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 between 8:00 a.m. and 8:00 p.m., Eastern Daylight Time, Monday through Friday.

SUPPLEMENTARY INFORMATION: The purpose of the meeting is to discuss the next call for project proposals and provide an update on coordination with current project managers.

The meeting is open to the public. The agenda will include time for people to make oral statements of three minutes or less. Individuals wishing to make an oral statement should request in writing 7 days before the meeting to be scheduled on the agenda. Anyone who would like to bring related matters to the attention of the committee may file written statements with the committee staff before or after the meeting. Written comments and requests for time to make oral comments must be sent to Jennifer Chapman, El Dorado National Forest, 100 Forni Road, Placerville, CA 95667, by email to *jennifer.chapman@usda.gov,* or via facsimile to (530) 621–5297.

Meeting Accommodations: If you are a person requiring reasonable accommodation, please make requests in advance for sign language interpreting, assistive listening devices, or other reasonable accommodation. For access to the facility or proceedings, please contact the person listed in the section titled **FOR FURTHER INFORMATION CONTACT**. All reasonable accommodation requests are managed on a case-by-case basis.

Dated: June 23, 2021.

Cikena Reid,

USDA Committee Management Officer.

[FR Doc. 2021–13796 Filed 6–28–21; 8:45 am]

BILLING CODE 3411–15–P

DEPARTMENT OF COMMERCE

Census Bureau

Agency Information Collection Activities; Submission to the Office of Management and Budget (OMB) for Review and Approval; Comment Request; Small Business Pulse Survey

The Department of Commerce will submit the following information collection request to the Office of Management and Budget (OMB) for review and clearance in accordance with the Paperwork Reduction Act of 1995, on or after the date of publication of this notice. We invite the general public and other Federal agencies to comment on proposed, and continuing information collections, which helps us assess the impact of our information collection requirements and minimize the public's reporting burden. Public comments were previously requested via the **Federal Register** on May 19, 2020 during a 60-day comment period. This notice allows for an additional 30 days for public comments.

Agency: Census Bureau, Commerce.

Title: Small Business Pulse Survey.

OMB Control Number: 0607–1014.

Form Number(s): None.

Type of Request: Regular Submission, Request for a Revision of a Currently Approved Collection.

Number of Respondents: 810,000 (22,500 responses per week for up to a maximum of 36 weeks of collection).

Average Hours per Response: 6 minutes.

Burden Hours: 81,000 + 36 hours for cognitive testing = 81,036.

Needs and Uses: Phase 1 of the Small Business Pulse Survey was launched on April 26, 2020 as an effort to produce and disseminate high-frequency, geographic- and industry-detailed experimental data about the economic conditions of small businesses as they experience the coronavirus pandemic. It is a rapid response endeavor that leverages the resources of the federal statistical system to address emergent data needs. Given the rapidly changing dynamics of this situation for American small businesses, the Small Business Pulse Survey has been successful in meeting an acute need for information on changes in revenues, business closings, employment and hours worked, disruptions to supply chains, and expectations for future operations. In addition, the Small Business Pulse Survey provided important estimates of federal program uptake to key survey stakeholders.

Due to the ongoing nature of the pandemic, the Census Bureau subsequently conducted Phases 2, 3, 4 and 5 of the Small Business Pulse Survey. The Office of Management and Budget authorized clearance of Phase 5 of the Small Business Pulse Survey on May 11, 2021. The Census Bureau now seeks approval to conduct Phase 6 of the Small Business Pulse Survey which will occur over 9 weeks starting August 16, 2021.

The continuation of the Small Business Pulse Survey is responsive to stakeholder requests for high frequency data that measure the effect of changing business conditions during the Coronavirus pandemic on small businesses. While the ongoing monthly and quarterly economic indicator programs provide estimates of dollar volume outputs for employer businesses of all size, the Small Business Pulse Survey captures the effects of the pandemic on operations and finances of small, single location employer businesses. As the pandemic continues, the Census Bureau is best poised to collect this information from a large and diverse sample of small businesses.

It is hard to predict when a shock will result in economic activity changing at a weekly, bi-weekly, or monthly frequency. Early in the pandemic, federal, state, and local policies were moving quickly so it made sense to have a weekly collection. The problem is that while we are in the moment, we cannot accurately forecast the likelihood of policy action. In addition, we are not able to forecast a change in the underlying cause of policy actions: The effect of the Coronavirus pandemic on the economy. We cannot predict changes in the severity of the pandemic (*e.g.,* will it worsen in flu season?) nor future developments that will alleviate the pandemic (*e.g.,* vaccines or treatments). In a period of such high uncertainty, the impossibility of forecasting these inflection points underscores the benefits of having a weekly survey. For these reasons, the Census Bureau will proceed with a weekly collection.

SBPS Phase 6 content includes core concepts as previous phases, such as overall impact, business closures/openings, revenue and employment changes, and expectations while also including questions relevant to economic recovery and new business norms. Questions 11–14 are newly developed content for Phase 6 and are subjective rather than quantitative by design. The goal is for the respondent to provide their own context based on their discretion.

In the event of a pandemic reoccurrence scenario, the Census Bureau would shift to utilize previous and existing content for Phase 6. In anticipation that recovery questions will be utilized, we completed two rounds of cognitive testing, starting on May 3, 2021 and ending on May 25, 2021. OMB approved the Phase 6 cognitive testing on April 30, 2021. An additional flash round of cognitive testing was completed from Monday, June 21–Wednesday, June 23rd to satisfy a late content request from the International Trade Administration.

All results from the Small Business Pulse Survey will continue to be disseminated as U.S. Census Bureau Experimental Data Products (*https://portal.census.gov/pulse/data/*). This and additional information on the Small Business Pulse Survey are available to the public on *census.gov*.

Affected Public: Business or other for-profit organizations.

Frequency: Small business will be selected once to participate in a 6-minute survey.

Respondent's Obligation: Voluntary.

Legal Authority: Title 13 U.S.C., Sections 131 and 182.

This information collection request may be viewed at *www.reginfo.gov*. Follow the instructions to view the Department of Commerce collections currently under review by OMB.

Written comments and recommendations for the proposed information collection should be submitted within 30 days of the publication of this notice on the following website *www.reginfo.gov/public/do/PRAMain.* Find this particular information collection by selecting ''Currently under 30-day Review—Open for Public Comments'' or by using the search function and entering either the title of the collection or the OMB Control Number 0607–1014.

Sheleen Dumas,

Department PRA Clearance Officer, Office of the Chief Information Officer, Commerce Department.

[FR Doc. 2021–13868 Filed 6–28–21; 8:45 am]

BILLING CODE 3510–07–P

DEPARTMENT OF COMMERCE

Foreign-Trade Zones Board

[B–47–2021]

Foreign-Trade Zone 252—Amarillo, Texas; Application for Reorganization Under Alternative Site Framework

An application has been submitted to the Foreign-Trade Zones (FTZ) Board by the City of Amarillo, Texas, grantee of FTZ 252, requesting authority to reorganize the zone under the alternative site framework (ASF) adopted by the FTZ Board (15 CFR Sec. 400.2(c)). The ASF is an option for grantees for the establishment or reorganization of zones and can permit significantly greater flexibility in the designation of new subzones or ''usage-driven'' FTZ sites for operators/users located within a grantee's ''service area'' in the context of the FTZ Board's standard 2,000-acre activation limit for a zone. The application was submitted pursuant to the Foreign-Trade Zones Act, as amended (19 U.S.C. 81a–81u), and the regulations of the Board (15 CFR part 400). It was formally docketed on June 22, 2021.

FTZ 252 was approved by the FTZ Board on August 28, 2001 (Board Order 1183, 66 FR 48116–48117, September 18, 2001). The current zone includes the following sites: *Site 1* (4,000 acres)—Amarillo International Airport and adjacent industrial park property, 10801 Airport Boulevard, Amarillo (Potter County); *Site 2* (6 acres)—Panhandle Container Service Center, 1201 South Johnson Street, Amarillo; *Site 3* (345 acres)—Hutchinson County Airport and Industrial Park, Borger; *Site 4* (68 acres)—Ferguson Business Park, 650 Wilson Avenue, Dumas (Moore County); *Site 5* (95 acres)—Industrial Park East, State Highway 60, Pampa (Gray County); *Site 6* (213 acres)—PEDCO Park, Tying Avenue, Pampa; *Site 7* (0.52 acres)—Donley site, ½ block from State Highway 87, Tulia (Swisher County); *Site 8* (6 acres)—RCD site, adjacent to the Burlington Northern Santa Fe Railroad in the 1000 block of NW 6th

Street, Tulia; *Site 9* (10 acres)—Anderson site, State Highway 87, Tulia; and, *Site 10* (3 acres)—Bivens site, Interstate 27 near the intersection of State Highway 86, Tulia.

The grantee's proposed service area under the ASF would be Armstrong, Oldham, Potter and Randall Counties, Texas, as described in the application. If approved, the grantee would be able to serve sites throughout the service area based on companies' needs for FTZ designation. The application indicates that the proposed service area is within and adjacent to the Amarillo Customs and Border Protection port of entry.

The applicant is requesting authority to reorganize its existing zone to include all of the existing sites as ''magnet'' sites. The ASF allows for the possible exemption of one magnet site from the ''sunset'' time limits that generally apply to sites under the ASF, and the applicant proposes that Site 1 be so exempted. No subzones/usage-driven sites are being requested at this time.

In accordance with the FTZ Board's regulations, Camille Evans and Christopher Wedderburn of the FTZ Staff are designated examiners to evaluate and analyze the facts and information presented in the application and case record and to report findings and recommendations to the FTZ Board.

Public comment is invited from interested parties. Submissions shall be addressed to the FTZ Board's Executive Secretary and sent to: *ftz@trade.gov*. The closing period for their receipt is August 30, 2021. Rebuttal comments in response to material submitted during the foregoing period may be submitted during the subsequent 15-day period to September 13, 2021.

A copy of the application will be available for public inspection in the ''Reading Room'' section of the FTZ Board's website, which is accessible via *www.trade.gov/ftz*. For further information, contact Camille Evans at *Camille.Evans@trade.gov* or Christopher Wedderburn at *Chris.Wedderburn@trade.gov*.

Dated: June 24, 2021.

Andrew McGilvray,

Executive Secretary.

[FR Doc. 2021–13832 Filed 6–28–21; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

Foreign-Trade Zones Board

[B–14–2021]

Foreign-Trade Zone (FTZ) 24—Pittston, Pennsylvania; Authorization of Production Activity; Merck & Co., Inc. (Pharmaceutical Products), Riverside, Pennsylvania

On February 24, 2021, Merck & Co., Inc., submitted a notification of proposed production activity to the FTZ Board for its facility within Subzone 24B, in Riverside, Pennsylvania.

The notification was processed in accordance with the regulations of the FTZ Board (15 CFR part 400), including notice in the **Federal Register** inviting public comment (86 FR 12907–12908, March 5, 2021). On June 24, 2021, the applicant was notified of the FTZ Board's decision that no further review of the activity is warranted at this time. The production activity described in the notification was authorized, subject to the FTZ Act and the FTZ Board's regulations, including Section 400.14.

Dated: June 24, 2021.

Andrew McGilvray,

Executive Secretary.

[FR Doc. 2021–13837 Filed 6–28–21; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

International Trade Administration

[A–570–958]

Certain Coated Paper Suitable for High-Quality Print Graphics Using Sheet-Fed Presses From the People's Republic of China: Rescission of Antidumping Duty Administrative Review; 2019–2020

AGENCY: Enforcement and Compliance, International Trade Administration, Department of Commerce.

SUMMARY: The Department of Commerce (Commerce) is rescinding the administrative review of the antidumping duty order on certain coated paper suitable for high-quality print graphics using sheet-fed presses (coated paper) from the People's Republic of China (China) for the period November 1, 2019, through October 31, 2020, based on the withdrawal of the request for review.

DATES: Applicable June 29, 2021.

FOR FURTHER INFORMATION CONTACT: Alex Cipolla, AD/CVD Operations, Office III, Enforcement and Compliance, International Trade Administration, U.S. Department of Commerce, 1401 Constitution Avenue NW, Washington, DC 20230; telephone: (202) 482–4956.

SUPPLEMENTARY INFORMATION:

Background

On November 3, 2020, the Commerce published in the **Federal Register** a notice of opportunity to request an administrative review of the antidumping duty (AD) order on coated paper from China.[1] Commerce received a timely-filed request from Verso Corporation (Verso), a domestic interested party and the petitioner in the underlying investigation, for an administrative review of exports of subject merchandise to the United States during the period of review (POR) with respect to 15 companies, in accordance with section 751(a) of the Tariff Act of 1930, as amended, (the Act) and 19 CFR 351.213(b).[2] On January 6, 2021, pursuant to this request, and in accordance with 19 CFR 351.221(c)(1)(i), Commerce published a notice in the **Federal Register** initiating an administrative review of the AD order on coated paper from China.[3] On March 26, 2021, Verso withdrew its request for an administrative review with respect to all companies for which it requested a review.[4]

Rescission of Review

Pursuant to 19 CFR 351.213(d)(1), Commerce will rescind an administrative review, in whole or in part, if the party or parties that requested the review withdraws its request within 90 days of the publication date of the notice of initiation of the requested review. Verso timely submitted a request to withdraw its request for an administrative review for all companies for which an administrative review was initiated and later clarified that its initial submission applied to all companies, although it omitted one by name. No other party requested an administrative review of

[1] *See Antidumping or Countervailing Duty Order, Finding, or Suspended Investigation; Opportunity to Request Administrative Review,* 85 FR 69586 (November 3, 2020).

[2] *See* Verso's Letter, ''Administrative Review of the Antidumping Duty Order on Certain Coated Paper Suitable for High-Quality Print Graphics Using Sheet-Fed Presses from the People's Republic of China (11/01/19–10/31/20),'' dated November 30, 2020.

[3] *See Initiation of Antidumping and Countervailing Duty Administrative Reviews,* 86 FR 511 (January 6, 2021).

[4] *See* Verso's Letters, ''Withdrawal of Request for Administrative Review,'' dated March 26, 2021 (withdrawing Verso's request for review generally, but only specifically listing 14 companies); and ''Withdrawal of Request for Administrative Review,'' dated May 5, 2021 (clarifying that Verso's withdrawal unintentionally omitted Sinar Mas Paper Investment Co., Ltd. from the first withdrawal request).

the order. Therefore, in accordance with 19 CFR 351.213(d)(1), we are rescinding this review, in its entirety.

Assessment

Commerce intends to instruct U.S. Customs and Border Protection (CBP) to assess antidumping duties on all appropriate entries of coated paper from China. Antidumping duties shall be assessed at rates equal to the cash deposit of estimated antidumping duties required at the time of entry, or withdrawal from warehouse, for consumption in accordance with 19 CFR 351.212(c)(1)(i). Commerce intends to issue appropriate assessment instructions to CBP 35 days after the date of publication of this notice in the **Federal Register**.

Notification to Importers

This notice serves as the only reminder to importers, whose entries will be liquidated as a result of this rescission notice, of their responsibility under 19 CFR 351.402(f)(2) to file a certificate regarding the reimbursement of antidumping and/or countervailing duties prior to liquidation of the relevant entries during this review period. Failure to comply with this requirement could result in the presumption that reimbursement of the antidumping and/or countervailing duties occurred and the subsequent assessment of double antidumping duties.

Notification Regarding Administrative Protective Order

This notice also serves as a reminder to all parties subject to administrative protective order (APO) of their responsibility concerning the disposition of proprietary information disclosed under APO in accordance with 19 CFR 351.305. Timely written notification of the return/destruction of APO materials or conversion to judicial protective order is hereby requested. Failure to comply with the regulations and terms of an APO is a violation which is subject to sanction.

Notification to Interested Parties

This notice is issued and published in accordance with sections 751(a)(1) and 777(i)(1) of the Act, and 19 CFR 351.213(d)(4).

Dated: June 24, 2021.

James Maeder,

Deputy Assistant Secretary for Antidumping and Countervailing Duty Operations.

[FR Doc. 2021–13833 Filed 6–28–21; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XB151]

Caribbean Fishery Management Council; Public Meeting

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of a public meeting.

SUMMARY: The Caribbean Fishery Management Council's (Council) Outreach and Education Advisory Panel (OEAP) will hold a 2-day public virtual meeting on July 28–29, 2021, to discuss the items contained in the agenda in the **SUPPLEMENTARY INFORMATION**.

DATES: The OEAP virtual meeting will be held on July 28, 2021, from 12 p.m. to 3 p.m. and on July 29, 2021, from 12 p.m. to 3 p.m.

ADDRESSES: You may join the OEAP public virtual meeting (via Zoom) from a computer, tablet or smartphone by entering the following address:

OEAP Zoom Meeting

Topic: OEAP
Time: This is a recurring meeting Meet anytime
Join Zoom Meeting
https://us02web.zoom.us/j/84039986774?pwd=SUhDc1hXeFloQWF3ajVtL2ZHRGN3Zz09
Meeting ID: 840 3998 6774
Passcode: 179728
One tap mobile
+17879667727,,84039986774#,,,,*179728# Puerto Rico
+19399450244,,84039986774#,,,,*179728# Puerto Rico
Dial by your location
+1 787 966 7727 Puerto Rico
+1 939 945 0244 Puerto Rico
+1 787 945 1488 Puerto Rico
+1 669 900 6833 US (San Jose)
+1 929 205 6099 US (New York)
+1 253 215 8782 US (Tacoma)
+1 301 715 8592 US (Washington DC)
+1 312 626 6799 US (Chicago)
+1 346 248 7799 US (Houston)
Meeting ID: 840 3998 6774
Passcode: 179728

FOR FURTHER INFORMATION CONTACT: Diana Martino, (787) 226–8849, Caribbean Fishery Management Council, 270 Muñoz Rivera Avenue, Suite 401, San Juan, Puerto Rico 00918–1903.

SUPPLEMENTARY INFORMATION:

July 28, 2021

12 p.m.–1 p.m.

—Call to Order
—Adoption of Agenda
—OEAP Chairperson's Report
—Updates of:
—Recipe Book
—Educational strategies to Insert the *Marine Fishery Ecosystem Book* in the School Curricula
—Issues/Activities in USVI and PR
—Wilson Santiago/PR
—Nicole Greaux/St. Thomas
—Nikole Angeli or designee

1 p.m.–1:10 p.m.

—Break

1:10 p.m.–3 p.m.

—Communication and Outreach Strategies 2021–25
—Marine Protected Areas in Territorial and Federal Jurisdiction
— O&E recommendations on MPAs

July 29, 2021

12 p.m.–1 p.m.

—CFMC Five Year Strategic Plan
—O & E Strategies to Support the Plan

1 p.m.–1:10 p.m.

—Break

1:10 p.m.–3 p.m.

—2022 Calendar
—CFMC Facebook, Instagram and YouTube Communications with Stakeholders
—Other Business

The order of business may be adjusted as necessary to accommodate the completion of agenda items. The meeting will begin on July 28, 2021 at 12 p.m. and will end on July 29, 2021, at 3 p.m. Other than the start time, interested parties should be aware that discussions may start earlier or later than indicated. In addition, the meeting may be extended from, or completed prior to the date established in this notice.

Special Accommodations

For any additional information on this public virtual meeting, please contact Diana Martino, Caribbean Fishery Management Council, 270 Muñoz Rivera Avenue, Suite 401, San Juan, Puerto Rico, 00918–1903, telephone: (787) 226–8849.

Authority: 16 U.S.C. 1801 *et seq.*

Dated: June 24, 2021.

Tracey L. Thompson,

Acting Deputy Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 2021–13877 Filed 6–28–21; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XB089]

Taking of Marine Mammals Incidental to Specific Activities; Taking of Marine Mammals Incidental to Pile Driving and Removal Activities During the Metlakatla Seaplane Facility Refurbishment Project, Metlakatla, Alaska

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; proposed incidental harassment authorization; request for comments on proposed authorization and possible renewal.

SUMMARY: NMFS has received a request from the Alaska Department of Transportation and Public Facilities (AKDOT&PF) for authorization to take marine mammals incidental to pile driving/removal and down-the-hole drilling (DTH) activities during maintenance improvements to the existing Metlakatla Seaplane Facility (MSF) in Southeast Alaska. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an incidental harassment authorization (IHA) to incidentally take marine mammals during the specified activities. NMFS is also requesting comments on a possible one-year renewal that could be issued under certain circumstances and if all requirements are met, as described in Request for Public Comments at the end of this notice. NMFS will consider public comments prior to making any final decision on the issuance of the requested MMPA authorizations and agency responses will be summarized in the final notice of our decision.

DATES: Comments and information must be received no later than July 29, 2021.

ADDRESSES: Comments should be addressed to Jolie Harrison, Chief, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service and should be sent by electronic mail to *ITP.Egger@noaa.gov.*

Instructions: NMFS is not responsible for comments sent by any other method, to any other address or individual, or received after the end of the comment period. Comments must not exceed a 25-megabyte file size, including all attachments. All comments received are a part of the public record and will generally be posted online at *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act* without change. All personal identifying information (*e.g.,* name, address) voluntarily submitted by the commenter may be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information.

FOR FURTHER INFORMATION CONTACT: Stephanie Egger, Office of Protected Resources, NMFS, (301) 427–8401. Electronic copies of the application and supporting documents, as well as a list of the references cited in this document, may be obtained online at: *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act.* In case of problems accessing these documents, or for anyone who is unable to comment via electronic mail, please call the contact listed above.

SUPPLEMENTARY INFORMATION:

Background

The MMPA prohibits the ''take'' of marine mammals, with certain exceptions. Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce (as delegated to NMFS) to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, a notice of a proposed incidental take authorization may be provided to the public for review.

Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s) and will not have an unmitigable adverse impact on the availability of the species or stock(s) for taking for subsistence uses (where relevant). Further, NMFS must prescribe the permissible methods of taking and other ''means of effecting the least practicable adverse impact'' on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stocks for taking for certain subsistence uses (referred to in shorthand as ''mitigation''); and requirements pertaining to the mitigation, monitoring and reporting of such takings are set forth. The definitions of all applicable MMPA statutory terms cited above are included in the relevant sections below.

National Environmental Policy Act

To comply with the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) and NOAA Administrative Order (NAO) 216–6A, NMFS must review our proposed action (*i.e.,* the issuance of an IHA) with respect to potential impacts on the human environment. This action is consistent with categories of activities identified in Categorical Exclusion B4 (IHAs with no anticipated serious injury or mortality) of the Companion Manual for NOAA Administrative Order 216–6A, which do not individually or cumulatively have the potential for significant impacts on the quality of the human environment and for which we have not identified any extraordinary circumstances that would preclude this categorical exclusion. Accordingly, NMFS has preliminarily determined that the issuance of the proposed IHA qualifies to be categorically excluded from further NEPA review.

We will review all comments submitted in response to this notice prior to concluding our NEPA process or making a final decision on the IHA request.

Summary of Request

On August 10, 2020, NMFS received a request from the AKDOT&PF for an IHA to take marine mammals incidental to pile driving/removal and DTH activities during maintenance improvements to the existing MSF in Southeast Alaska. The application was deemed adequate and complete on November 23, 2020. The applicant also provided an addendum to their application on February 23, 2021 for the addition of eight piles, some changes to their proposed shutdown zones, and minor changes to their take estimates due to the increase of in-water work days from the eight additional piles. The applicant's request is for take of eight species of marine mammals by Level B harassment only. Neither the AKDOT&PF nor NMFS expects serious injury or mortality to result from this activity and, therefore, an IHA is appropriate.

Description of Proposed Activity

Overview

The purpose of this project is to make repairs to the MSF. The existing facility has experienced deterioration in recent years and AKDOT&PF has conducted several repair projects. The facility is near the end of its useful life, and replacement of all the existing float structures is required to continue safe operation in the future.

Dates and Duration

The applicant is requesting an IHA to conduct pile driving/removal and DTH over two months (approximately 26 working days) beginning in August 2021. Pile installation and removal will be intermittent during this period, depending on weather, construction and mechanical delays, protected species shutdowns, and other potential delays and logistical constraints. Pile installation will occur intermittently during the work period, for durations of minutes to hours at a time. Approximately 18 days of pile installation and 8 days of pile removal will occur using vibratory and impact pile driving and some DTH to stabilize the piles. These are discussed in further detail below. The total construction duration accounts for the time required to mobilize materials and resources and construct the project.

Specific Geographic Region

The proposed project in Metlakatla is located approximately 24 kilometers (km) (15 miles (mi)) south of Ketchikan, in Southeast Alaska. Metlakatla, is on Annette Island, in the Prince of Whales-Hyder Census Area of Southeast Alaska. The Metlakatla Seaplane Facility is centrally located in the village of Metlakatla on the south shore of Port Chester (Figure 1) within Section 5, Township 78 South, Range 92 East of the Copper River Meridian; United States Geological Survey Quad Map Ketchikan A–5; Latitude 55°7′50.30″ North, 131°34′28.08″ West.

Port Chester is a bay located on the east shore of Nichols Passage and on the west side of Annette Island. Port Chester contains numerous small islands and reefs. The bay is one of many that lead to a larger system of glacial fjords connecting various channels with the open ocean via Nichol's Passage, Clarence Strait, and Dixon Entrance. Port Chester is generally characterized by semidiurnal tides with mean tidal ranges of more than 5 meters (m) (16 feet (ft)). Freshwater inputs to Port Chester originate from Trout Lake, Melanson Lake, Chester Lake, and other minor drainages from Annette Island. Three anadromous streams terminate in Port Chester: Hemlock Creek, Trout Lake Creek, and an unnamed creek that originates from Melanson Lake (Giefer and Blossom 2020). The bathymetry of the bay is variable depending on location and proximity to shore, islands, or rocks. Depths approach 107 to 122 m (350 to 400 ft) on the west side of the bay near Nichols Passage. Nichols Passage is a wide and deep channel that runs between Gravina Island and Annette Island. Depths can exceed 305 m (1,000 ft) towards the south end of the channel.

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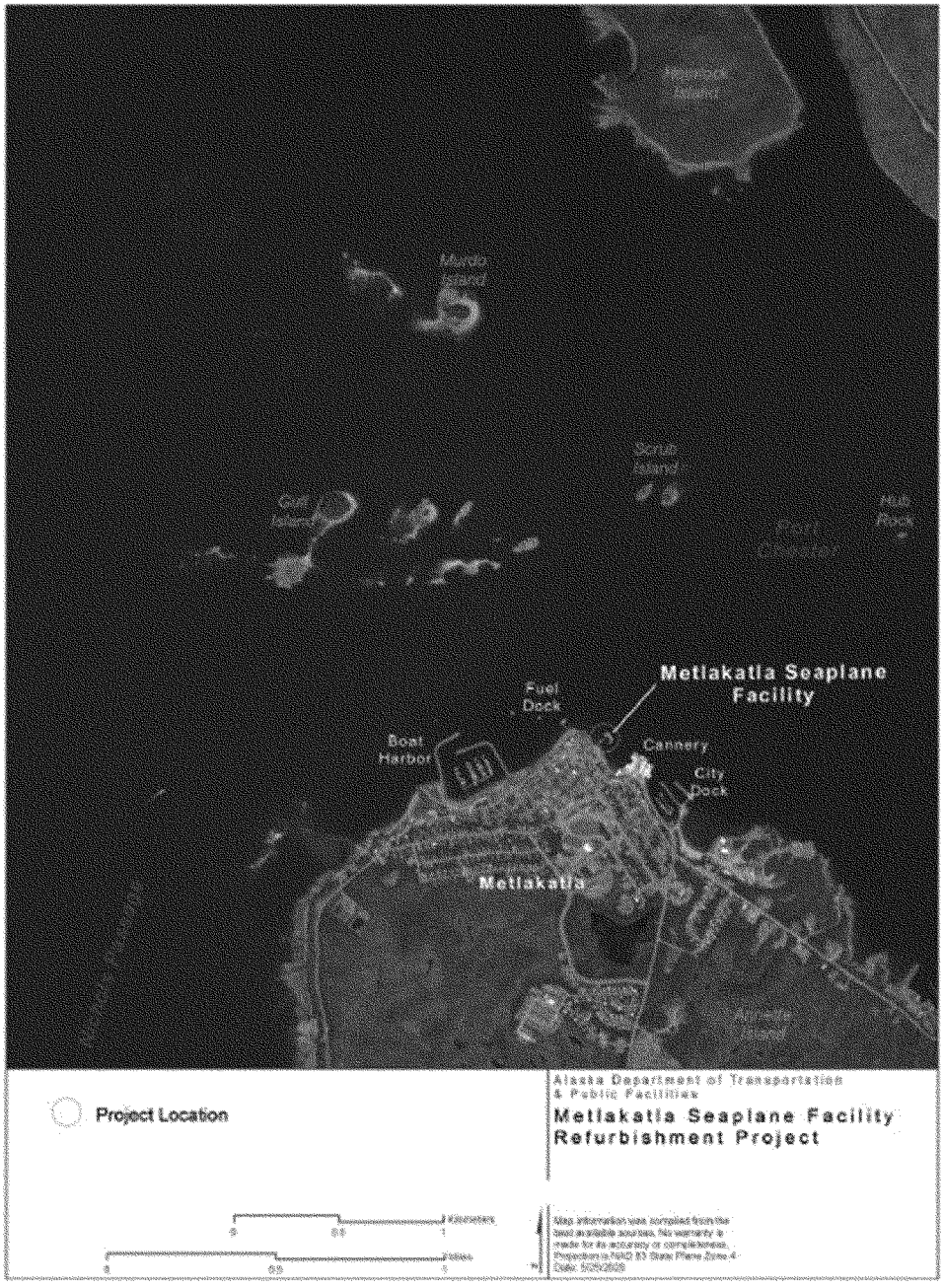


Figure 1--Project Location, Metlakatla, Alaska

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Detailed Description of Specific Activity

Proposed activities included as part of the project with potential to affect marine mammals include the noise generated by vibratory removal of steel pipe piles, vibratory and impact installation of steel pipe piles, and DTH to stabilize piles. Pile removal will be conducted using a vibratory hammer. Pile installation will be conducted using both a vibratory and impact hammer and DTH pile installation methods. Piles will be advanced to refusal using a vibratory hammer. After DTH pile installation, the final approximately 10 ft of driving will be conducted using an impact hammer so that the structural capacity of the pile embedment can be verified. The pile installation methods used will depend on sediment depth and conditions at each pile location. Pile installation and removal will occur in waters approximately 6–7 m (20–23 ft) in depth.

The project will involve the removal of 11 existing steel pipe piles (16-inch (in) diameter) that support the existing multiple-float structure. The multiple-float timber structure, which covers 8,600 square ft, will also be removed. A new 4,800-square-ft single-float timber structure will be installed in the same general location. Six 24-in diameter steel pipe piles will be installed to act as restraints for the new seaplane float. In addition, 12 temporary 24-in steel piles will be installed to support pile installation and removed following completion of construction.

DTH pile installation involves drilling rock sockets into the bedrock to support installation of the 6 permanent piles and 12 temporary piles. Rock sockets consist of inserting the pile in a drilled hole into the underlying bedrock after the pile has been driven through the overlying softer sediments to refusal by vibratory or impact methods. The pile is advanced farther into this drilled hole to properly secure the bottom portion of the pile into the rock. The depth of the rock socket varies, but 10–15 ft is commonly required. The diameter of the rock socket is slightly larger than the pile being driven. Rock sockets are constructed using a DTH device with both rotary and percussion-type actions. Each device consists of a drill bit that drills through the bedrock using both rotary and pulse impact mechanisms. This breaks up the rock to allow removal of the fragments and insertion of the pile. The pile is usually advanced at the same time that drilling occurs. Drill cuttings are expelled from the top of the pile using compressed air. It is estimated that drilling rock sockets into the bedrock will take about 1–3 hours (hrs) per pile. Tension anchors will be installed in each of the six permanent piles. Tension anchors are installed within piles that are drilled into the bedrock below the elevation of the pile tip after the pile has been driven through the sediment layer to refusal. A 6- or 8-in diameter steel pipe casing will be inserted inside the larger diameter production pile. A rock drill will be inserted into the casing, and a 6- to 8-in diameter hole will be drilled into bedrock with rotary and percussion drilling methods. The drilling work is contained within the steel pile casing and the steel pipe pile. The typical depth of the drilled hole varies, but 20–30 ft is common. Rock fragments will be removed through the top of the casing with compressed air. A steel rod will then be grouted into the drilled hole and affixed to the top of the pile. The purpose of a tension anchor is to secure the pile to the bedrock to withstand uplift forces. It is estimated that tension anchor installation will take about 1–2 hrs per pile.

No concurrent pile driving is anticipated for this project.

Please see Table 1 below for the specific amount of time required to install and remove piles.

TABLE 1—PILE DRIVING AND REMOVAL ACTIVITIES

Pile diameter and type	Number of piles	Rock sockets	Tension anchors	Impact strikes per pile (duration in minutes)	Vibratory duration per pile (minutes)	DTH pile installation (rock socket) duration per pile (minutes)	DTH pile installation (tension anchor) duration per pile (minutes)	Total duration of activity per pile (hours)	Piles per day (range)	Total days
Pile Installation										
24-in Steel Plumb Piles (Permanent)	4	4	4	20 (15)	15	180	120	5.5	0.5 (0–1)	8
24-in Steel Batter Piles (Permanent)	2	2	2	20 (15)	15	90	120	4	0.5 (0–1)	4
24-in Steel Piles (Temporary)	12	12	0	20 (15)	15	60	N/A	1.5	2 (1–3)	6
Pile Removal										
16-in Steel Piles	11	N/A	N/A	N/A	30	N/A	N/A	0.5	3 (2–4)	4
24-in Steel Piles (Temporary)	12	N/A	N/A	N/A	30	N/A	N/A	0.5	3 (2–4)	4
Totals	29	18	6	N/A	N/A	N/A	N/A	N/A	N/A	26

Note: DTH = down-the-hole; N/A = not applicable.

Proposed mitigation, monitoring, and reporting measures are described in detail later in this document (please see Proposed Mitigation and Proposed Monitoring and Reporting).

Description of Marine Mammals in the Area of Specified Activities

Sections 3 and 4 of the application summarize available information regarding status and trends, distribution and habitat preferences, and behavior and life history, of the potentially affected species. Additional information regarding population trends and threats may be found in NMFS' Stock Assessment Reports (SARs; *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports*) and more general information about these species (*e.g.,* physical and behavioral descriptions) may be found on NMFS's website (*https://www.fisheries.noaa.gov/find-species*).

Table 2 lists all species or stocks for which take is expected and proposed to be authorized for this action, and summarizes information related to the population or stock, including regulatory status under the MMPA and Endangered Species Act (ESA) and potential biological removal (PBR), where known. For taxonomy, we follow Committee on Taxonomy (2020). PBR is defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (as described in NMFS' SARs). While no mortality is anticipated or authorized here, PBR and annual serious injury and mortality from anthropogenic sources are included here as gross indicators of the status of the species and other threats.

Marine mammal abundance estimates presented in this document represent the total number of individuals that make up a given stock or the total number estimated within a particular study or survey area. NMFS' stock abundance estimates for most species represent the total estimate of individuals within the geographic area, if known, that comprises that stock. For some species, this geographic area may extend beyond U.S. waters. All managed stocks in this region are assessed in NMFS' U.S. Pacific and Alaska SARs (Carretta *et al.,* 2020; Muto *et al.,* 2020). All MMPA stock information presented in Table 2 is the most recent available at the time of publication and is available in the 2019 SARs (Caretta *et al.,* 2020; Muto *et al.,* 2020) and draft 2020 SARs (available online at: *www.fisheries.noaa.gov/national/marine-mammal-protection/draft-marine-mammal-stock-assessment-reports*).

TABLE 2—MARINE MAMMAL OCCURRENCE IN THE PROJECT AREA

Common name	Scientific name	Stock	ESA/ MMPA status; strategic (Y/N) [1]	Stock abundance (CV, N_{min}, most recent abundance survey) [2]	PBR	Annual M/ SI [3]
Order Cetartiodactyla—Cetacea—Superfamily Mysticeti (baleen whales)						
Family Balaenopteridae (rorquals):						
Minke Whale	*Balaenoptera acutorostrata*	Alaska	-, -, N	N/A (see SAR, N/A, see SAR).	UND	0
Humpback Whale	*Megaptera novaeangliae*	Central N Pacific	-, -, Y	10,103 (0.3, 7,891, 2006)	83	26
Superfamily Odontoceti (toothed whales, dolphins, and porpoises)						
Family Delphinidae:						
Killer Whale	*Orcinus orca*	Alaska Resident	-, -, N	2,347 (N/A, 2347, 2012)	24	1
		Northern Resident	-, -, N	302 (N/A, 302, 2018)	2.2	0.2
		West Coast Transient	-, -, N	349 (N/A,349; 2018)	3.5	0.4
Pacific White-Sided Dolphin.	*Lagenorhynchus obliquidens*	N Pacific	-, -, N	26,880 (N/A, N/A, 1990)	UND	0
Family Phocoenidae (porpoises):						
Dall's Porpoise	*Phocoenoides dalli*	AK	-, -, N	83,400 (0.097, N/A, 1991)	UND	38
Harbor Porpoise	*Phocoena phocoena*	Southeast Alaska Inland waters.	-, -, Y	see SAR (see SAR, see SAR, 2012).	see SAR	34
Order Carnivora—Superfamily Pinnipedia						
Family Otariidae (eared seals and sea lions):						
Steller sea lion	*Eumetopias jubatus*	Eastern DPS	T, D, Y	43,201 a (see SAR, 43,201, 2017).	2592	112
Family Phocidae (earless seals):						
Harbor Seal	*Phoca vitulina*	Clarence Strait	-, -, N	27,659 (see SAR, 24,854, 2015).	746	40

[1] Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

[2] NMFS marine mammal stock assessment reports online at: *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region.* CV is coefficient of variation; Nmin is the minimum estimate of stock abundance. In some cases, CV is not applicable [explain if this is the case]:

[3] These values, found in NMFS's SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.,* commercial fisheries, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value or range. A CV associated with estimated mortality due to commercial fisheries is presented in some cases.

As indicated above, all eight species (with 10 managed stocks) in Table 2 temporally and spatially co-occur with the activity to the degree that take is reasonably likely to occur, and we have proposed authorizing it.

Minke Whale

In the North Pacific Ocean, minke whales occur from the Bering and Chukchi seas south to near the Equator (Leatherwood *et al.,* 1982). In the northern part of their range, minke whales are believed to be migratory, whereas, they appear to establish home ranges in the inland waters of Washington and along central California (Dorsey *et al.* 1990). Minke whales are observed in Alaska's nearshore waters during the summer months (National Park Service (NPS) 2018). Minke whales are usually sighted individually or in small groups of 2–3, but there are reports of loose aggregations of hundreds of animals (NMFS 2018d).

No abundance estimates have been made for the number of minke whales in the entire North Pacific. However, some information is available on the numbers of minke whales in some areas of Alaska. Line-transect surveys were conducted in shelf and nearshore waters (within 30–45 nautical mi of land) in 2001–2003 from the Kenai Fjords in the Gulf of Alaska to the central Aleutian Islands. Minke whale abundance was estimated to be 1,233 (CV = 0.34) for this area (Zerbini *et al.,* 2006). This estimate has also not been corrected for animals missed on the trackline. The majority of the sightings were in the Aleutian Islands, rather than in the Gulf of Alaska, and in water shallower than 200 m. So few minke whales were seen during three offshore Gulf of Alaska surveys for cetaceans in 2009, 2013, and 2015 that a population estimate for this species in this area could not be determined (Rone *et al.,* 2017). Anecdotal observations suggest that minke whales do not enter Port Chester, and so are expected to occur rarely in the project area (L. Bethel, personal communication, June 11, 2020 as cited in the application). In nearby Tongass Narrows, NMFS estimated an occurrence rate of three individuals every 4 months (85 FR 673) based on Freitag, 2017 (as cited in 83 FR 37473). A recent monitoring report for Tongass Narrows reported no sightings of minke whales in May 2021 (report available at *https://www.fisheries.noaa.gov/action/incidental-take-authorization-alaska-department-transportation-ferry-berth-improvements*).

Humpback Whale

The humpback whale is distributed worldwide in all ocean basins and a broad geographical range from tropical to temperate waters in the Northern Hemisphere and from tropical to near-ice-edge waters in the Southern Hemisphere. The humpback whales that forage throughout British Colombia and Southeast Alaska undertake seasonal migrations from their tropical calving and breeding grounds in winter to their high-latitude feeding grounds in summer. They may be seen at any time

of year in Alaska, but most animals winter in temperate or tropical waters near Hawaii. In the spring, the animals migrate back to Alaska where food is abundant. The Central North Pacific stock of humpback whales are found in the waters of Southeast Alaska and consist of two distinct population segments (DPSs), the Hawaii DPS and the Mexico DPS (Mexico DPS listed under the ESA as threatened).

Within Southeast Alaska, humpback whales are found throughout all major waterways and in a variety of habitats, including open-ocean entrances, open-strait environments, near-shore waters, area with strong tidal currents, and secluded bays and inlets. They tend to concentrate in several areas, including northern Southeast Alaska. Patterns of occurrence likely follow the spatial and temporal changes in prey abundance and distribution with humpback whales adjusting their foraging locations to areas of high prey density (Clapham 2000). While many humpback whales migrate to tropical calving and breeding grounds in winter, they have been observed in Southeast Alaska in all months of the year (Bettridge *et al.,* 2015).

No systematic studies have documented humpback whale abundance near Metlakatla. Anecdotal information from Metlakatla and Ketchikan suggest that humpback whales' utilization of the area is intermittent year-round. Their abundance, distribution, and occurrence are dependent on and fluctuate with fish prey. Local mariners estimate that one to two humpback whales may be present in the Port Chester area on a daily basis during summer months (L. Bethel, personal communication, June 11, 2020 as cited in the application). This is consistent with reports from nearby Tongass Narrows, which suggest that humpback whales occur alone or in groups of two or three individuals about once a week (Freitag 2017 as cited in 85 FR 673). Therefore, in nearby Tongass Narrows, NMFS estimated that approximately four humpback whales may transit through each week (85 FR 673). A recent monitoring report for Tongass Narrows reported 9 individual sightings of humpback whales with 6 Level B harassment takes of humpback whales in May 2021(report available at *https://www.fisheries.noaa.gov/action/incidental-take-authorization-alaska-department-transportation-ferry-berth-improvements*). Anecdotal reports suggest that humpback whale abundance is higher and occurrence is more regular in Metlakatla.

On April 21, 2021, a final rule designating critical habitat for humpback whales was published in the **Federal Register** (86 FR 21082), however, no critical habitat for Mexico DPS humpback whales is within or near the project area.

Killer Whale

Killer whales have been observed in all oceans and seas of the world, but the highest densities occur in colder and more productive waters found at high latitudes. Killer whales are found throughout the North Pacific and occur along the entire Alaska coast, in British Columbia and Washington inland waterways, and along the outer coasts of Washington, Oregon, and California (NMFS 2018f).

The Alaska Resident stock occurs from Southeast Alaska to the Aleutian Islands and Bering Sea. The Northern Resident stock occurs from Washington State through part of Southeast Alaska; and the West Coast Transient stock occurs from California through Southeast Alaska (Muto *et al.,* 2018) and are thought to occur frequently in Southeast Alaska (Straley 2017).

Transient killer whales hunt and feed primarily on marine mammals, while residents forage primarily on fish. Transient killer whales feed primarily on harbor seals, Dall's porpoises, harbor porpoises, and sea lions. Resident killer whale populations in the eastern North Pacific feed mainly on salmonids, showing a strong preference for Chinook salmon (NMFS 2016a).

No systematic studies of killer whales have been conducted in or around Port Chester. Dahlheim *et al.* (2009) observed transient killer whales within Lynn Canal, Icy Strait, Stephens Passage, Frederick Sound, and upper Chatham Strait. Anecdotal local information suggests that killer whales are rarely seen within the Port Chester area, but may be present more frequently in Nichols Passage and other areas around Gravina Island (L. Bethel, personal communication, June 11, 2020 as cited in the application). In nearby Tongass Narrows, NMFS estimated that one pod of 12 killer whales may be present each month, and two pods of 12 animals during May, June, and July based on killer whales generally just transiting through Tongass Narrows, and not lingering in the project area. Killer whales are observed on average about once every 2 weeks, and abundance increases between May and July (as cited in Freitag 2017 in 85 FR 673). A recent monitoring report for Tongass Narrows reported 10 individuals sighted and 10 Level B harassment takes of killer whales during May 2021 (report available at *https://www.fisheries.noaa.gov/action/incidental-take-authorization-alaska-department-transportation-ferry-berth-improvements*).

Pacific White-Sided Dolphin

Pacific white-sided dolphins are a pelagic species. They are found throughout the temperate North Pacific Ocean, north of the coasts of Japan and Baja California, Mexico (Muto *et al.,* 2018). They are most common between the latitudes of 38° North and 47° North (from California to Washington). The distribution and abundance of Pacific white-sided dolphins may be affected by large-scale oceanographic occurrences, such as El Niño, and by underwater acoustic deterrent devices (NPS 2018a).

Scientific studies and data are lacking relative to the presence or abundance of Pacific white-sided dolphins in or near Nichols Passage. Although they generally prefer deeper and more offshore waters, anecdotal reports suggest that Pacific white-sided dolphins have previously been observed in Nichols Passage, although they have not been observed in Nichols Passage or nearby inter-island waterways for 15 to 20 years. When Pacific white-sided dolphins have been observed, sighting rates were highest in spring and decreased throughout summer and fall (Dahlheim *et al.,* 2009). Most observations of Pacific white-sided dolphins occur off the outer coast or in inland waterways near entrances to the open ocean. According to Muto *et al.* (2018), aerial surveys in 1997 sighted one group of 164 Pacific white-sided dolphins in Dixon entrance to the south of Metlakatla. Surveys in April and May from 1991 to 1993 identified Pacific white-sided dolphins in Revillagigedo Channel, Behm Canal, and Clarence Strait (Dahlheim and Towell 1994). These areas are contiguous with the open ocean waters of Dixon Entrance. These observational data, combined with anecdotal information, indicate that there is a small potential for Pacific white-sided dolphins to occur in the Project area. In nearby Tongass Narrows, NMFS estimated that one group of 92 Pacific white-sided dolphin may occur over a period of 1 year (85 FR 673), based on the median between 20 and 164 Pacific-white sided dolphins (Muto *et al.,* 2018). A recent monitoring report for Tongass Narrows reported no sighting of Pacific white-sided dolphins in May 2021 (report available at *https://www.fisheries.noaa.gov/action/incidental-take-authorization-alaska-department-transportation-ferry-berth-improvements*).

Dall's Porpoise

Dall's porpoises are widely distributed across the entire North Pacific Ocean. They show some migration patterns, inshore and offshore and north and south, based on morphology and type, geography, and seasonality (Muto *et al.,* 2018). They are common in most of the larger, deeper channels in Southeast Alaska and are rare in most narrow waterways, especially those that are relatively shallow and/or with no outlets (Jefferson *et al.,* 2019). In Southeast Alaska, abundance varies with season.

Jefferson *et al.* (2019) recently published a report with survey data spanning from 1991 to 2012 that studied Dall's porpoise density and abundance in Southeast Alaska. They found Dall's porpoise were most abundant in spring, observed with lower numbers in summer, and lowest in fall. Their relative rarity is supported by Jefferson *et al.* (2019) presentation of historical survey data showing very few sightings in the Ketchikan area (north of Metlakatla) and conclusion that Dall's porpoise generally are rare in narrow waterways.

No systematic studies of Dall's porpoise abundance or distribution have occurred in Port Chester or Nichols Passage; however, Dall's porpoises have been consistently observed in Lynn Canal, Stephens Passage, upper Chatham Strait, Frederick Sound, and Clarence Strait (Dahlheim *et al.* 2009). The species is generally found in waters in excess of 183 m (600 ft) deep, which do not occur in Port Chester. Despite generalized water depth preferences, Dall's porpoises may occur in shallower waters. Moran *et al.* (2018) recently mapped Dall's porpoise distributions in bays, shallow water, and nearshore areas of Prince William Sound, habitats not typically utilized by this species. If Dall's porpoises occur in the project area, they will likely be present in March or April, given the strong seasonal patterns observed in nearby areas of Southeast Alaska (Dahlheim *et al.* 2009). Dall's porpoises are seen once a month or less within Port Chester and Nichols Passage in groups of less than 10 animals (L. Bethel, personal communication, June 11, 2020 as cited in the application). In nearby Tongass Narrows, NMFS estimated that 15 Dall's porpoises per month may be present based on local reports of Dall's porpoises typically occuring in groups of 10–15 animals in the area of Ketchikan (Freitag 2017 cited in 85 FR 673). A recent monitoring report for Tongass Narrows reported no sighting of Dall's porpoise in May 2021(report available at *https://www.fisheries.noaa.gov/action/incidental-take-authorization-alaska-department-transportation-ferry-berth-improvements*).

Harbor Porpoise

In the eastern North Pacific Ocean, the Bering Sea and Gulf of Alaska harbor porpoise stocks range from Point Barrow, along the Alaska coast, and the west coast of North America to Point Conception, California. The Southeast Alaska stock ranges from Cape Suckling, Alaska to the northern border of British Columbia. Within the inland waters of Southeast Alaska, harbor porpoises' distribution is clustered with greatest densities observed in the Glacier Bay/Icy Strait region and near Zarembo and Wrangell Islands and the adjacent waters of Sumner Strait (Dahlheim *et al.,* 2015).

There is no official stock abundance associated with the SARs for harbor porpoise. Both aerial and vessel based surveys have been conducted for this species. Aerial surveys of this stock were conducted in June and July 1997 and resulted in an observed abundance estimate of 3,766 harbor porpoise (Hobbs and Waite 2010) and the surveys included a subset of smaller bays and inlets. Correction factors for observer perception bias and porpoise availability at the surface were used to develop an estimated corrected abundance of 11,146 harbor porpoise in the coastal and inside waters of Southeast Alaska (Hobbs and Waite 2010). Vessel based spanning the 22-year study (1991–2012) found the relative abundance of harbor porpoise varied in the inland waters of Southeast Alaska. Abundance estimated in 1991–1993 (N = 1,076; percent CI = 910–1,272) was higher than the estimate obtained for 2006–2007 (N = 604; 95 percent CI = 468–780) but comparable to the estimate for 2010–2012 (N = 975; 95 percent CI = 857–1,109; Dahlheim *et al.,* 2015). These estimates assume the probability of detection directly on the trackline to be unity (g(0) = 1) because estimates of g(0) could not be computed for these surveys. Therefore, these abundance estimates may be biased low to an unknown degree. A range of possible g(0) values for harbor porpoise vessel surveys in other regions is 0.5–0.8 (Barlow 1988, Palka 1995), suggesting that as much as 50 percent of the porpoise can be missed, even by experienced observers.

Further, other vessel based survey data (2010–2012) for the inland waters of Southeast Alaska, calculated abundance estimates for the concentrations of harbor porpoise in the northern and southern regions of the inland waters (Dahlheim *et al.* 2015). The resulting abundance estimates are 398 harbor porpoise (CV = 0.12) in the northern inland waters (including Cross Sound, Icy Strait, Glacier Bay, Lynn Canal, Stephens Passage, and Chatham Strait) and 577 harbor porpoise (CV = 0.14) in the southern inland waters (including Frederick Sound, Sumner Strait, Wrangell and Zarembo Islands, and Clarence Strait as far south as Ketchikan). Because these abundance estimates have not been corrected for g(0), these estimates are likely underestimates.

The vessel based surveys are not complete coverage of harbor porpoise habitat and not corrected for bias and likely underestimate the abundance. Whereas, the aerial survey in 1997, although outdated, had better coverage of the range and is likely to be more of an accurate representation of the stock abundance (11,146 harbor porpoise) in the coastal and inside waters of Southeast Alaska. Although there have been no systematic studies or observations of harbor porpoises specific to Port Chester or Nichols Passage, there is potential for them to occur within the project area. Approximately one to two groups of harbor porpoises are observed each week in group sizes of up to 10 animals around Driest Point, located 5 km (3.1 mi) north of the Project location (L. Bethel, personal communication, June 11, 2020 as cited in the application). Their small overall size, lack of a visible blow, low dorsal fins and overall low profile, and short surfacing time make harbor porpoises difficult to spot (Dahlheim *et al.* 2015), likely reducing identification and reporting of this species, and these estimates therefore may be low. Harbor porpoises prefer shallower waters (Dahlheim *et al.* 2015) and generally are not attracted to areas with elevated levels of vessel activity and noise such as Port Chester. In nearby Tongass Narrrows, NMFS estimated that two groups of five harbor porpoises per month could be present (85 FR 673) based on local reports that harbor porpoises typically occur in groups of one to five animals and pass through in the area of Ketchikan 0–1 times a month (Freitag 2017 as cited in 85 FR 673). A recent monitoring report for Tongass Narrows reported no sighting of harbor porpoise in May 2021 (report available at *https://www.fisheries.noaa.gov/action/incidental-take-authorization-alaska-department-transportation-ferry-berth-improvements*).

Harbor Seal

Harbor seals range from Baja California north along the west coasts of Washington, Oregon, California, British Columbia, and Southeast Alaska; west through the Gulf of Alaska, Prince William Sound, and the Aleutian Islands; and north in the Bering Sea to Cape Newenham and the Pribilof Islands. They haul out on rocks, reefs, beaches, and drifting glacial ice and feed in marine, estuarine, and occasionally fresh waters. Harbor seals are generally non-migratory and, with local movements associated with such factors as tide, weather, season, food availability and reproduction.

The Clarence Strait stock of harbor seals is present within the project area. Harbor seals are commonly sighted in the waters of the inside passages throughout Southeast Alaska. Surveys in 2015 estimated 429 (95% Confidence Interval (CI): 102–1,203) harbor seals on the northwest coast of Annettte Island, between Metlakatla and Walden Point. An additional 90 (95% CI: 18–292) were observed along the southwest coast of Annette Island, between Metlakatla and Tamgas Harbor (NOAA 2019). The Alaska Fisheries Science Center identifies three haulouts in Port Chester (1.5–1.8 mi from Metlakatla) and three additional haulouts north of Driest Point (3+ mi from Metlakatla) (see Figure 4–2 of the application). Abundance estimates for these haulouts are not available, but they are all denoted as having had more than 50 harbor seals at one point in time (NOAA 2020). However, local biologists report only small numbers (fewer than 10) of harbor seals are regularly observed in Port Chester. As many as 10 to 15 harbor seals may utilize Sylburn Harbor, located 6 km (3.7 mi) north of Metlakatla across Driest Point (R. Cook, personal communication, June 5, 2020 as cited in the application), as a haulout location. In nearby Tongass Narrows, NMFS estimated that two groups of three harbor seals would be present every day (85 FR 673) based on based on local reports that harbor seals typically occur in groups of one to three animals and occur every day of the month in the area of Ketchikan (Freitag 2017 as cited in 85 FR 673). A recent monitoring report for Tongass Narrows reported 28 individual sighting of harbor seals with 18 takes by Level B harassment in May 2021 *(report available at https://www.fisheries.noaa.gov/action/incidental-take-authorization-alaska-department-transportation-ferry-berth-improvements*). Harbor seals are known to be curious and may approach novel activity, so it is possible some may enter the project area during pile driving activities.

Steller Sea Lion

Steller sea lions range along the North Pacific Rim from northern Japan to California, with centers of abundance in the Gulf of Alaska and Aleutian Islands (Loughlin *et al.,* 1984).

Of the two Steller sea lion populations in Alaska, the Eastern DPS includes sea lions born on rookeries from California north through Southeast Alaska and the Western DPS includes those animals born on rookeries from Prince William Sound westward, with an eastern boundary set at 144° W (NMFS 2018h). Only Eastern DPS Steller sea lions are considered in this application as Western DPS Steller sea lions are not typically found south of Sumner Strait. Steller sea lions are not known to migrate annually, but individuals may widely disperse outside of the breeding season (late-May to early-July), leading to intermixing of stocks (Jemison *et al.* 2013; Allen and Angliss 2015).

Steller sea lions are common in the inside waters of Southeast Alaska. They are residents of the project vicinity and are common year-round in the action area, moving their haulouts based on seasonal concentrations of prey from exposed rookeries nearer the open Pacific Ocean during the summer to more protected sites in the winter (Alaska Department of Fish & Game (ADF&G) 2018).

Steller sea lions are common within the project area; however, systematic counts or surveys have not been completed in the area directly surrounding Metlakatla. Three haulouts are located within 150 km (93 mi) of the project area (Fritz *et al.* 2016a; see Figure 4–1 of the application); the nearest documented haulout is West Rock, about 45 km (28 mi) south of Metlakatla. West Rock had a count of 703 individuals during a June 2017 survey and 1,101 individuals during a June 2019 survey (Sweeney *et al.* 2017, 2019). Aerial surveys occurred intermittently between 1994 and 2015, and averaged 982 adult Steller sea lions (Fritz *et al.* 2016b). Anecdotal evidence provided by local captains and biologists indicate that 3 to 4 Steller sea lions utilize a buoy as a haulout near the entrance of Port Chester, about 3.2 km (2 mi) from the project area (L. Bethel, personal communication, June 11, 2020 2020 as cited in the application). Steller sea lions are not known to congregate near the cannery in Metlakatla. In nearby Tongass Narrows, NMFS estimated that one group of 10 Steller sea lions could be present each day, and double that rate during herring and salmon runs in March through May and July through September (85 FR 673) based on local reports of Steller sea lions typically occurring in groups of 1–10 animals and every day of the month in the area of Ketchikan (Freitag 2017 as cited in 85 FR 673). A recent monitoring report for Tongass Narrows reported 41 individual sightings of Steller sea lions with 9 takes by Level B harassment in May 2021 (report available at *https://www.fisheries.noaa.gov/action/incidental-take-authorization-alaska-department-transportation-ferry-berth-improvements*). Local observations in Metlakatla suggest that the species assemblages and abundance in Metlakatla are similar to Tongass Narrows.

Marine Mammal Hearing

Hearing is the most important sensory modality for marine mammals underwater, and exposure to anthropogenic sound can have deleterious effects. To appropriately assess the potential effects of exposure to sound, it is necessary to understand the frequency ranges marine mammals are able to hear. Current data indicate that not all marine mammal species have equal hearing capabilities (*e.g.,* Richardson *et al.,* 1995; Wartzok and Ketten, 1999; Au and Hastings, 2008). To reflect this, Southall *et al.* (2007) recommended that marine mammals be divided into functional hearing groups based on directly measured or estimated hearing ranges on the basis of available behavioral response data, audiograms derived using auditory evoked potential techniques, anatomical modeling, and other data. Note that no direct measurements of hearing ability have been successfully completed for mysticetes (*i.e.,* low-frequency cetaceans). Subsequently, NMFS (2018) described generalized hearing ranges for these marine mammal hearing groups. Generalized hearing ranges were chosen based on the approximately 65 decibel (dB) threshold from the normalized composite audiograms, with the exception for lower limits for low-frequency cetaceans where the lower bound was deemed to be biologically implausible and the lower bound from Southall *et al.* (2007) retained. Marine mammal hearing groups and their associated hearing ranges are provided in Table 3.

TABLE 3—MARINE MAMMAL HEARING GROUPS

[NMFS, 2018]

Hearing group	Generalized hearing range *
Low-frequency (LF) cetaceans (baleen whales)	7 Hz to 35 kHz.
Mid-frequency (MF) cetaceans (dolphins, toothed whales, beaked whales, bottlenose whales)	150 Hz to 160 kHz.
High-frequency (HF) cetaceans (true porpoises, *Kogia,* river dolphins, cephalorhynchid, *Lagenorhynchus cruciger* & *L. australis*).	275 Hz to 160 kHz.
Phocid pinnipeds (PW) (underwater) (true seals)	50 Hz to 86 kHz.
Otariid pinnipeds (OW) (underwater) (sea lions and fur seals)	60 Hz to 39 kHz.

* Represents the generalized hearing range for the entire group as a composite (*i.e.,* all species within the group), where individual species' hearing ranges are typically not as broad. Generalized hearing range chosen based on ~65 dB threshold from normalized composite audiogram, with the exception for lower limits for LF cetaceans (Southall *et al.* 2007) and PW pinniped (approximation).

The pinniped functional hearing group was modified from Southall *et al.* (2007) on the basis of data indicating that phocid species have consistently demonstrated an extended frequency range of hearing compared to otariids, especially in the higher frequency range (Hemilä *et al.,* 2006; Kastelein *et al.,* 2009; Reichmuth and Holt, 2013).

For more detail concerning these groups and associated frequency ranges, please see NMFS (2018) for a review of available information. Eight marine mammal species (six cetacean and two pinniped (one otariid and one phocid) species) have the reasonable potential to occur during the proposed activities. Please refer to Table 2. Of the cetacean species that may be present, two are classified as low-frequency cetaceans (*i.e.,* all mysticete species), two are classified as mid-frequency cetaceans (*i.e.,* all delphinid species), and two are classified as high-frequency cetaceans (*i.e.,* porpoise).

Potential Effects of Specified Activities on Marine Mammals and Their Habitat

This section includes a summary and discussion of the ways that components of the specified activity may impact marine mammals and their habitat. The Estimated Take section later in this document includes a quantitative analysis of the number of individuals that are expected to be taken by this activity. The Negligible Impact Analysis and Determination section considers the content of this section, the Estimated Take section, and the Proposed Mitigation section, to draw conclusions regarding the likely impacts of these activities on the reproductive success or survivorship of individuals and how those impacts on individuals are likely to impact marine mammal species or stocks.

Acoustic effects on marine mammals during the specified activity can occur from vibratory and impact pile driving as well as during DTH of the piles. The effects of underwater noise from the AKDOT&PF's proposed activities have the potential to result in Level B behavioral harassment of marine mammals in the vicinity of the action area.

Description of Sound Sources

This section contains a brief technical background on sound, on the characteristics of certain sound types, and on metrics used in this proposal inasmuch as the information is relevant to the specified activity and to a discussion of the potential effects of the specified activity on marine mammals found later in this document. For general information on sound and its interaction with the marine environment, please see, *e.g.,* Au and Hastings (2008); Richardson *et al.* (1995); Urick (1983).

Sound travels in waves, the basic components of which are frequency, wavelength, velocity, and amplitude. Frequency is the number of pressure waves that pass by a reference point per unit of time and is measured in hertz (Hz) or cycles per second. Wavelength is the distance between two peaks or corresponding points of a sound wave (length of one cycle). Higher frequency sounds have shorter wavelengths than lower frequency sounds, and typically attenuate (decrease) more rapidly, except in certain cases in shallower water. Amplitude is the height of the sound pressure wave or the ''loudness'' of a sound and is typically described using the relative unit of the decibel (dB). A sound pressure level (SPL) in dB is described as the ratio between a measured pressure and a reference pressure (for underwater sound, this is 1 microPascal (μPa)), and is a logarithmic unit that accounts for large variations in amplitude; therefore, a relatively small change in dB corresponds to large changes in sound pressure. The source level (SL) represents the SPL referenced at a distance of 1 m from the source (referenced to 1 μPa), while the received level is the SPL at the listener's position (referenced to 1 μPa).

Root mean square (rms) is the quadratic mean sound pressure over the duration of an impulse. Root mean square is calculated by squaring all of the sound amplitudes, averaging the squares, and then taking the square root of the average (Urick, 1983). Root mean square accounts for both positive and negative values; squaring the pressures makes all values positive so that they may be accounted for in the summation of pressure levels (Hastings and Popper, 2005). This measurement is often used in the context of discussing behavioral effects, in part because behavioral effects, which often result from auditory cues, may be better expressed through averaged units than by peak pressures.

Sound exposure level (SEL; represented as dB re 1 μPa^2-s) represents the total energy in a stated frequency band over a stated time interval or event, and considers both intensity and duration of exposure. The per-pulse SEL is calculated over the time window containing the entire pulse (*i.e.,* 100 percent of the acoustic energy). SEL is a cumulative metric; it can be accumulated over a single pulse, or calculated over periods containing multiple pulses. Cumulative SEL represents the total energy accumulated by a receiver over a defined time window or during an event. Peak sound pressure (also referred to as zero-to-peak sound pressure or 0-pk) is the maximum instantaneous sound pressure measurable in the water at a specified distance from the source, and is represented in the same units as the rms sound pressure.

When underwater objects vibrate or activity occurs, sound-pressure waves are created. These waves alternately compress and decompress the water as the sound wave travels. Underwater sound waves radiate in a manner similar to ripples on the surface of a pond and may be either directed in a beam or beams or may radiate in all directions

(omnidirectional sources), as is the case for sound produced by the pile driving activity considered here. The compressions and decompressions associated with sound waves are detected as changes in pressure by aquatic life and man-made sound receptors such as hydrophones.

Even in the absence of sound from the specified activity, the underwater environment is typically loud due to ambient sound, which is defined as environmental background sound levels lacking a single source or point (Richardson *et al.,* 1995). The sound level of a region is defined by the total acoustical energy being generated by known and unknown sources. These sources may include physical (*e.g.,* wind and waves, earthquakes, ice, atmospheric sound), biological (*e.g.,* sounds produced by marine mammals, fish, and invertebrates), and anthropogenic (*e.g.,* vessels, dredging, construction) sound. A number of sources contribute to ambient sound, including wind and waves, which are a main source of naturally occurring ambient sound for frequencies between 200 Hz and 50 kilohertz (kHz) (Mitson, 1995). In general, ambient sound levels tend to increase with increasing wind speed and wave height. Precipitation can become an important component of total sound at frequencies above 500 Hz, and possibly down to 100 Hz during quiet times. Marine mammals can contribute significantly to ambient sound levels, as can some fish and snapping shrimp. The frequency band for biological contributions is from approximately 12 Hz to over 100 kHz. Sources of ambient sound related to human activity include transportation (surface vessels), dredging and construction, oil and gas drilling and production, geophysical surveys, sonar, and explosions. Vessel noise typically dominates the total ambient sound for frequencies between 20 and 300 Hz. In general, the frequencies of anthropogenic sounds are below 1 kHz and, if higher frequency sound levels are created, they attenuate rapidly.

The sum of the various natural and anthropogenic sound sources that comprise ambient sound at any given location and time depends not only on the source levels (as determined by current weather conditions and levels of biological and human activity) but also on the ability of sound to propagate through the environment. In turn, sound propagation is dependent on the spatially and temporally varying properties of the water column and sea floor, and is frequency-dependent. As a result of the dependence on a large number of varying factors, ambient sound levels can be expected to vary widely over both coarse and fine spatial and temporal scales. Sound levels at a given frequency and location can vary by 10–20 decibels (dB) from day to day (Richardson *et al.,* 1995). The result is that, depending on the source type and its intensity, sound from the specified activity may be a negligible addition to the local environment or could form a distinctive signal that may affect marine mammals.

Sounds are often considered to fall into one of two general types: Pulsed and non-pulsed (defined in the following). The distinction between these two sound types is important because they have differing potential to cause physical effects, particularly with regard to hearing (*e.g.,* Ward, 1997 in Southall *et al.,* 2007). Please see Southall *et al.* (2007) for an in-depth discussion of these concepts. The distinction between these two sound types is not always obvious, as certain signals share properties of both pulsed and non-pulsed sounds. A signal near a source could be categorized as a pulse, but due to propagation effects as it moves farther from the source, the signal duration becomes longer (*e.g.,* Greene and Richardson, 1988).

Pulsed sound sources (*e.g.,* airguns, explosions, gunshots, sonic booms, impact pile driving) produce signals that are brief (typically considered to be less than one second), broadband, atonal transients (ANSI, 1986, 2005; Harris, 1998; NIOSH, 1998; ISO, 2003) and occur either as isolated events or repeated in some succession. Pulsed sounds are all characterized by a relatively rapid rise from ambient pressure to a maximal pressure value followed by a rapid decay period that may include a period of diminishing, oscillating maximal and minimal pressures, and generally have an increased capacity to induce physical injury as compared with sounds that lack these features.

Non-pulsed sounds can be tonal, narrowband, or broadband, brief or prolonged, and may be either continuous or intermittent (ANSI, 1995; NIOSH, 1998). Some of these non-pulsed sounds can be transient signals of short duration but without the essential properties of pulses (*e.g.,* rapid rise time). Examples of non-pulsed sounds include those produced by vessels, aircraft, machinery operations such as drilling or dredging, vibratory pile driving, and active sonar systems. The duration of such sounds, as received at a distance, can be greatly extended in a highly reverberant environment.

The impulsive sound generated by impact hammers is characterized by rapid rise times and high peak levels. Vibratory hammers produce non-impulsive, continuous noise at levels significantly lower than those produced by impact hammers. Rise time is slower, reducing the probability and severity of injury, and sound energy is distributed over a greater amount of time (*e.g.,* Nedwell and Edwards, 2002; Carlson *et al.,* 2005). DTH is believed to produce sound with both impulsive and continuous characteristics (*e.g.,* Denes et al., 2016).

Acoustic Effects on Marine Mammals

We previously provided general background information on marine mammal hearing (see Description of Marine Mammals in the Area of Specified Activities).

Here, we discuss the potential effects of sound on marine mammals. Anthropogenic sounds cover a broad range of frequencies and sound levels and can have a range of highly variable impacts on marine life, from none or minor to potentially severe responses, depending on received levels, duration of exposure, behavioral context, and various other factors. The potential effects of underwater sound from active acoustic sources can potentially result in one or more of the following: Temporary or permanent hearing impairment, non-auditory physical or physiological effects, behavioral disturbance, stress, and masking (Richardson *et al.,* 1995; Gordon *et al.,* 2004; Nowacek *et al.,* 2007; Southall *et al.,* 2007; Götz *et al.,* 2009). The degree of effect is intrinsically related to the signal characteristics, received level, distance from the source, and duration of the sound exposure. In general, sudden, high level sounds can cause hearing loss, as can longer exposures to lower level sounds. Temporary or permanent loss of hearing will occur almost exclusively for noise within an animal's hearing range. We first describe specific manifestations of acoustic effects before providing discussion specific to pile driving and removal activities.

Richardson *et al.* (1995) described zones of increasing intensity of effect that might be expected to occur, in relation to distance from a source and assuming that the signal is within an animal's hearing range. First is the area within which the acoustic signal would be audible (potentially perceived) to the animal but not strong enough to elicit any overt behavioral or physiological response. The next zone corresponds with the area where the signal is audible to the animal and of sufficient intensity

to elicit behavioral or physiological responsiveness. Third is a zone within which, for signals of high intensity, the received level is sufficient to potentially cause discomfort or tissue damage to auditory or other systems. Overlaying these zones to a certain extent is the area within which masking (*i.e.,* when a sound interferes with or masks the ability of an animal to detect a signal of interest that is above the absolute hearing threshold) may occur; the masking zone may be highly variable in size.

We describe the more severe effects (*i.e.,* certain non-auditory physical or physiological effects) only briefly as we do not expect that there is a reasonable likelihood that pile driving may result in such effects (see below for further discussion). Potential effects from explosive impulsive sound sources can range in severity from effects such as behavioral disturbance or tactile perception to physical discomfort, slight injury of the internal organs and the auditory system, or mortality (Yelverton *et al.,* 1973). Non-auditory physiological effects or injuries that theoretically might occur in marine mammals exposed to high level underwater sound or as a secondary effect of extreme behavioral reactions (*e.g.,* change in dive profile as a result of an avoidance reaction) caused by exposure to sound include neurological effects, bubble formation, resonance effects, and other types of organ or tissue damage (Cox *et al.,* 2006; Southall *et al.,* 2007; Zimmer and Tyack, 2007; Tal *et al.,* 2015). The construction activities considered here do not involve the use of devices such as explosives or mid-frequency tactical sonar that are associated with these types of effects.

Threshold Shift—Note that, in the following discussion, we refer in many cases to a review article concerning studies of noise-induced hearing loss conducted from 1996–2015 (*i.e.,* Finneran, 2015). For study-specific citations, please see that work. Marine mammals exposed to high-intensity sound, or to lower-intensity sound for prolonged periods, can experience hearing threshold shift (TS), which is the loss of hearing sensitivity at certain frequency ranges (Finneran, 2015). TS can be permanent (permanent threshold shift (PTS)), in which case the loss of hearing sensitivity is not fully recoverable, or temporary (TTS), in which case the animal's hearing threshold would recover over time (Southall *et al.,* 2007). Repeated sound exposure that leads to TTS could cause PTS. In severe cases of PTS, there can be total or partial deafness, while in most cases the animal has an impaired ability to hear sounds in specific frequency ranges (Kryter, 1985).

When PTS occurs, there is physical damage to the sound receptors in the ear (*i.e.,* tissue damage), whereas TTS represents primarily tissue fatigue and is reversible (Southall *et al.,* 2007). In addition, other investigators have suggested that TTS is within the normal bounds of physiological variability and tolerance and does not represent physical injury (*e.g.,* Ward, 1997). Therefore, NMFS does not consider TTS to constitute auditory injury.

Relationships between TTS and PTS thresholds have not been studied in marine mammals, and there is no PTS data for cetaceans, but such relationships are assumed to be similar to those in humans and other terrestrial mammals. PTS typically occurs at exposure levels at least several decibels above (a 40-dB threshold shift approximates PTS onset; *e.g.,* Kryter *et al.,* 1966; Miller, 1974) that inducing mild TTS (a 6-dB threshold shift approximates TTS onset; *e.g.,* Southall *et al.* 2007). Based on data from terrestrial mammals, a precautionary assumption is that the PTS thresholds for impulse sounds (such as impact pile driving pulses as received close to the source) are at least 6 dB higher than the TTS threshold on a peak-pressure basis and PTS cumulative sound exposure level thresholds are 15 to 20 dB higher than TTS cumulative sound exposure level thresholds (Southall *et al.,* 2007). Given the higher level of sound or longer exposure duration necessary to cause PTS as compared with TTS, it is considerably less likely that PTS could occur.

TTS is the mildest form of hearing impairment that can occur during exposure to sound (Kryter, 1985). While experiencing TTS, the hearing threshold rises, and a sound must be at a higher level in order to be heard. In terrestrial and marine mammals, TTS can last from minutes or hours to days (in cases of strong TTS). In many cases, hearing sensitivity recovers rapidly after exposure to the sound ends. Few data on sound levels and durations necessary to elicit mild TTS have been obtained for marine mammals.

Marine mammal hearing plays a critical role in communication with conspecifics, and interpretation of environmental cues for purposes such as predator avoidance and prey capture. Depending on the degree (elevation of threshold in dB), duration (*i.e.,* recovery time), and frequency range of TTS, and the context in which it is experienced, TTS can have effects on marine mammals ranging from discountable to serious. For example, a marine mammal may be able to readily compensate for a brief, relatively small amount of TTS in a non-critical frequency range that occurs during a time where ambient noise is lower and there are not as many competing sounds present. Alternatively, a larger amount and longer duration of TTS sustained during time when communication is critical for successful mother/calf interactions could have more serious impacts.

Currently, TTS data only exist for four species of cetaceans (bottlenose dolphin (*Tursiops truncatus*), beluga whale (*Delphinapterus leucas*), harbor porpoise, and Yangtze finless porpoise (*Neophocoena asiaeorientalis*)) and three species of pinnipeds (northern elephant seal, harbor seal, and California sea lion) exposed to a limited number of sound sources (*i.e.,* mostly tones and octave-band noise) in laboratory settings (Finneran, 2015). TTS was not observed in trained spotted (*Phoca largha*) and ringed (*Pusa hispida*) seals exposed to impulsive noise at levels matching previous predictions of TTS onset (Reichmuth *et al.,* 2016). In general, harbor seals and harbor porpoises have a lower TTS onset than other measured pinniped or cetacean species (Finneran, 2015). Additionally, the existing marine mammal TTS data come from a limited number of individuals within these species. There are no data available on noise-induced hearing loss for mysticetes. For summaries of data on TTS in marine mammals or for further discussion of TTS onset thresholds, please see Southall *et al.* (2007), Finneran and Jenkins (2012), Finneran (2015), and NMFS (2018).

Behavioral Effects—Behavioral disturbance may include a variety of effects, including subtle changes in behavior (*e.g.,* minor or brief avoidance of an area or changes in vocalizations), more conspicuous changes in similar behavioral activities, and more sustained and/or potentially severe reactions, such as displacement from or abandonment of high-quality habitat. Behavioral responses to sound are highly variable and context-specific and any reactions depend on numerous intrinsic and extrinsic factors (*e.g.,* species, state of maturity, experience, current activity, reproductive state, auditory sensitivity, time of day), as well as the interplay between factors (*e.g.,* Richardson *et al.,* 1995; Wartzok *et al.,* 2003; Southall *et al.,* 2007; Weilgart, 2007; Archer *et al.,* 2010). Behavioral reactions can vary not only among individuals but also within an individual, depending on previous experience with a sound source, context, and numerous other factors

(Ellison *et al.,* 2012), and can vary depending on characteristics associated with the sound source (*e.g.,* whether it is moving or stationary, number of sources, distance from the source). Please see Appendices B–C of Southall *et al.* (2007) for a review of studies involving marine mammal behavioral responses to sound.

Habituation can occur when an animal's response to a stimulus wanes with repeated exposure, usually in the absence of unpleasant associated events (Wartzok *et al.,* 2003). Animals are most likely to habituate to sounds that are predictable and unvarying. It is important to note that habituation is appropriately considered as a ''progressive reduction in response to stimuli that are perceived as neither aversive nor beneficial,'' rather than as, more generally, moderation in response to human disturbance (Bejder *et al.,* 2009). The opposite process is sensitization, when an unpleasant experience leads to subsequent responses, often in the form of avoidance, at a lower level of exposure. As noted, behavioral state may affect the type of response. For example, animals that are resting may show greater behavioral change in response to disturbing sound levels than animals that are highly motivated to remain in an area for feeding (Richardson *et al.,* 1995; NRC, 2003; Wartzok *et al.,* 2003). Controlled experiments with captive marine mammals have showed pronounced behavioral reactions, including avoidance of loud sound sources (Ridgway *et al.,* 1997; Finneran *et al.,* 2003). Observed responses of wild marine mammals to loud pulsed sound sources (typically airguns or acoustic harassment devices) have been varied but often consist of avoidance behavior or other behavioral changes suggesting discomfort (Morton and Symonds, 2002; see also Richardson *et al.,* 1995; Nowacek *et al.,* 2007). However, many delphinids approach low-frequency airgun source vessels with no apparent discomfort or obvious behavioral change (*e.g.,* Barkaszi *et al.,* 2012), indicating the importance of frequency output in relation to the species' hearing sensitivity.

Available studies show wide variation in response to underwater sound; therefore, it is difficult to predict specifically how any given sound in a particular instance might affect marine mammals perceiving the signal. If a marine mammal does react briefly to an underwater sound by changing its behavior or moving a small distance, the impacts of the change are unlikely to be significant to the individual, let alone the stock or population. However, if a sound source displaces marine mammals from an important feeding or breeding area for a prolonged period, impacts on individuals and populations could be significant (*e.g.,* Lusseau and Bejder, 2007; Weilgart, 2007; NRC, 2005). However, there are broad categories of potential response, which we describe in greater detail here, that include alteration of dive behavior, alteration of foraging behavior, effects to breathing, interference with or alteration of vocalization, avoidance, and flight.

Changes in dive behavior can vary widely and may consist of increased or decreased dive times and surface intervals as well as changes in the rates of ascent and descent during a dive (*e.g.,* Frankel and Clark, 2000; Costa *et al.,* 2003; Ng and Leung, 2003; Nowacek *et al.;* 2004; Goldbogen *et al.,* 2013a, 2013b). Variations in dive behavior may reflect interruptions in biologically significant activities (*e.g.,* foraging) or they may be of little biological significance. The impact of an alteration to dive behavior resulting from an acoustic exposure depends on what the animal is doing at the time of the exposure and the type and magnitude of the response.

Disruption of feeding behavior can be difficult to correlate with anthropogenic sound exposure, so it is usually inferred by observed displacement from known foraging areas, the appearance of secondary indicators (*e.g.,* bubble nets or sediment plumes), or changes in dive behavior. As for other types of behavioral response, the frequency, duration, and temporal pattern of signal presentation, as well as differences in species sensitivity, are likely contributing factors to differences in response in any given circumstance (*e.g.,* Croll *et al.,* 2001; Nowacek *et al.;* 2004; Madsen *et al.,* 2006; Yazvenko *et al.,* 2007). A determination of whether foraging disruptions incur fitness consequences would require information on or estimates of the energetic requirements of the affected individuals and the relationship between prey availability, foraging effort and success, and the life history stage of the animal.

Variations in respiration naturally vary with different behaviors and alterations to breathing rate as a function of acoustic exposure can be expected to co-occur with other behavioral reactions, such as a flight response or an alteration in diving. However, respiration rates in and of themselves may be representative of annoyance or an acute stress response. Various studies have shown that respiration rates may either be unaffected or could increase, depending on the species and signal characteristics, again highlighting the importance in understanding species differences in the tolerance of underwater noise when determining the potential for impacts resulting from anthropogenic sound exposure (*e.g.,* Kastelein *et al.,* 2001, 2005, 2006; Gailey *et al.,* 2007; Gailey *et al.,* 2016).

Marine mammals vocalize for different purposes and across multiple modes, such as whistling, echolocation click production, calling, and singing. Changes in vocalization behavior in response to anthropogenic noise can occur for any of these modes and may result from a need to compete with an increase in background noise or may reflect increased vigilance or a startle response. For example, in the presence of potentially masking signals, humpback whales and killer whales have been observed to increase the length of their songs (Miller *et al.,* 2000; Fristrup *et al.,* 2003; Foote *et al.,* 2004), while right whales have been observed to shift the frequency content of their calls upward while reducing the rate of calling in areas of increased anthropogenic noise (Parks *et al.,* 2007). In some cases, animals may cease sound production during production of aversive signals (Bowles *et al.,* 1994).

Avoidance is the displacement of an individual from an area or migration path as a result of the presence of a sound or other stressors, and is one of the most obvious manifestations of disturbance in marine mammals (Richardson *et al.,* 1995). For example, gray whales are known to change direction—deflecting from customary migratory paths—in order to avoid noise from airgun surveys (Malme *et al.,* 1984). Avoidance may be short-term, with animals returning to the area once the noise has ceased (*e.g.,* Bowles *et al.,* 1994; Goold, 1996; Stone *et al.,* 2000; Morton and Symonds, 2002; Gailey *et al.,* 2007). Longer-term displacement is possible, however, which may lead to changes in abundance or distribution patterns of the affected species in the affected region if habituation to the presence of the sound does not occur (*e.g.,* Blackwell *et al.,* 2004; Bejder *et al.,* 2006; Teilmann *et al.,* 2006).

A flight response is a dramatic change in normal movement to a directed and rapid movement away from the perceived location of a sound source. The flight response differs from other avoidance responses in the intensity of the response (*e.g.,* directed movement, rate of travel). Relatively little information on flight responses of marine mammals to anthropogenic signals exist, although observations of flight responses to the presence of

predators have occurred (Connor and Heithaus, 1996). The result of a flight response could range from brief, temporary exertion and displacement from the area where the signal provokes flight to, in extreme cases, marine mammal strandings (Evans and England, 2001). However, it should be noted that response to a perceived predator does not necessarily invoke flight (Ford and Reeves, 2008), and whether individuals are solitary or in groups may influence the response.

Behavioral disturbance can also impact marine mammals in more subtle ways. Increased vigilance may result in costs related to diversion of focus and attention (*i.e.,* when a response consists of increased vigilance, it may come at the cost of decreased attention to other critical behaviors such as foraging or resting). These effects have generally not been demonstrated for marine mammals, but studies involving fish and terrestrial animals have shown that increased vigilance may substantially reduce feeding rates (*e.g.,* Beauchamp and Livoreil, 1997; Fritz *et al.,* 2002; Purser and Radford, 2011). In addition, chronic disturbance can cause population declines through reduction of fitness (*e.g.,* decline in body condition) and subsequent reduction in reproductive success, survival, or both (*e.g.,* Harrington and Veitch, 1992; Daan *et al.,* 1996; Bradshaw *et al.,* 1998). However, Ridgway *et al.* (2006) reported that increased vigilance in bottlenose dolphins exposed to sound over a five-day period did not cause any sleep deprivation or stress effects.

Many animals perform vital functions, such as feeding, resting, traveling, and socializing, on a diel cycle (24-hour cycle). Disruption of such functions resulting from reactions to stressors such as sound exposure are more likely to be significant if they last more than one diel cycle or recur on subsequent days (Southall *et al.,* 2007). Consequently, a behavioral response lasting less than one day and not recurring on subsequent days is not considered particularly severe unless it could directly affect reproduction or survival (Southall *et al.,* 2007). Note that there is a difference between multi-day substantive behavioral reactions and multi-day anthropogenic activities. For example, just because an activity lasts for multiple days does not necessarily mean that individual animals are either exposed to activity-related stressors for multiple days or, further, exposed in a manner resulting in sustained multi-day substantive behavioral responses.

Stress Responses—An animal's perception of a threat may be sufficient to trigger stress responses consisting of some combination of behavioral responses, autonomic nervous system responses, neuroendocrine responses, or immune responses (*e.g.,* Seyle, 1950; Moberg, 2000). In many cases, an animal's first and sometimes most economical (in terms of energetic costs) response is behavioral avoidance of the potential stressor. Autonomic nervous system responses to stress typically involve changes in heart rate, blood pressure, and gastrointestinal activity. These responses have a relatively short duration and may or may not have a significant long-term effect on an animal's fitness.

Neuroendocrine stress responses often involve the hypothalamus-pituitary-adrenal system. Virtually all neuroendocrine functions that are affected by stress—including immune competence, reproduction, metabolism, and behavior—are regulated by pituitary hormones. Stress-induced changes in the secretion of pituitary hormones have been implicated in failed reproduction, altered metabolism, reduced immune competence, and behavioral disturbance (*e.g.,* Moberg, 1987; Blecha, 2000). Increases in the circulation of glucocorticoids are also equated with stress (Romano *et al.,* 2004).

The primary distinction between stress (which is adaptive and does not normally place an animal at risk) and ''distress'' is the cost of the response. During a stress response, an animal uses glycogen stores that can be quickly replenished once the stress is alleviated. In such circumstances, the cost of the stress response would not pose serious fitness consequences. However, when an animal does not have sufficient energy reserves to satisfy the energetic costs of a stress response, energy resources must be diverted from other functions. This state of distress will last until the animal replenishes its energetic reserves sufficient to restore normal function.

Relationships between these physiological mechanisms, animal behavior, and the costs of stress responses are well-studied through controlled experiments and for both laboratory and free-ranging animals (*e.g.,* Holberton *et al.,* 1996; Hood *et al.,* 1998; Jessop *et al.,* 2003; Krausman *et al.,* 2004; Lankford *et al.,* 2005). Stress responses due to exposure to anthropogenic sounds or other stressors and their effects on marine mammals have also been reviewed (Fair and Becker, 2000; Romano *et al.,* 2002b) and, more rarely, studied in wild populations (*e.g.,* Romano *et al.,* 2002a). For example, Rolland *et al.* (2012) found that noise reduction from reduced ship traffic in the Bay of Fundy was associated with decreased stress in North Atlantic right whales. These and other studies lead to a reasonable expectation that some marine mammals will experience physiological stress responses upon exposure to acoustic stressors and that it is possible that some of these would be classified as ''distress.'' In addition, any animal experiencing TTS would likely also experience stress responses (NRC, 2003).

Auditory Masking—Sound can disrupt behavior through masking, or interfering with, an animal's ability to detect, recognize, or discriminate between acoustic signals of interest (*e.g.,* those used for intraspecific communication and social interactions, prey detection, predator avoidance, navigation) (Richardson *et al.,* 1995; Erbe *et al.,* 2016). Masking occurs when the receipt of a sound is interfered with by another coincident sound at similar frequencies and at similar or higher intensity, and may occur whether the sound is natural (*e.g.,* snapping shrimp, wind, waves, precipitation) or anthropogenic (*e.g.,* shipping, sonar, seismic exploration) in origin. The ability of a noise source to mask biologically important sounds depends on the characteristics of both the noise source and the signal of interest (*e.g.,* signal-to-noise ratio, temporal variability, direction), in relation to each other and to an animal's hearing abilities (*e.g.,* sensitivity, frequency range, critical ratios, frequency discrimination, directional discrimination, age or TTS hearing loss), and existing ambient noise and propagation conditions.

When the coincident (masking) sound is man-made, it may be considered harassment when disrupting or altering critical behaviors. Further, under certain circumstances, marine mammals experiencing significant masking could also be impaired from maximizing their performance fitness in survival and reproduction. However, it is important to distinguish TTS and PTS, which persist after the sound exposure, from masking, which occurs during the sound exposure. Because masking (without resulting in TS) is not associated with abnormal physiological function, it is not considered a physiological effect, but rather a potential behavioral effect.

The frequency range of the potentially masking sound is important in determining any potential behavioral impacts. For example, low-frequency signals may have less effect on high-frequency echolocation sounds produced by odontocetes but are more likely to affect detection of mysticete

communication calls and other potentially important natural sounds such as those produced by surf and some prey species. The masking of communication signals by anthropogenic noise may be considered as a reduction in the communication space of animals (*e.g.,* Clark *et al.,* 2009) and may result in energetic or other costs as animals change their vocalization behavior (*e.g.,* Miller *et al.,* 2000; Foote *et al.,* 2004; Parks *et al.,* 2007; Di Iorio and Clark, 2009; Holt *et al.,* 2009). Masking can be reduced in situations where the signal and noise come from different directions (Richardson *et al.,* 1995), through amplitude modulation of the signal, or through other compensatory behaviors (Houser and Moore, 2014). Masking can be tested directly in captive species (*e.g.,* Erbe, 2008), but in wild populations it must be either modeled or inferred from evidence of masking compensation. There are few studies addressing real-world masking sounds likely to be experienced by marine mammals in the wild (*e.g.,* Branstetter *et al.,* 2013).

Masking affects both senders and receivers of acoustic signals and can potentially have long-term chronic effects on marine mammals at the population level as well as at the individual level. Low-frequency ambient sound levels have increased by as much as 20 dB (more than three times in terms of SPL) in the world's ocean from pre-industrial periods, with most of the increase from distant commercial shipping (Hildebrand, 2009). All anthropogenic sound sources, but especially chronic and lower-frequency signals (*e.g.,* from vessel traffic), contribute to elevated ambient sound levels, thus intensifying masking.

Potential Effects of the AKDOT&PF's Activity—As described previously, the AKDOT&PF proposes to conduct pile driving, including impact and vibratory driving (inclusive of DTH). The effects of pile driving on marine mammals are dependent on several factors, including the size, type, and depth of the animal; the depth, intensity, and duration of the pile driving sound; the depth of the water column; the substrate of the habitat; the standoff distance between the pile and the animal; and the sound propagation properties of the environment. With both types, it is likely that the pile driving could result in temporary, short-term changes in an animal's typical behavioral patterns and/or avoidance of the affected area. These behavioral changes may include (Richardson *et al.,* 1995): Changing durations of surfacing and dives, number of blows per surfacing, or moving direction and/or speed; reduced/increased vocal activities; changing/cessation of certain behavioral activities (such as socializing or feeding); visible startle response or aggressive behavior (such as tail/fluke slapping or jaw clapping); avoidance of areas where sound sources are located; and/or flight responses.

The biological significance of many of these behavioral disturbances is difficult to predict, even if the detected disturbances appear minor, and the consequences of behavioral modification could be expected to be biologically significant if the change affects growth, survival, or reproduction. However, significant behavioral modifications that could lead to effects on growth, survival, or reproduction, such as drastic changes in diving/surfacing patterns or significant habitat abandonment are extremely unlikely to result from this activity or in this area (*i.e.,* shallow waters in modified industrial areas).

Whether impact or vibratory driving, sound sources would be active for relatively short durations, with little potential for masking. Also, the frequencies output by pile driving activity are lower than those used by most species expected to be regularly present for communication or echolocation. We expect insignificant impacts from masking, and any masking event that could possibly rise to Level B harassment under the MMPA would occur concurrently within the zones of behavioral harassment already estimated for vibratory and impact pile driving, and which have already been taken into account in the exposure analysis.

Anticipated Effects on Marine Mammal Habitat

The proposed activities would not result in permanent impacts to habitats used directly by marine mammals. The project would occur within the same footprint as existing marine infrastructure. The nearshore and intertidal habitat where the project would occur is an area of relatively high marine vessel traffic. Most marine mammals do not generally use the area within the footprint of the project area. The proposed activities may have potential short-term impacts to food sources such as forage fish. The proposed activities could also affect acoustic habitat (see masking discussion above), but meaningful impacts are unlikely. There are no known foraging hotspots, or other ocean bottom structures of significant biological importance to marine mammals present in the marine waters in the vicinity of the project area. Therefore, the main impact issue associated with the proposed activity would be temporarily elevated sound levels and the associated direct effects on marine mammals, as discussed previously. The most likely impact to marine mammal habitat occurs from pile driving effects on likely marine mammal prey (*i.e.,* fish) near where the piles are installed. Impacts to the immediate substrate during installation and removal of piles are anticipated, but these would be limited to minor, temporary suspension of sediments, which could impact water quality and visibility for a short amount of time, but which would not be expected to have any effects on individual marine mammals or the prey for marine mammals. Impacts to substrate are therefore not discussed further.

Effects to Prey—Sound may affect marine mammals through impacts on the abundance, behavior, or distribution of prey species (*e.g.,* crustaceans, cephalopods, fish, zooplankton). Marine mammal prey varies by species, season, and location and, for some, is not well documented. Here, we describe studies regarding the effects of noise on known marine mammal prey.

Fish utilize the soundscape and components of sound in their environment to perform important functions such as foraging, predator avoidance, mating, and spawning (*e.g.,* Zelick *et al.,* 1999; Fay, 2009). Depending on their hearing anatomy and peripheral sensory structures, which vary among species, fishes hear sounds using pressure and particle motion sensitivity capabilities and detect the motion of surrounding water (Fay *et al.,* 2008). The potential effects of noise on fishes depends on the overlapping frequency range, distance from the sound source, water depth of exposure, and species-specific hearing sensitivity, anatomy, and physiology. Key impacts to fishes may include behavioral responses, hearing damage, barotrauma (pressure-related injuries), and mortality.

Fish react to sounds which are especially strong and/or intermittent low-frequency sounds, and behavioral responses such as flight or avoidance are the most likely effects. Short duration, sharp sounds can cause overt or subtle changes in fish behavior and local distribution. The reaction of fish to noise depends on the physiological state of the fish, past exposures, motivation (*e.g.,* feeding, spawning, migration), and other environmental factors. Hastings and Popper (2005) identified several studies that suggest fish may relocate to avoid certain areas of sound energy.

Additional studies have documented effects of pile driving on fish, although several are based on studies in support of large, multiyear bridge construction projects (*e.g.,* Scholik and Yan, 2001, 2002; Popper and Hastings, 2009). Several studies have demonstrated that impulse sounds might affect the distribution and behavior of some fishes, potentially impacting foraging opportunities or increasing energetic costs (*e.g.,* Fewtrell and McCauley, 2012; Pearson *et al.,* 1992; Skalski *et al.,* 1992; Santulli *et al.,* 1999; Paxton *et al.,* 2017). However, some studies have shown no or slight reaction to impulse sounds (*e.g.,* Pena *et al.,* 2013; Wardle *et al.,* 2001; Jorgenson and Gyselman, 2009; Cott *et al.,* 2012). More commonly, though, the impacts of noise on fish are temporary.

Exposure to loud sounds with SPLs of sufficient strength have been known to cause injury to fish and fish mortality. However, in most fish species, hair cells in the ear continuously regenerate and loss of auditory function likely is restored when damaged cells are replaced with new cells. Halvorsen *et al.* (2012a) showed that a TTS of 4–6 dB was recoverable within 24 hours for one species. Impacts would be most severe when the individual fish is close to the source and when the duration of exposure is long. Injury caused by barotrauma can range from slight to severe and can cause death, and is most likely for fish with swim bladders. Barotrauma injuries have been documented during controlled exposure to impact pile driving (Halvorsen *et al.,* 2012b; Casper *et al.,* 2013).

The most likely impact to fish from pile driving activities at the project areas would be temporary behavioral avoidance of the area. The duration of fish avoidance of an area after pile driving stops is unknown, but a rapid return to normal recruitment, distribution and behavior is anticipated. In general, impacts to marine mammal prey species are expected to be minor and temporary due to the expected short daily duration of individual pile driving events and the relatively small areas being affected.

The following essential fish habitat (EFH) species may occur in the project area during at least one phase of their lifestage: Chum Salmon (*Oncorhynchus keta*), Pink Salmon (*O. gorbuscha*), Coho Salmon (*O. kisutch*), Sockeye Salmon (*O. nerka*), and Chinook Salmon (*O. tshawytscha*). Three creeks flowing into Port Chester are known to contain salmonids: Hemlock Creek, Trout Lake Creek, and Melanson Lake outflow (Giefer and Blossom 2020); however, adverse effects on EFH in this area are not expected.

The area impacted by the project is relatively small compared to the available habitat and does not include habitat of particular importance relative to available habitat overall. Any behavioral avoidance by fish of the disturbed area would still leave significantly large areas of fish and marine mammal foraging habitat in the nearby vicinity. As described in the preceding, the potential for the AKDOT&PF's construction to affect the availability of prey to marine mammals or to meaningfully impact the quality of physical or acoustic habitat is considered to be insignificant. Effects to habitat will not be discussed further in this document.

Estimated Take

This section provides an estimate of the number of incidental takes proposed for authorization through this IHA, which will inform both NMFS' consideration of ''small numbers'' and the negligible impact determination.

Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines ''harassment'' as any act of pursuit, torment, or annoyance, which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (Level B harassment).

Take of marine mammals incidental to the AKDOT&PF's pile driving and removal activities (as well as during DTH) could occur as a result of Level B harassment only. Below we describe how the potential take is estimated. As described previously, no mortality is anticipated or proposed to be authorized for this activity. Below we describe how the take is estimated.

Generally speaking, we estimate take by considering: (1) Acoustic thresholds above which NMFS believes the best available science indicates marine mammals will be behaviorally harassed or incur some degree of permanent hearing impairment; (2) the area or volume of water that will be ensonified above these levels in a day; (3) the density or occurrence of marine mammals within these ensonified areas; and, (4) and the number of days of activities. We note that while these basic factors can contribute to a basic calculation to provide an initial prediction of takes, additional information that can qualitatively inform take estimates is also sometimes available (*e.g.,* previous monitoring results or average group size). Below, we describe the factors considered here in more detail and present the proposed take estimate.

Acoustic Thresholds

Using the best available science, NMFS has developed acoustic thresholds that identify the received level of underwater sound above which exposed marine mammals would be reasonably expected to be behaviorally harassed (equated to Level B harassment) or to incur PTS of some degree (equated to Level A harassment).

Level B Harassment—Though significantly driven by received level, the onset of behavioral disturbance from anthropogenic noise exposure is also informed to varying degrees by other factors related to the source (*e.g.,* frequency, predictability, duty cycle), the environment (*e.g.,* bathymetry), and the receiving animals (hearing, motivation, experience, demography, behavioral context) and can be difficult to predict (Southall *et al.,* 2007, Ellison *et al.,* 2012). Based on what the available science indicates and the practical need to use a threshold based on a factor that is both predictable and measurable for most activities, NMFS uses a generalized acoustic threshold based on received level to estimate the onset of behavioral harassment. NMFS predicts that marine mammals are likely to be behaviorally harassed in a manner we consider Level B harassment when exposed to underwater anthropogenic noise above received levels of 120 dB re 1 μPa (rms) for continuous (*e.g.,* vibratory pile driving and DTH) and above 160 dB re 1 μPa (rms) for impulsive sources (*e.g.,* impact pile driving). The AKDOT&PF's proposed activity includes the use of continuous (vibratory pile driving, DTH) and impulsive (impact pile driving) sources, and therefore the 120 and 160 dB re 1 μPa (rms) are applicable.

Level A harassment—NMFS' Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing (Version 2.0) (Technical Guidance, 2018) identifies dual criteria to assess auditory injury (Level A harassment) to five different marine mammal groups (based on hearing sensitivity) as a result of exposure to noise. The technical guidance identifies the received levels, or thresholds, above which individual marine mammals are predicted to experience changes in their hearing sensitivity for all underwater anthropogenic sound sources, and reflects the best available science on the

potential for noise to affect auditory sensitivity by:

- Dividing sound sources into two groups (*i.e.,* impulsive and non-impulsive) based on their potential to affect hearing sensitivity;
- Choosing metrics that best address the impacts of noise on hearing sensitivity, *i.e.,* sound pressure level (peak SPL) and sound exposure level (SEL) (also accounts for duration of exposure); and
- Dividing marine mammals into hearing groups and developing auditory weighting functions based on the science supporting that not all marine mammals hear and use sound in the same manner.

These thresholds were developed by compiling and synthesizing the best available science, and are provided in Table 4 below. The references, analysis, and methodology used in the development of the thresholds are described in NMFS 2018 Technical Guidance, which may be accessed at *https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance.*

DTH pile installation includes drilling (non-impulsive sound) and hammering (impulsive sound) to penetrate rocky substrates (Denes *et al.* 2016; Denes *et al.* 2019; Reyff and Heyvaert 2019). DTH pile installation was initially thought be a primarily non-impulsive noise source. However, Denes *et al.* (2019) concluded from a study conducted in Virginia, nearby the location for this project, that DTH should be characterized as impulsive based on Southall *et al.* (2007), who stated that signals with a >3 dB difference in sound pressure level in a 0.035-second window compared to a 1-second window can be considered impulsive. Therefore, DTH pile installation is treated as both an impulsive and non-impulsive noise source. In order to evaluate Level A harassment, DTH pile installation activities are evaluated according to the impulsive criteria and using 160 dB rms. Level B harassment isopleths are determined by applying non-impulsive criteria and using the 120 dB rms threshold which is also used for vibratory driving. This approach ensures that the largest ranges to effect for both Level A and Level B harassment are accounted for in the take estimation process.

TABLE 4—THRESHOLDS IDENTIFYING THE ONSET OF PERMANENT THRESHOLD SHIFT

[Auditory injury]

Hearing group	PTS onset acoustic thresholds * (received level)	
	Impulsive	Non-impulsive
Low-Frequency (LF) Cetaceans	*Cell 1:* $L_{pk,flat}$: 219 dB; $L_{E,LF,24h}$: 183 dB	*Cell 2:* $L_{E,LF,24h}$: 199 dB.
Mid-Frequency (MF) Cetaceans	*Cell 3:* $L_{pk,flat}$: 230 dB; $L_{E,MF,24h}$: 185 dB	*Cell 4:* $L_{E,MF,24h}$: 198 dB.
High-Frequency (HF) Cetaceans	*Cell 5:* $L_{pk,flat}$: 202 dB; $L_{E,HF,24h}$: 155 dB	*Cell 6:* $L_{E,HF,24h}$: 173 dB.
Phocid Pinnipeds (PW) (Underwater)	*Cell 7:* $L_{pk,flat}$: 218 dB; $L_{E,PW,24h}$: 185 dB	*Cell 8:* $L_{E,PW,24h}$: 201 dB.
Otariid Pinnipeds (OW) (Underwater)	*Cell 9:* $L_{pk,flat}$: 232 dB; $L_{E,OW,24h}$: 203 dB	*Cell 10:* $L_{E,OW,24h}$: 219 dB.

* Dual metric acoustic thresholds for impulsive sounds: Use whichever results in the largest isopleth for calculating PTS onset. If a non-impulsive sound has the potential of exceeding the peak sound pressure level thresholds associated with impulsive sounds, these thresholds should also be considered.

Note: Peak sound pressure (L_{pk}) has a reference value of 1 µPa, and cumulative sound exposure level (L_E) has a reference value of 1µPa^{2}s. In this Table, thresholds are abbreviated to reflect American National Standards Institute standards (ANSI 2013). However, peak sound pressure is defined by ANSI as incorporating frequency weighting, which is not the intent for this Technical Guidance. Hence, the subscript "flat" is being included to indicate peak sound pressure should be flat weighted or unweighted within the generalized hearing range. The subscript associated with cumulative sound exposure level thresholds indicates the designated marine mammal auditory weighting function (LF, MF, and HF cetaceans, and PW and OW pinnipeds) and that the recommended accumulation period is 24 hours. The cumulative sound exposure level thresholds could be exceeded in a multitude of ways (i.e., varying exposure levels and durations, duty cycle). When possible, it is valuable for action proponents to indicate the conditions under which these acoustic thresholds will be exceeded.

Ensonified Area

Here, we describe operational and environmental parameters of the activity that will feed into identifying the area ensonified above the acoustic thresholds, which include source levels and transmission loss coefficient.

Sound Propagation

Transmission loss (TL) is the decrease in acoustic intensity as an acoustic pressure wave propagates out from a source. TL parameters vary with frequency, temperature, sea conditions, current, source and receiver depth, water depth, water chemistry, and bottom composition and topography. The general formula for underwater TL is:

$TL = B * \log_{10}(R_1/R_2)$,

where:

B = transmission loss coefficient (assumed to be 15)

R_1 = the distance of the modeled SPL from the driven pile, and

R_2 = the distance from the driven pile of the initial measurement.

This formula neglects loss due to scattering and absorption, which is assumed to be zero here. The degree to which underwater sound propagates away from a sound source is dependent on a variety of factors, most notably the water bathymetry and presence or absence of reflective or absorptive conditions including in-water structures and sediments. Spherical spreading occurs in a perfectly unobstructed (free-field) environment not limited by depth or water surface, resulting in a 6 dB reduction in sound level for each doubling of distance from the source (20*log(range)). Cylindrical spreading occurs in an environment in which sound propagation is bounded by the water surface and sea bottom, resulting in a reduction of 3 dB in sound level for each doubling of distance from the source (10*log(range)). As is common practice in coastal waters, here we assume practical spreading loss (4.5 dB reduction in sound level for each doubling of distance). Practical spreading is a compromise that is often used under conditions where water depth increases as the receiver moves away from the shoreline, resulting in an expected propagation environment that would lie between spherical and cylindrical spreading loss conditions. Practical spreading was used to determine sound propagation for this project.

Sound Source Levels

The intensity of pile driving sounds is greatly influenced by factors such as the type of piles, hammers, and the physical environment in which the activity takes place. There are source level

measurements available for certain pile types and sizes from the similar environments recorded from underwater pile driving projects in Alaska that were evaluated and used as proxy sound source levels to determine reasonable sound source levels likely result from the AKDOT&PF's pile driving and removal activities (Table 5). Many source levels used were more conservative as the values were from larger pile sizes.

TABLE 5—PROPOSED SOUND SOURCE LEVELS

Method and pile type	SSL at 10 meters			Literature Source	**Federal Register** sources [a]
Continuous (Vibratory Pile Driving and DTH)	dB rms				
16-in Steel Piles	161			Navy 2012, 2015	A, B, C, H.
24-in Steel Piles	161			Navy 2012, 2015	C, D, E, H, I.
24-in DTH [b]	166			Denes *et al.* 2016 (Table 72) [b]	B, C, F, G.
8-in DTH [c]	166			NMFS [c]	
Impulsive (Impact Pile Driving and DTH)	dB rms	dB SEL	dB Peak		
24-in Steel Piles	193	181	210	Navy 2015	D, H, I.
24-in DTH [b]		154		Denes *et al.* 2016 [b]	
8-in DTH [c]		144	170	Reyff 2020.	

[a] **Federal Register** (FR) sources:
A: 84 FR 24490, City of Juneau Waterfront Improvement Project, Juneau, Alaska.
B: 85 FR 4278, Statter Harbor Improvement Project, Auke Bay, Alaska.
C: 85 FR 673, Tongass Narrows Ferry Berth Improvements, Ketchikan, Alaska.
D: 85 FR 19294, Port of Alaska's Petroleum and Cement Terminal, Anchorage, Alaska.
E: 84 FR 56767, Auke Bay Ferry Terminal Modifications and Improvements Project, Juneau, Alaska.
F: 85 FR 18196, Gastineau Channel Historical Society Sentinel Island Moorage Float Project, Juneau, Alaska.
G: 85 FR 12523, Ward Cove Cruise Ship Dock Project, Juneau, Alaska.
H: 83 FR 29749, City Dock and Ferry Terminal, Tenakee Springs, Alaska.
I: 82 FR 48987, Sand Point City Dock Replacement Project, Sand Point, Alaska.
[b] DTH pile installation is treated as a continuous sound for Level B calculations and impulsive for Level A calculations.
[c] Tension anchor installation (8-in DTH) is currently treated as DTH pile installation.
Notes: DTH = down-the-hole pile installation; SSL = sound source = level; dB = decibel; rms = root mean square; SEL = sound ure level.

Level A Harassment

In conjunction with the NMFS Technical Guidance (2018), in recognition of the fact that ensonified area/volume could be more technically challenging to predict because of the duration component in the new thresholds, we developed a User Spreadsheet that includes tools to help predict a simple isopleth that can be used in conjunction with marine mammal density or occurrence to help predict takes. We note that because of some of the assumptions included in the methods used for these tools, we anticipate that isopleths produced are typically going to be overestimates of some degree, which may result in some degree of overestimate of Level A harassment take. However, these tools offer the best way to predict appropriate isopleths when more sophisticated 3D modeling methods are not available, and NMFS continues to develop ways to quantitatively refine these tools, and will qualitatively address the output where appropriate. For stationary sources (such as from impact and vibratory pile driving and DTH), NMFS User Spreadsheet (2020) predicts the closest distance at which, if a marine mammal remained at that distance the whole duration of the activity, it would not incur PTS. Inputs used in the User Spreadsheet (Tables 6 and 7), and the resulting isopleths are reported below (Table 8).

TABLE 6—NMFS TECHNICAL GUIDANCE (2020) USER SPREADSHEET INPUT TO CALCULATE PTS ISOPLETHS FOR VIBRATORY PILE DRIVING

User Spreadsheet Input—Vibratory pile driving spreadsheet tab A.1 vibratory pile driving used	16-in piles (removal)	24-in piles temporary (install/removal)	24-in plumb/batter piles permanent (install)
Source Level (RMS SPL)	161	161	161
Weighting Factor Adjustment (kHz)	2.5	2.5	2.5
Number of piles within 24-hr period	4	4	4
Duration to drive a single pile (min)	30	30	30
Propagation (xLogR)	15	15	15
Distance of source level measurement (meters) +	10	10	10

TABLE 7—NMFS TECHNICAL GUIDANCE (2020) USER SPREADSHEET INPUT TO CALCULATE PTS ISOPLETHS FOR IMPACT PILE DRIVING

User spreadsheet input—impact pile driving spreadsheet Tab E.1 impact pile driving used	24-in piles (permanent)	8-in pile (DTH)	8-in pile (DTH)	8-in pile (DTH)	24-in pile (DTH)	24-in pile (DTH)	24-in pile (DTH)
Source Level (Single Strike/shot SEL)	181	144	144	144	154	154	154
Weighting Factor Adjustment (kHz)	2	2	2	2	2	2	2
Number of strikes per pile	20	54,000	108,000	162,000	54,000	81,000	162,000

TABLE 7—NMFS TECHNICAL GUIDANCE (2020) USER SPREADSHEET INPUT TO CALCULATE PTS ISOPLETHS FOR IMPACT PILE DRIVING—Continued

User spreadsheet input—impact pile driving spreadsheet Tab E.1 impact pile driving used							
	24-in piles (permanent)	8-in pile (DTH)	8-in pile (DTH)	8-in pile (DTH)	24-in pile (DTH)	24-in pile (DTH)	24-in pile (DTH)
Minutes per pile	.....	60	120	180	60	90	180
Number of piles per day	3	1	1	1	1	1	1
Propagation (xLogR)	15	15	15	15	15	15	15
Distance of source level measurement (meters) +	10	10	10	10	10	10	10

TABLE 8—NMFS TECHNICAL GUIDANCE (2020) USER SPREADSHEET OUTPUTS TO CALCULATE LEVEL A HARASSMENT PTS ISOPLETHS

User spreadsheet output		PTS isopleths (meters)				
Activity	Sound source level at 10 m	Level A harassment				
		Low-frequency cetaceans	Mid-frequency cetaceans	High-frequency cetaceans	Phocid	Otariid
Vibratory Pile Driving/Removal						
16-in steel pile removal	161 SPL	10.8	1.0	16.0	6.6	0.5
24-in steel pile temporary installation and removal	161 SPL	10.8	1.0	16.0	6.6	0.5
24-in steel pile permanent	161 SPL	10.8	1.0	16.0	6.6	0.5
Impact Pile Driving						
24-in steel permanent installation (3 piles a day)	181 SEL/193 SPL	112.6	4.0	134.1	60.3	4.4
24-in steel permanent installation (2 piles a day)	181 SEL/193 SPL	85.9	3.1	102.3	46.0	3.3
24-in steel permanent installation (1 piles a day)	181 SEL/193 SPL	54.1	1.9	64.5	29.0	2.1
DTH						
8-in steel (60 min)	144 SEL/166 SPL	35.8	1.3	42.7	19.2	1.4
8-in steel (120 min)	144 SEL/166 SPL	56.9	2.0	67.8	30.4	2.2
8-in steel (180 min)	144 SEL/166 SPL	74.5	2.7	88.8	39.9	2.9
24-in steel (60 min)	154 SEL/166 SPL	166.3	5.9	198.1	89.0	6.5
24-in steel (90 min)	154 SEL/166 SPL	218.0	7.8	259.6	116.6	8.5
24-in steel (180 min)	154 SEL/166 SPL	346.0	12.3	412.1	185.2	13.5

Level B Harassment

Utilizing the practical spreading loss model, the AKDOT&PF determined underwater noise will fall below the behavioral effects threshold of 120 dB rms for marine mammals at the distances shown in Table 9 for vibratory pile driving/removal, and DTH. With these radial distances, the largest Level B harassment zone calculated was for DTH at 11,659 m. For calculating the Level B harassment zone for impact driving, the practical spreading loss model was used with a behavioral threshold of 160 dB rms. The maximum radial distance of the Level B harassment zone for impact piling equaled 1,585 m for 24-in piles. Table 9 below provides all Level B harassment radial distances (m) during the AKDOT&PF's proposed activities.

TABLE 9—RADIAL DISTANCES (METERS) TO RELEVANT BEHAVIORAL ISOPLETHS

Activity	Received level at 10 meters (m)	Level B harassment zone (m) *
Vibratory Pile Driving/Removal and DTH		
16-in steel piles	161 SPL	5,415 (calculated 5,412).
24-in steel piles	161 SPL	5,415 (calculated 5,412).
8-in and 24-in DTH	166 SPL	11,660 (calculated 11,659).
Impact Pile Driving		
24-in steel piles	181 SEL/193 SPL	1,585.

* Numbers rounded up to nearest 5 meters. These specific rounded distances are for monitoring purposes rather than take estimation.

Marine Mammal Occurrence and Take Calculation and Estimation

In this section we provide the information about the presence, density, or group dynamics of marine mammals that will inform the take calculations. Potential exposures to impact pile driving, vibratory pile driving/removal and DTH noises for each acoustic threshold were estimated using group size estimates and local observational data. As shown above, distances to Level A harassment thresholds for project activities are relatively small and mitigation (*i.e.,* shutdown zones) is expected to avoid Level A harassment from these activities. Accordingly, take

by Level B harassment only will be considered for this action. Take by Level B harassment are calculated differently for some species based on monthly or daily sightings data and average group sizes within the action area using the best available data.

Minke Whales

There are no density estimates of minke whales available in the project area. These whales are usually sighted individually or in small groups of two or three, but there are reports of loose aggregations of hundreds of animals (NMFS 2018). Dedicated surveys for cetaceans in Southeast Alaska found that minke whales were scattered throughout inland waters from Glacier Bay and Icy Strait to Clarence Strait (Dahlheim *et al.* 2009). All sightings were of single minke whales, except for a single sighting of multiple minke whales. Anecdotal observations suggest that minke whales do not enter Port Chester, and may be more rare in the project area (L. Bethel, personal communication, June 11, 2020 as cited in the application). Based on the potential for one group of a group size of three whales entering the Level B harassment zone during the project, similar to what is observed in Tongass Narrows, AKDOT&PF requested, and NMFS proposes to authorize, take of three minke whales over the 4-month project period by Level B harassment. No take by Level A harassment is proposed for authorization or anticipated to occur due to their rarer occurrence in the project area. In addition, the shutdown zones are larger than all the calculated Level A harassment isopleths for all pile driving/removal and DTH activities for cetaceans.

Humpback Whales

There are no density estimates of humpback whales available in the project area. Use of Nichols Passage and Port Chester by humpback whales is common but intermittent and dependent on the presence of prey fish. No systematic studies have documented humpback whale abundance near Metlakatla. Anecdotal information from Metlakatla and Ketchikan suggest that humpback whales' utilization of the area is intermittent year-round and local mariners estimate that one to two humpback whales may be present in the Port Chester area on a daily basis during summer months (L. Bethel, personal communication, June 11, 2020 2020 as cited in the application). This is consistent with reports from Ketchikan, which suggest that humpback whales occur alone or in groups of two or three individuals and abundance is highest in August and September (84 FR 34134). However, anecdotal reports suggest that humpback whale abundance is higher and occurrence is more regular in Metlakatla. Therefore, AKDOT&PF requested and NMFS proposes that two groups of two whales, up to four individuals per day, may be taken by Level B harassment for a total of 104 humpback whales (4 whales per day * 26 days = 104 humpback whales).

Under the MMPA, humpback whales are considered a single stock (Central North Pacific); however, we have divided them here to account for DPSs listed under the ESA. Using the stock assessment from Muto *et al.* 2020 for the Central North Pacific stock (10,103 whales) and calculations in Wade *et al.* 2016; 9,487 whales are expected to be from the Hawaii DPS and 606 from the Mexico DPS. Therefore, for purposes of consultation under the ESA, we anticipate that 7 whales of the total takes would be individuals from the Mexico DPS ($104 \times 0.061 = 6.3$ rounded to 7). No take by Level A harassment is proposed for authorization or anticipated to occur due to their large size and ability to be visibly detected in the project area if an animal should approach the Level A harassment zone as well as the size of the Level A harassment zones, which are expected to be manageable for the PSOs. The calculated Level A isopleths for low-frequency cetaceans are 113 m or less with the exception of DTH of limited duration of 24-in piles where they range from 166.3–346.0 m. The shutdown zones (Table 11) are larger for all calculated Level A harassment isopleths during all pile driving activities (vibratory, impact and DTH) for all cetaceans.

Killer Whales

There are no density estimates of killer whales available in the project area. Three distinct eco-types occur in Southeast Alaska (resident, transient and offshore whales; Ford *et al.,* 1994; Dahlheim *et al.,* 1997, 2008). Dahlheim *et al.* (2009) observed transient killer whales within Lynn Canal, Icy Strait, Stephens Passage, Frederick Sound, and upper Chatham Strait. As determined during a line-transect survey by Dalheim *et al.* (2008), the greatest number of transient killer whale observed in Southeast Alaska occurred in 1993 with 32 animals seen over 2 months for an average of 16 sightings per month. Resident pods were also observed in Icy Strait, Lynn Canal, Stephens Passage, Frederick Sound and upper Chatham Straight (Dalheim *et al.* 2008). Transient killer whales are often found in long-term stable social units (pods) of 1 to 16 whales. Average pod sizes in Southeast Alaska were 6 in spring, 5 in summer, and 4 in fall. Pod sizes of transient whales are generally smaller than those of resident social groups. Resident killer whales occur in pods ranging from 7 to 70 whales that are seen in association with one another more than 50 percent of the time (Dahlheim *et al.* 2009; NMFS 2016b). In Southeast Alaska, resident killer whale mean pod size was approximately 21.5 in spring, 32.3 in summer, and 19.3 in fall (Dahlheim *et al.* 2009). Killer whales are observed occasionally during summer throughout Nichols Passage, but their presence in Port Chester is unlikely. Anecdotal local information suggests that killer whales are rarely seen within the Port Chester area, but may be present more frequently in Nichols Passage and other areas around Gravina Island (L. Bethel, personal communication, June 11, 2020 2020 as cited in the application). To be conservative AKDOT&PF requested one killer whale pod of up to 15 individuals once during the project could be taken by Level B harassment based on a pod of 12 killer whales that may be present each month similar to Tongass Narrows near Ketchikan. Additionally, a recent monitoring report for Tongass Narrows reported 10 individuals sighted and 10 Level B harassment takes of killer whales during May 2021. No take by Level A harassment is proposed for authorization or anticipated to occur to the ability to visibly detect these large whales and the small size of the Level A harassment zones. In addition, the shutdown zones are larger than all the calculated Level A harassment isopleths for all pile driving/removal and DTH activities for cetaceans.

Pacific White-Sided Dolphin

There are no density estimates of Pacific white-sided dolphins available in the project area. Most observations of Pacific white-sided dolphins occur off the outer coast or in inland waterways near entrances to the open ocean. Pacific white-sided dolphins have been observed in Alaska waters in groups ranging from 20 to 164 animals, with the sighting of 164 animals occurring in Southeast Alaska near Dixon Entrance to the south of Metlakatla (Muto *et al.,* 2018). In nearby Tongass Narrows, NMFS estimated that one group of 92 Pacific white-sided dolphin (median between 20 and 164) may occur over a period of 1 year (85 FR 673). There are no records of this species occurring in Port Chester, and it is uncommon for individuals to occur in the project area. Therefore, the AKDOT&PF requested

and NMFS proposes one large group of 92 dolphins may be taken by Level B harassment during the project. No take by Level A harassment is proposed or anticipated as the Level A harassment isopleths are so small.

Dall's Porpoise

There are no density estimates of Dall's porpoise available in the project area. Little information is available on the abundance of Dall's porpoise in the inland waters of Southeast Alaska. Dall's porpoise are most abundant in spring, observed with lower numbers in the summer, and lowest numbers in fall. Jefferson *et al.,* 2019 presents abundance estimates for Dall's porpoise in these waters and found the abundance in summer (N = 2,680, CV = 19.6 percent), and lowest in fall (N = 1,637, CV = 23.3 percent). No systematic studies of Dall's porpoise abundance or distribution have occurred in Port Chester or Nichols Passage; however, Dall's porpoises have been consistently observed in Lynn Canal, Stephens Passage, upper Chatham Strait, Frederick Sound, and Clarence Strait (Dahlheim *et al.* 2009). The species is generally found in waters in excess of 600 ft (183 m) deep, which do not occur in Port Chester. If Dall's porpoises occur in the project area, they will likely be present in March or April, given the strong seasonal patterns observed in nearby areas of Southeast Alaska (Dahlheim *et al.* 2009). Dall's porpoises are seen once a month or less within Port Chester and Nichols Passage in groups of less than 10 animals (L. Bethel, personal communication, June 11, 2020 as cited in the application).

Dall's porpoises are not expected to occur in Port Chester because the shallow water habitat of the bay is atypical of areas where Dall's porpoises usually occur. Therefore, AKDOT&PF requests and NMFS proposes one group of Dall's porpoise (15 individuals) per month, similar to what was estimated in nearby Tongass Narrows, may be taken by Level B harassment for a total of 30 Dall's porpoises during the 26 days of in-water construction (2 months * 15 porpoises per month = 30). No take by Level A harassment is proposed for authorization or anticipated to occur due to their rarer occurrence in the project area and the unlikelihood that they would enter the Level A harassment zone and remain long enough to incur PTS in the rare event that they are encountered. No take by Level A harassment is proposed for authorization or anticipated to occur, as the calculated isopleths for high-frequency cetaceans are 134 m or less during all activities except during DTH for 24-in piles of limited duration where they are 198 m–412 m. The shutdown zones (Table 11) are larger for all calculated Level A harassment isopleths during all pile driving activities (vibratory, impact and DTH) for all cetaceans.

Harbor Porpoise

There are no density estimates of Harbor porpoise available in the project area. Although there have been no systematic studies or observations of harbor porpoises specific to Port Chester or Nichols Passage, there is potential for them to occur within the project area. Abundance data for harbor porpoises in Southeast Alaska were collected during 18 seasonal surveys spanning 22 years, from 1991 to 2012 (Dahlheim *et al.* 2015). During that study, a total of 81 harbor porpoises were observed in the southern inland waters of Southeast Alaska, including Clarence Strait. The average density estimate for all survey years in Clarence Strait was 0.02 harbor porpoises per square kilometer. There does not appear to be any seasonal variation in harbor porpoise density for the inland waters of Southeast Alaska (Dahlheim *et al.* 2015). Approximately one to two groups of harbor porpoises are observed each week in group sizes of up to 10 animals around Driest Point, located 5 km (3.1 mi) north of the project location (L. Bethel, personal communication, June 11, 2020 as cited in the application). Therefore, AKDOT&PK requests and NMFS proposes that 2 groups of 5 harbor porpoises (average group size of local sightings) per 5 days of in-water work may be taken by Level B harassment. Expressed in another way, this is an average of 2 harbor porpoise per day of in-water work. Therefore, we estimate 52 exposures over the course of the project (26 days * 2 porpoises per day = 52). No take by Level A harassment is proposed for authorization or anticipated to occur, as the calculated isopleths for high-frequency cetaceans are 134 m or less during all activities except during DTH for 24-in piles of limited duration where they are 198 m–412 m. The shutdown zones (Table 11) are larger for all calculated Level A harassment isopleths during all pile driving activities (vibratory, impact and DTH) for all cetaceans.

Harbor Seal

There are no density estimates of harbor seals available in the project area. Harbor seals are commonly sighted in the waters of the inside passages throughout Southeast Alaska. Surveys in 2015 estimated 429 (95 percent Confidence Interval [CI]: 102–1,203) harbor seals on the northwest coast of Annettte Island, between Metlakatla and Walden Point. An additional 90 (95 percent CI: 18–292) were observed along the southwest coast of Annette Island, between Metlakatla and Tamgas Harbor (NOAA 2019). The Alaska Fisheries Science Center identifies three haulouts in Port Chester (less than a mile from the project area) and three additional haulouts north of Driest Point (3.7 mi from the project are). Abundance estimates for these haulouts are not available, but they are all denoted as having had more than 50 harbor seals at one point in time (NOAA 2020). However, local biologists report only small numbers (fewer than 10) of harbor seals are regularly observed in Port Chester. As many as 10 to 15 harbor seals may utilize Sylburn Harbor, north of Metlakatla across Driest Point (R. Cook, personal communication, June 5, 2020 as cited in the application), as a haulout location. Therefore, AKDOT&PK requests and NMFS proposes that up to 15 harbor seals may be taken by Level B harassment each day, for a total of 390 exposures (26 days * 15 seals per day = 390). No take by Level A harassment is proposed for authorization or anticipated to occur, as the calculated isopleths are 60 m or less during all activities except during DTH for 24-in piles of limited duration where they are 89–186 m. In addition, the shutdown zones (Table 11) are larger for all calculated Level A harassment isopleths during all pile driving activities (vibratory, impact and DTH) for all pinnipeds.

Steller Sea Lion

There are no density estimates of Steller sea lions available in the project area. Steller sea lions are common within the project area; however, systematic counts or surveys have not been completed in the area directly surrounding Metlakatla. Three haulouts are located within 150 km (93 mi) of the project area (Fritz *et al.* 2016a); the nearest documented haulout is West Rock, about 45 km (28 mi) south of Metlakatla. West Rock had a count of 703 individuals during a June 2017 survey and 1,101 individuals during a June 2019 survey (Sweeney *et al.* 2017, 2019). Aerial surveys occurred intermittently between 1994 and 2015, and averaged 982 adult Steller sea lions (Fritz *et al.,* 2016b). Anecdotal evidence indicate that 3 to 4 Steller sea lions utilize a buoy as a haulout near the entrance of Port Chester, about 3.2 km (2 mi) from the project location (L. Bethel, personal communication, June 11, 2020 as cited in the application). Steller sea lions are not known to

congregate near the cannery in Metlakatla. Anecdotal evidence suggests that the species assemblages and abundance in Metlakatla are similar to Tongass Narrows where 20 sea lions are estimated each day during July through September. A recent monitoring report for Tongass Narrows reported 41 individual sightings of Steller sea lions with 9 takes by Level B harassment in May 2021. Therefore to be conservative, AKDOT&PF requests and NMFS proposes two groups of 10 Steller sea lions (20 Steller sea lions) may be taken by Level B harassment for a total of 520 Steller sea lions (26 days * 20 sea lions per day = 520). No take by Level A harassment is proposed or anticipated to occur as the largest Level A isopleth calculated was 13.5 m during DTH of 24-in piles and the remaining isopleths were less than 10 m. In addition, the shutdown zones (Table 11) are larger for all calculated Level A harassment isopleths during all pile driving activities (vibratory, impact and DTH) for all pinnipeds.

Table 10 below summarizes the proposed estimated take for all the species described above as a percentage of stock abundance.

TABLE 10—PROPOSED TAKE ESTIMATES AS A PERCENTAGE OF STOCK ABUNDANCE

Species	Stock (N_{EST})	Level B harassment	Percent of stock
Minke Whale	Alaska (N/A)	12	N/A.
Humpback Whale	Central North Pacific (10,103)	104	Less than 1 percent.
Killer Whale	Alaska Resident (2,347)	15	0.6[a].
	Northern Resident (302)		5.0[a].
	West Coast Transient (349)		4.3[a].
Pacific White-Sided Dolphin	North Pacific (26,880)	92	Less than 1 percent.
Dall's Porpoise	Alaska (83,400)[b]	30	Less than 1 percent.
Harbor Porpoise	Southeast Alaska (NA)	52	NA.
Harbor Seal	Clarence Strait (27,659)	390	1.4.
Steller Sea Lion	Eastern U.S. (43,201)	520	1.2.

[a] Take estimates are weighted based on calculated percentages of population for each distinct stock, assuming animals present would follow same probability of presence in project area.

[b] Jefferson *et al.* 2019 presents the first abundance estimates for Dall's porpoise in the waters of Southeast Alaska with highest abundance recorded in spring (N = 5,381, CV = 25.4 percent), lower numbers in summer (N = 2,680, CV = 19.6 percent), and lowest in fall (N = 1,637, CV = 23.3 percent). However, NMFS currently recognizes a single stock of Dall's porpoise in Alaskan waters and an estimate of 83,400 Dall's porpoises is used by NMFS for the entire stock (Muto *et al.,* 2020).

Proposed Mitigation

In order to issue an IHA under Section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses (latter not applicable for this action). NMFS regulations require applicants for incidental take authorizations to include information about the availability and feasibility (economic and technological) of equipment, methods, and manner of conducting such activity or other means of effecting the least practicable adverse impact upon the affected species or stocks and their habitat (50 CFR 216.104(a)(11)).

In evaluating how mitigation may or may not be appropriate to ensure the least practicable adverse impact on species or stocks and their habitat, as well as subsistence uses where applicable, we carefully consider two primary factors:

(1) The manner in which, and the degree to which, the successful implementation of the measure(s) is expected to reduce impacts to marine mammals, marine mammal species or stocks, and their habitat. This considers the nature of the potential adverse impact being mitigated (likelihood, scope, range). It further considers the likelihood that the measure will be effective if implemented (probability of accomplishing the mitigating result if implemented as planned) the likelihood of effective implementation (probability implemented as planned); and

(2) The practicability of the measures for applicant implementation, which may consider such things as cost, impact on operations, and, in the case of a military readiness activity, personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

General

The AKDOT&PF would follow mitigation procedures as outlined in their Marine Mammal Monitoring Plan and as described below. In general, if poor environmental conditions restrict visibility full visibility of the shutdown zone, pile driving installation and removal as well as DTH would be delayed.

Training

The AKDOT&PF must ensure that construction supervisors and crews, the monitoring team, and relevant AKDOT&PF staff are trained prior to the start of construction activity subject to this IHA, so that responsibilities, communication procedures, monitoring protocols, and operational procedures are clearly understood. New personnel joining during the project must be trained prior to commencing work.

Avoiding Direct Physical Interaction

The AKDOT&PF must avoid direct physical interaction with marine mammals during construction activity. If a marine mammal comes within 10 m of such activity, operations must cease and vessels must reduce speed to the minimum level required to maintain steerage and safe working conditions, as necessary to avoid direct physical interaction.

Shutdown Zones

For all pile driving/removal and DTH activities, the AKDOT&PF would establish a shutdown zone for a marine mammal species that is greater than its corresponding Level A harassment zone (Table 11). The purpose of a shutdown zone is generally to define an area within which shutdown of the activity would occur upon sighting of a marine mammal (or in anticipation of an animal entering the defined area). The shutdown zones are larger than all the calculated Level A harassment isopleths

for all pile driving/removal and DTH activities for cetaceans and pinnipeds.

TABLE 11—PILE DRIVING SHUTDOWN ZONES DURING PROJECT ACTIVITIES

Activity	Pile diameter	Pile type or number of piles	Shutdown distance (meters)	
			Cetaceans	Pinnipeds
Vibratory Installation/Removal	16- and 24-in	Battered and Plumb	50	50
DTH	24-in	Temporary	200	200
		Battered, Permanent	260	120
		Plumb, Permanent	415	200
DTH	8-in	Permanent	100	50
Impact	24-in	3 piles	135	
		2 piles		100
		1 pile	100	

Soft Start

The AKDOT&PF must use soft start techniques when impact pile driving. Soft start requires contractors to provide an initial set of three strikes from the hammer at reduced energy, followed by a 30-second waiting period. Then two subsequent reduced-energy strike sets would occur. A soft start must be implemented at the start of each day's impact pile driving and at any time following cessation of impact pile driving for a period of 30 minutes or longer. Soft start is not required during vibratory pile driving and removal activities.

Based on our evaluation of the applicant's proposed measures, NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on the affected species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Proposed Monitoring and Reporting

In order to issue an IHA for an activity, Section 101(a)(5)(D) of the MMPA states that NMFS must set forth, requirements pertaining to the monitoring and reporting of such taking. The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area. Effective reporting is critical both to compliance as well as ensuring that the most value is obtained from the required monitoring.

Monitoring and reporting requirements prescribed by NMFS should contribute to improved understanding of one or more of the following:

- Occurrence of marine mammal species or stocks in the area in which take is anticipated (*e.g.,* presence, abundance, distribution, density);
- Nature, scope, or context of likely marine mammal exposure to potential stressors/impacts (individual or cumulative, acute or chronic), through better understanding of: (1) Action or environment (*e.g.,* source characterization, propagation, ambient noise); (2) affected species (*e.g.,* life history, dive patterns); (3) co-occurrence of marine mammal species with the action; or (4) biological or behavioral context of exposure (*e.g.,* age, calving or feeding areas);
- Individual marine mammal responses (behavioral or physiological) to acoustic stressors (acute, chronic, or cumulative), other stressors, or cumulative impacts from multiple stressors;
- How anticipated responses to stressors impact either: (1) Long-term fitness and survival of individual marine mammals; or (2) populations, species, or stocks;
- Effects on marine mammal habitat (*e.g.,* marine mammal prey species, acoustic habitat, or other important physical components of marine mammal habitat); and
- Mitigation and monitoring effectiveness.

Monitoring Zones

The AKDOT&PF will conduct monitoring to include the area within the Level B harassment presented in Table 9. Monitoring will include all areas where SPLs are equal to or exceed 120 dB rms (for vibratory pile driving/removal and DTH) and 160 dB rms (for impact pile driving). These zones provide utility for monitoring conducted for mitigation purposes (*i.e.,* shutdown zone monitoring) by establishing monitoring protocols for areas adjacent to the shutdown zones. Monitoring of the Level B harassment zones enables observers to be aware of and communicate the presence of marine mammals in the project area, but outside the shutdown zone, and thus prepare for potential shutdowns of activity.

Pre-Start Clearance Monitoring

Pre-start clearance monitoring must be conducted during periods of visibility sufficient for the lead PSO to determine the shutdown zones clear of marine mammals. Pile driving and DTH may commence when the determination is made.

Visual Monitoring

Monitoring must take place from 30 minutes (min) prior to initiation of pile driving and DTH activity (*i.e.,* pre-start clearance monitoring) through 30 min post-completion of pile driving and DTH activity. If a marine mammal is observed entering or within the shutdown zones, pile driving and DTH activity must be delayed or halted. If pile driving or DTH is delayed or halted due to the presence of a marine mammal, the activity may not commence or resume until either the animal has voluntarily exited and been visually confirmed beyond the shutdown zone or 15 min have passed without re-detection of the animal. Pile driving and DTH activity must be halted upon observation of either a species for which incidental take is not authorized or a species for which incidental take has been authorized but the authorized number of takes has been met, entering or within the harassment zone.

PSO Monitoring Requirements and Locations

The AKDOT&PF must establish monitoring locations as described in the Marine Mammal Monitoring Plan. PSOs

will be responsible for monitoring, the shutdown zones, the Level B harassment zones, and the pre-clearance zones, as well as effectively documenting Level B harassment take. As described in more detail in the Reporting section below, they will also (1) document the frequency at which marine mammals are present in the project area, (2) document behavior and group composition (3) record all construction activities, and (4) document observed reactions (changes in behavior or movement) of marine mammals during each sighting. Observers will monitor for marine mammals during all in-water pile installation/removal and DTH associated with the project. The AKDOT&PF must monitor the project area to the extent possible based on the required number of PSOs, required monitoring locations, and environmental conditions. Monitoring would be conducted by PSOs from land. For all pile driving and DTH activities, a minimum of one observer must be assigned to each active pile driving and DTH location to monitor the shutdown zones. Two PSOs must be onsite during all in-water activities and will monitor from the best vantage point. Due to the remote nature of the area, the PSOs will meet with the future designated Contractor and AKDOT&PF to determine the most appropriate observation location(s) for monitoring during pile installation and removal. These observers must record all observations of marine mammals, regardless of distance from the pile being driven or during DTH.

In addition, PSOs will work in shifts lasting no longer than 4 hrs with at least a 1-hr break between shifts, and will not perform duties as a PSO for more than 12 hrs in a 24-hr period (to reduce PSO fatigue).

Monitoring of pile driving shall be conducted by qualified, NMFS-approved PSOs. The AKDOT&PF shall adhere to the following conditions when selecting PSOs:

- PSOs must be independent (*i.e.,* not construction personnel) and have no other assigned tasks during monitoring periods;
- At least one PSO must have prior experience performing the duties of a PSO during construction activities pursuant to a NMFS-issued incidental take authorization;
- Other PSOs may substitute other relevant experience, education (degree in biological science or related field), or training;
- Where a team of three PSOs are required, a lead observer or monitoring coordinator shall be designated. The lead observer must have prior experience performing the duties of a PSO during construction activity pursuant to a NMFS-issued incidental take authorization; and
- PSOs must be approved by NMFS prior to beginning any activity subject to this IHA.

The AKDOT&PF shall ensure that the PSOs have the following additional qualifications:

- Visual acuity in both eyes (correction is permissible) sufficient for discernment of moving targets at the water's surface with ability to estimate target size and distance; use of binoculars may be necessary to correctly identify the target;
- Experience and ability to conduct field observations and collect data according to assigned protocols;
- Experience or training in the field identification of marine mammals, including the identification of behaviors;
- Sufficient training, orientation, or experience with the construction operation to provide for personal safety during observations;
- Writing skills sufficient to prepare a report of observations including but not limited to the number and species of marine mammals observed; dates and times when in-water construction activities were conducted; dates, times, and reason for implementation of mitigation (or why mitigation was not implemented when required); and marine mammal behavior; and
- Ability to communicate orally, by radio or in person, with project personnel to provide real-time information on marine mammals observed in the area as necessary.

Final Report

The AKDOT&PF will submit a draft report to NMFS on all monitoring conducted under this IHA within 90 calendar days of the completion of monitoring or 60 calendar days prior to the requested issuance of any subsequent IHA for construction activity at the same location, whichever comes first. A final report must be prepared and submitted within 30 days following resolution of any NMFS comments on the draft report. If no comments are received from NMFS within 30 days of receipt of the draft report, the report shall be considered final. All draft and final marine mammal monitoring reports must be submitted to *PR.ITP.MonitoringReports@noaa.gov* and *ITP.Egger@noaa.gov.* The report must contain the informational elements described in the Marine Mammal Monitoring Plan and, at minimum, must include:

- Dates and times (begin and end) of all marine mammal monitoring;
- Construction activities occurring during each daily observation period, including:
  - How many and what type of piles were driven and by what method (*e.g.,* impact, vibratory, DTH);
  - Total duration of driving time for each pile (vibratory driving) and number of strikes for each pile (impact driving); and
  - For DTH, duration of operation for both impulsive and non-pulse components.
- PSO locations during marine mammal monitoring;
- Environmental conditions during monitoring periods (at beginning and end of PSO shift and whenever conditions change significantly), including Beaufort sea state and any other relevant weather conditions including cloud cover, fog, sun glare, and overall visibility to the horizon, and estimated observable distance;
- Upon observation of a marine mammal, the following information:
  - PSO who sighted the animal and PSO location and activity at time of sighting;
  - Time of sighting;
  - Identification of the animal (*e.g.,* genus/species, lowest possible taxonomic level, or unidentified), PSO confidence in identification, and the composition of the group if there is a mix of species;
  - Distance and bearing of each marine mammal observed to the pile being driven for each sighting (if pile driving and DTH was occurring at time of sighting);
  - Estimated number of animals (min/max/best);
  - Estimated number of animals by cohort (adults, juveniles, neonates, group composition etc.;
  - Animal's closest point of approach and estimated time spent within the harassment zone; and
  - Description of any marine mammal behavioral observations (*e.g.,* observed behaviors such as feeding or traveling), including an assessment of behavioral responses to the activity (*e.g.,* no response or changes in behavioral state such as ceasing feeding, changing direction, flushing, or breaching).
- Detailed information about implementation of any mitigation (*e.g.,* shutdowns and delays), a description of specific actions that ensued, and resulting changes in behavior of the animal, if any; and
- All PSO datasheets and/or raw sightings data.

Reporting of Injured or Dead Marine Mammals

In the event that personnel involved in the construction activities discover an injured or dead marine mammal, the AKDOT&PF must report the incident to NMFS Office of Protected Resources (OPR) (*PR.ITP.MonitoringReports@noaa.gov*), NMFS (301–427–8401) and to the Alaska regional stranding network (877–925–7773) as soon as feasible. If the death or injury was clearly caused by the specified activity, the AKDOT&PF must immediately cease the specified activities until NMFS OPR is able to review the circumstances of the incident and determine what, if any, additional measures are appropriate to ensure compliance with the terms of this IHA. The AKDOT&PF must not resume their activities until notified by NMFS. The report must include the following information:

- Time, date, and location (latitude/longitude) of the first discovery (and updated location information if known and applicable);
- Species identification (if known) or description of the animal(s) involved;
- Condition of the animal(s) (including carcass condition if the animal is dead);
- Observed behaviors of the animal(s), if alive;
- If available, photographs or video footage of the animal(s); and
- General circumstances under which the animal was discovered.

Negligible Impact Analysis and Determination

NMFS has defined negligible impact as an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival (50 CFR 216.103). A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.,* population-level effects). An estimate of the number of takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be ''taken'' through harassment, NMFS considers other factors, such as the likely nature of any responses (*e.g.,* intensity, duration), the context of any responses (*e.g.,* critical reproductive time or location, migration), as well as effects on habitat, and the likely effectiveness of the mitigation. We also assess the number, intensity, and context of estimated takes by evaluating this information relative to population status. Consistent with the 1989 preamble for NMFS's implementing regulations (54 FR 40338; September 29, 1989), the impacts from other past and ongoing anthropogenic activities are incorporated into this analysis via their impacts on the environmental baseline (*e.g.,* as reflected in the regulatory status of the species, population size and growth rate where known, ongoing sources of human-caused mortality, or ambient noise levels).

As stated in the proposed mitigation section, shutdown zones that are larger than the Level A harassment zones will be implemented, which, in combination with the fact that the zones are small to begin with, is expected to avoid the likelihood of Level A harassment for marine mammals species.

Exposures to elevated sound levels produced during pile driving activities may cause behavioral responses by an animal, but they are expected to be mild and temporary. Effects on individuals that are taken by Level B harassment, on the basis of reports in the literature as well as monitoring from other similar activities, will likely be limited to reactions such as increased swimming speeds, increased surfacing time, or decreased foraging (if such activity were occurring) (*e.g.,* Thorson and Reyff, 2006; Lerma, 2014). Most likely, individuals will simply move away from the sound source and be temporarily displaced from the areas of pile driving, although even this reaction has been observed primarily only in association with impact pile driving. These reactions and behavioral changes are expected to subside quickly when the exposures cease.

During all impact driving, implementation of soft start procedures and monitoring of established shutdown zones will be required, significantly reducing the possibility of injury. Given sufficient notice through use of soft start (for impact driving), marine mammals are expected to move away from an irritating sound source prior to it becoming potentially injurious. In addition, PSOs will be stationed within the action area whenever pile driving/removal and DTH activities are underway. Depending on the activity, the AKDOT&PF will employ the use of two PSOs to ensure all monitoring and shutdown zones are properly observed.

The project would likely not permanently impact any marine mammal habitat since the project will occur within the same footprint as existing marine infrastructure. The nearshore and intertidal habitat where the project will occur is an area of relatively high marine vessel traffic. The closest pinniped haulouts are used by harbor seals and are less than a mile from the project area; however, impacts to fitness of individuals is likely low (due to short duration of the project) and would not produce population-level impacts. There are no other biologically important areas for marine mammals near the project area. In addition, impacts to marine mammal prey species are expected to be minor and temporary. Overall, the area impacted by the project is very small compared to the available habitat around Metlakatla. The most likely impact to prey will be temporary behavioral avoidance of the immediate area. During pile driving/removal and DTH activities, it is expected that fish and marine mammals would temporarily move to nearby locations and return to the area following cessation of in-water construction activities. Therefore, indirect effects on marine mammal prey during the construction are not expected to be substantial.

In summary and as described above, the following factors primarily support our preliminary determination that the impacts resulting from this activity are not expected to adversely affect the species or stock through effects on annual rates of recruitment or survival:

- No mortality is anticipated or authorized;
- No take by Level A harassment is expected or authorized;
- Minimal impacts to marine mammal habitat/prey are expected;
- The action area is located and within an active marine commercial area;
- Anticipated incidents of Level B harassment consist of, at worst, temporary modifications in behavior; and
- The required mitigation measures (*i.e.* shutdown zones) are expected to be effective in reducing the effects of the specified activity.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, NMFS preliminarily finds that the total marine mammal take from the proposed activity will have a negligible impact on all affected marine mammal species or stocks.

Small Numbers

As noted above, only small numbers of incidental take may be authorized under Section 101(a)(5)(A) and (D) of the MMPA for specified activities other than military readiness activities. The MMPA does not define small numbers

and so, in practice, where estimated numbers are available, NMFS compares the number of individuals taken to the most appropriate estimation of abundance of the relevant species or stock in our determination of whether an authorization is limited to small numbers of marine mammals. When the predicted number of individuals to be taken is fewer than one third of the species or stock abundance, the take is considered to be of small numbers. Additionally, other qualitative factors may be considered in the analysis, such as the temporal or spatial scale of the activities.

Take of six of the marine mammal stocks proposed will comprise at most approximately 1.4 percent or less of the stock abundance. There are no official stock abundances for harbor porpoise and minke whales; however, as discussed in greater detail in the Description of Marine Mammals in the Area of Specified Activities, we believe for the abundance information that is available, the estimated takes are likely small percentages of the stock abundance. For harbor porpoise, the abundance for the Southeast Alaska stock is likely more represented by the aerial surveys that were conducted as these surveys had better coverage and were corrected for observer bias. Based on this data, the estimated take could potentially be approximately 4 percent of the stock abundance. However, this is unlikely and the percentage of the stock taken is likely lower as the proposed take estimates are conservative and the project occurs in a small footprint compared to the available habitat in Southeast Alaska. For minke whales, in the northern part of their range they are believed to be migratory and so few minke whales have been seen during three offshore Gulf of Alaska surveys that a population estimate could not be determined. With only twelve proposed takes for this species, the percentage of take in relation to the stock abundance is likely to be very small.

Based on the analysis contained herein of the proposed activity (including the proposed mitigation and monitoring measures) and the anticipated take of marine mammals, NMFS preliminarily finds that small numbers of marine mammals will be taken relative to the population size of the affected species or stocks.

Unmitigable Adverse Impact Analysis and Determination

In order to issue an IHA, NMFS must find that the specified activity will not have an ''unmitigable adverse impact'' on the subsistence uses of the affected marine mammal species or stocks by Alaskan Natives. NMFS has defined ''unmitigable adverse impact'' in 50 CFR 216.103 as an impact resulting from the specified activity: (1) That is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by: (i) Causing the marine mammals to abandon or avoid hunting areas; (ii) Directly displacing subsistence users; or (iii) Placing physical barriers between the marine mammals and the subsistence hunters; and (2) That cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met.

The project area does not spatially overlap any known subsistence hunting. The project area is a developed area with regular marine vessel traffic. However, the AKDOT&PF plans to provide advance public notice of construction activities to reduce construction impacts on local residents, adjacent businesses, and other users of Port Chester and nearby areas. This will include notification to nearby Alaska Native tribes that may have members who hunt marine mammals for subsistence. Currently, the Metlakatla Indian Community does not authorize the harvest of marine mammals for subsistence use (R. Cook, personal communication, June 5, 2020 as cited in the application).

The proposed project is not likely to adversely impact the availability of any marine mammal species or stocks that are commonly used for subsistence purposes or to impact subsistence harvest of marine mammals in the region because construction activities are localized and temporary; mitigation measures will be implemented to minimize disturbance of marine mammals in the project area. Accordingly, NMFS has preliminarily determined that there will not be an unmitigable adverse impact on subsistence uses from the AKDOT&PF's proposed activities.

Endangered Species Act (ESA)

Section 7(a)(2) of the Endangered Species Act of 1973 (ESA: 16 U.S.C. 1531 *et seq.*) requires that each Federal agency insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat. To ensure ESA compliance for the issuance of IHAs, NMFS consults internally whenever we propose to authorize take for endangered or threatened species, in this case with the Alaska Regional Office (AKRO).

NMFS is proposing to authorize take of the Mexico DPS of humpback whales, which are listed under the ESA. The Permit and Conservation Division has requested initiation of Section 7 consultation with the AKRO for the issuance of this IHA. NMFS will conclude the ESA consultation prior to reaching a determination regarding the proposed issuance of the authorization.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to issue an IHA to the AKDOT&PF for conducting for the proposed pile driving and removal activities as well as DTH during construction of the Metlakatla Seaplane Facility Refurbishment Project, Metlakatla, Alaska for one year, beginning August 2021, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. A draft of the proposed IHA can be found at *https://www.fisheries.noaa.gov/permit/incidental-take-authorizations-under-marine-mammal-protection-act.*

Request for Public Comments

We request comment on our analyses, the proposed authorization, and any other aspect of this notice of proposed IHA for the proposed pile driving and removal activities as well as DTH during construction of the Metlakatla Seaplane Facility Refurbishment Project. We also request at this time, comments on the potential for Renewal of this proposed IHA as described in the paragraph below. Please include with your comments any supporting data or literature citations to help inform decisions on the request for this IHA or a subsequent Renewal IHA.

On a case-by-case basis, NMFS may issue a one-time, 1-year Renewal IHA following notice to the public providing an additional 15 days for public comments when (1) up to another year of identical or nearly identical, or nearly identical, activities as described in the Description of Proposed Activities section of this notice is planned or (2) the activities as described in the Description of Proposed Activities section of this notice would not be completed by the time the IHA expires and a Renewal would allow for completion of the activities beyond that described in the *Dates and Duration* section of this notice, provided all of the following conditions are met:

- A request for renewal is received no later than 60 days prior to the needed Renewal IHA effective date (recognizing that the Renewal IHA expiration date cannot extend beyond one year from expiration of the initial IHA).

■ The request for renewal must include the following:

(1) An explanation that the activities to be conducted under the requested Renewal IHA are identical to the activities analyzed under the initial IHA, are a subset of the activities, or include changes so minor (*e.g.,* reduction in pile size) that the changes do not affect the previous analyses, mitigation and monitoring requirements, or take estimates (with the exception of reducing the type or amount of take); and

(2) A preliminary monitoring report showing the results of the required monitoring to date and an explanation showing that the monitoring results do not indicate impacts of a scale or nature not previously analyzed or authorized.

Upon review of the request for Renewal, the status of the affected species or stocks, and any other pertinent information, NMFS determines that there are no more than minor changes in the activities, the mitigation and monitoring measures will remain the same and appropriate, and the findings in the initial IHA remain valid.

Dated: June 23, 2021.

Catherine Marzin,

Acting Director, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 2021–13790 Filed 6–28–21; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XB193]

Endangered and Threatened Species; Notice of Initiation of a 5-Year Review of the Kemp's Ridley Sea Turtle

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce, and Fish and Wildlife Service (USFWS), Interior.

ACTION: Notice of initiation of 5-year review; request for information.

SUMMARY: NMFS and USFWS announce the initiation of a 5-year review for the Kemp's ridley sea turtle (*Lepidochelys kempii*). We are required by the Endangered Species Act (ESA) to conduct 5-year reviews to ensure that the species' listing status remains accurate. The 5-year review must be based on the best scientific and commercial data available at the time of the review. We request submission of any such information on the Kemp's ridley, particularly information on the status, threats, and recovery of the species that has become available since the last 5-year review was published in July of 2015.

DATES: To allow us adequate time to conduct this review, we must receive your information no later than August 30, 2021.

ADDRESSES: You may submit information on this document, identified by NOAA–NMFS–2021–0063, by the following method:

• *Electronic Submission:* Submit electronic information via the Federal e-Rulemaking Portal. Go to *www.regulations.gov* and enter NOAA–NMFS–2021–0063 in the Search box. Click on the ''Comment'' icon and complete the required fields. Enter or attach your comments.

Instructions: Comments sent by any other method, to any other address or individual, or received after the end of the specified period, may not be considered. All comments received are a part of the public record and will generally be posted for public viewing on *www.regulations.gov* without change. All personal identifying information (*e.g.,* name, address, etc.), confidential business information, or otherwise sensitive or protected information submitted voluntarily by the sender will be publicly accessible. NMFS will accept anonymous submissions (enter ''N/A'' in the required fields if you wish to remain anonymous).

FOR FURTHER INFORMATION CONTACT: Jennifer Schultz, by phone at (301) 427–8443 or *Jennifer.Schultz@noaa.gov.*

SUPPLEMENTARY INFORMATION: This notice announces our 5-year review of the Kemp's ridley, which is listed as an endangered species under the ESA. Section 4(c)(2)(A) of the ESA requires us to conduct a review of listed species at least once every 5 years. On the basis of that review, we are required to determine whether a listed species should be removed from the list (*i.e.,* delisted) or reclassified from endangered to threatened or from threatened to endangered (16 U.S.C. 1533(c)(2)(B)). The regulations in 50 CFR 424.21 require that we publish a notice in the **Federal Register** announcing species under active review.

Background information on the species is available on the NMFS website at: *https://www.fisheries.noaa.gov/species/kemps-ridley-turtle.*

Public Solicitation of New Information

To ensure that the review is complete and based on the best available scientific and commercial information, we are soliciting new information from the public, governmental agencies, Tribes, the scientific community, industry, environmental entities, and any other interested parties concerning the status of the species. Categories of requested information include: (1) Species biology including, but not limited to, population trends, distribution, abundance, demographics, and genetics; (2) habitat conditions including, but not limited to, amount, distribution, and important features for conservation; (3) status and trends of threats to the species and its habitats; (4) conservation measures that have been implemented that benefit the species, including monitoring data demonstrating effectiveness of such measures; (5) need for additional conservation measures; and (6) other new information, data, or corrections including, but not limited to, taxonomic or nomenclatural changes and improved analytical methods for evaluating extinction risk.

If you wish to provide information for the review, you may submit your information and materials electronically (see **ADDRESSES** section). We request that all information be accompanied by supporting documentation such as maps, bibliographic references, or reprints of pertinent publications.

Authority: 16 U.S.C. 1531 *et seq.*

Dated: June 23, 2021.

Margaret H. Miller,

Acting Chief, Endangered Species Division, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 2021–13768 Filed 6–28–21; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[RTID 0648–XB157]

Fisheries of the South Atlantic; Southeast Data, Assessment, and Review (SEDAR); Public Meeting

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice of SEDAR webinar II for SEDAR Procedural Workshop 8: Fishery Independent Index Development Under Changing Survey Design.

SUMMARY: The SEDAR Procedural Workshop 8 for Fishery Independent Index Development will consist of a series of webinars, and an in-person

workshop. See **SUPPLEMENTARY INFORMATION**.

DATES: The SEDAR Procedural Workshop 8 webinar II will be held Monday, July 19, 2021, from 10 a.m. until 12 p.m., Eastern.

ADDRESSES:

Meeting address: The meeting will be held via webinar. The webinar is open to members of the public. Those interested in participating should contact Julie A. Neer at SEDAR (see **FOR FURTHER INFORMATION CONTACT** below) to request an invitation providing webinar access information. Please request webinar invitations at least 24 hours in advance of each webinar.

SEDAR address: 4055 Faber Place Drive, Suite 201, North Charleston, SC 29405.

FOR FURTHER INFORMATION CONTACT: Julie A. Neer, SEDAR Coordinator; phone: (843) 571–4366; email: *Julie.neer@safmc.net*.

SUPPLEMENTARY INFORMATION: The Gulf of Mexico, South Atlantic, and Caribbean Fishery Management Councils, in conjunction with NOAA Fisheries and the Atlantic and Gulf States Marine Fisheries Commissions have implemented the Southeast Data, Assessment and Review (SEDAR) process, a multi-step method for determining the status of fish stocks in the Southeast Region. SEDAR is a multi-step process including: (1) Data Workshop; (2) Assessment Process utilizing webinars; and (3) Review Workshop. The product of the Data Workshop is a data report that compiles and evaluates potential datasets and recommends which datasets are appropriate for assessment analyses. The product of the Assessment Process is a stock assessment report that describes the fisheries, evaluates the status of the stock, estimates biological benchmarks, projects future population conditions, and recommends research and monitoring needs. The assessment is independently peer reviewed at the Review Workshop. The product of the Review Workshop is a Summary documenting panel opinions regarding the strengths and weaknesses of the stock assessment and input data. Participants for SEDAR Workshops are appointed by the Gulf of Mexico, South Atlantic, and Caribbean Fishery Management Councils and NOAA Fisheries Southeast Regional Office, HMS Management Division, and Southeast Fisheries Science Center. Participants include data collectors and database managers; stock assessment scientists, biologists, and researchers; constituency representatives including fishermen, environmentalists, and NGO's; International experts; and staff of Councils, Commissions, and state and federal agencies.

The items of discussion for the webinar are as follows:

Participants will discuss what data are available for use in SEDAR Procedural Workshop 8.

Although non-emergency issues not contained in this agenda may come before this group for discussion, those issues may not be the subject of formal action during this meeting. Action will be restricted to those issues specifically identified in this notice and any issues arising after publication of this notice that require emergency action under section 305(c) of the Magnuson-Stevens Fishery Conservation and Management Act, provided the public has been notified of the intent to take final action to address the emergency.

Special Accommodations

The meeting is physically accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aids should be directed to the Council office (see **ADDRESSES**) at least 10 business days prior to each workshop.

Note: The times and sequence specified in this agenda are subject to change.

Authority: 16 U.S.C. 1801 *et seq.*

Dated: June 24, 2021.

Tracey L. Thompson,

Acting Deputy Director, Office of Sustainable Fisheries, National Marine Fisheries Service.

[FR Doc. 2021–13878 Filed 6–28–21; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[Docket No. 210623–0137; RTID 0648–XY100]

Endangered and Threatened Wildlife; 90-Day Finding on a Petition To List Harbor Seals in Iliamna Lake as a Threatened or Endangered Species

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; 90-day petition finding.

SUMMARY: We, NMFS, announce a 90-day finding on a petition to list the Pacific harbor seals (*Phoca vitulina richardii*) in Iliamna Lake as threatened or endangered under the Endangered Species Act (ESA) and to designate critical habitat. We find that the petition and information readily available in our files does not present new information or analyses that had not been previously considered in our 2016 distinct population segment (DPS) assessment and petition finding and, therefore, the petition does not present substantial scientific or commercial information indicating that the petitioned action may be warranted.

ADDRESSES: Copies of the petition and related materials are available from the NMFS websites at *https://www.fisheries.noaa.gov/national/endangered-species-conservation/negative-90-day-findings* or upon request from the Assistant Regional Administrator for Protected Resources, Alaska Region, NMFS, P.O. Box 21668, Juneau, AK 99802–1668.

FOR FURTHER INFORMATION CONTACT: Jenna Malek, NMFS Alaska Region, (907) 271–1332, *Jenna.Malek@noaa.gov;* Jon Kurland, NMFS Alaska Region, (907) 586–7638, *Jon.Kurland@noaa.gov;* or Adrienne Lohe, NMFS Office of Protected Resources, (301) 427–8442, *Adrienne.Lohe@noaa.gov.*

SUPPLEMENTARY INFORMATION:

Background

On February 6, 2020, we received a petition from the Center for Biological Diversity (CBD) to list the harbor seals in Iliamna Lake, Alaska as a threatened or endangered species under the ESA and to designate critical habitat concurrent with listing. Under the Marine Mammal Protection Act (MMPA), harbor seals in Alaska are divided into 12 separate stocks as described in NMFS's Alaska Marine Mammal Stock Assessments, 2019 (*https://repository.library.noaa.gov/view/noaa/25642*). Harbor seals in Iliamna Lake are within the geographic range of the Bristol Bay harbor seal stock.

CBD previously petitioned NMFS to list the harbor seals in Iliamna Lake as threatened or endangered in 2012. NMFS published a positive 90-day finding in 2013 and commenced a review to determine whether these seals were a ''species'' and if so whether listing was warranted (78 FR 29098; May 17, 2013). Per the joint NMFS–U.S. Fish and Wildlife Service (USFWS) (jointly, ''the Services'') policy that clarifies the agencies' interpretation of the phrase ''distinct population segment'' (61 FR 4722; February 7, 1996), when determining whether a population segment is a DPS, we consider both the discreteness and the significance of the population segment in relation to the remainder of the

species to which it belongs. After completing a DPS assessment, NMFS determined in 2016 that the discreteness of the seals was supported by the limited genetic information available. However, the evidence for discreteness based on physical, physiological, or ecological factors was unconvincing, and the available evidence based on behavioral factors was inconclusive. One of those behavioral considerations was the lack of any documentation of foraging behaviors outside what has been documented as normal harbor seal behavior. Regarding significance, we acknowledged that the year-round persistence of a discrete population of harbor seals in a freshwater lake is unusual for the subspecies, but we noted an absence of evidence suggesting the harbor seals in Iliamna Lake have adaptations to their environment that would benefit the taxon to which they belong. Thus, NMFS concluded that the harbor seals in Iliamna Lake were not significant in relation to the remainder of the species to which they belong and, therefore, listing the harbor seals in Iliamna Lake was not warranted because they did not constitute a species, subspecies, or DPS under the ESA (81 FR 81074; November 17, 2016).

As in its 2012 petition, CBD maintains in its 2020 petition that the harbor seals found in Iliamna Lake constitute a DPS and refers to them in the petition as ''Iliamna Lake seals.'' CBD asserts that the seals in Iliamna Lake face the following threats: (1) Habitat modification and disturbance associated with the Pebble Project (a proposed copper-gold-molybdenum porphyry mine located north of Iliamna Lake) and climate change; (2) disease and natural predation; (3) inadequacy of existing regulatory mechanisms for addressing climate change or the Pebble Project; and (4) other natural and anthropogenic factors including risks of rarity, fishing and hunting, illegal feeding and harassment, oil and gas exploration and development, and contaminants. CBD concludes that the combination of being a small, isolated population with the identified threats qualifies the seals in Iliamna Lake for listing as a threatened or endangered species under the ESA.

ESA Statutory, Regulatory, and Policy Provisions and Evaluation Framework

Section 4(b)(3)(A) of the ESA of 1973, as amended (16 U.S.C. 1531 *et seq.*), requires, to the maximum extent practicable, that within 90 days of receipt of a petition to list a species as threatened or endangered, the Secretary of Commerce make a finding on whether that petition presents substantial scientific or commercial information indicating that the petitioned action may be warranted, and promptly publish such finding in the **Federal Register** (16 U.S.C. 1533(b)(3)(A)). When it is found that substantial scientific or commercial information in a petition indicates the petitioned action may be warranted (a ''positive 90-day finding''), we are required to promptly commence a review of the status of the species concerned during which we will conduct a comprehensive review of the best available scientific and commercial information. In such cases, we conclude the review with a finding as to whether, in fact, the petitioned action is warranted within 12 months of receipt of the petition. Because the finding at the 12-month stage is based on a more thorough review of the available information, as compared to the narrow scope of review at the 90-day stage, a ''may be warranted'' finding does not prejudge the outcome of the status review.

Under the ESA, a listing determination may address a species, which is defined to also include subspecies and, for any vertebrate species, any DPS that interbreeds when mature (16 U.S.C. 1532(16)). A joint policy issued by the Services clarifies the agencies' interpretation of the phrase ''distinct population segment'' for the purposes of listing, delisting, and reclassifying a species under the ESA (61 FR 4722; February 7, 1996). A species, subspecies, or DPS is ''endangered'' if it is in danger of extinction throughout all or a significant portion of its range, and ''threatened'' if it is likely to become endangered within the foreseeable future throughout all or a significant portion of its range (ESA sections 3(6) and 3(20), respectively, 16 U.S.C. 1532(6) and (20)). Pursuant to the ESA and our implementing regulations, we determine whether species are threatened or endangered based on any one or a combination of the following five section 4(a)(1) factors: (1) The present or threatened destruction, modification, or curtailment of habitat or range; (2) overutilization for commercial, recreational, scientific, or educational purposes; (3) disease or predation; (4) inadequacy of existing regulatory mechanisms to address identified threats; (5) or any other natural or manmade factors affecting the species' existence (16 U.S.C. 1533(a)(1), 50 CFR 424.11(c)).

ESA-implementing regulations issued jointly by NMFS and USFWS (50 CFR 424.14(h)(1)(i)) define ''substantial scientific or commercial information'' in the context of reviewing a petition to list, delist, or reclassify a species as credible scientific or commercial information in support of the petition's claims such that a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted. Conclusions drawn in the petition without the support of credible scientific or commercial information will not be considered ''substantial information.'' In reaching the initial (90-day) finding on the petition, we will consider the information described in sections 50 CFR 424.14(c), (d), and (g) (if applicable).

Our determination as to whether the petition provides substantial scientific or commercial information indicating that the petitioned action may be warranted will depend in part on the degree to which the petition includes the following types of information: (1) Current population status and trends and estimates of current population sizes and distributions, both in captivity and the wild, if available; (2) identification of the factors under section 4(a)(1) of the ESA that may affect the species and where these factors are acting upon the species; (3) whether and to what extent any or all of the factors alone or in combination identified in section 4(a)(1) of the ESA may cause the species to be an endangered species or threatened species (*i.e.,* the species is currently in danger of extinction or is likely to become so within the foreseeable future), and, if so, how high in magnitude and how imminent the threats to the species and its habitat are; (4) adequacy of regulatory protections and effectiveness of conservation activities by States as well as other parties, that have been initiated or that are ongoing, that may protect the species or its habitat; and (5) a complete, balanced representation of the relevant facts, including information that may contradict claims in the petition. *See* 50 CFR 424.14(d).

If the petitioner provides supplemental information before the initial finding is made and states that it is part of the petition, the new information, along with the previously submitted information, is treated as a new petition that supersedes the original petition, and the statutory timeframes will begin when such supplemental information is received. *See* 50 CFR 424.14(g).

We may also consider information readily available at the time the determination is made. We are not required to consider any supporting materials cited by the petitioner if the petitioner does not provide electronic or hard copies, to the extent permitted by U.S. copyright law, or appropriate

excerpts or quotations from those materials (*e.g.,* publications, maps, reports, letters from authorities). *See* 50 CFR 424.14(c)(6).

The ''substantial scientific or commercial information'' standard must be applied in light of any prior reviews or findings we have made on the listing status of the species that is the subject of the petition. Where we have already conducted a finding on, or review of, the listing status of that species (whether in response to a petition or on our own initiative), we will evaluate any petition received thereafter seeking to list, delist, or reclassify that species to determine whether a reasonable person conducting an impartial scientific review would conclude that the action proposed in the petition may be warranted despite the previous review or finding. Where the prior review resulted in a final agency action—such as a final listing determination, 90-day not-substantial finding, or 12-month not-warranted finding—a petition will generally not be considered to present substantial scientific and commercial information indicating that the petitioned action may be warranted unless the petition provides new information or analysis not previously considered. *See* 50 CFR 424.14(h)(1)(iii).

At the 90-day finding stage, we do not conduct additional research, and we do not solicit information from parties outside the agency to help us in evaluating the petition. We will accept the petitioners' sources and characterizations of the information presented if they appear to be based on accepted scientific principles, unless we have specific information in our files that indicates the petition's information is incorrect, unreliable, obsolete, or otherwise irrelevant to the requested action. Information that is susceptible to more than one interpretation or that is contradicted by other available information will not be dismissed at the 90-day finding stage, so long as it is reliable and a reasonable person conducting an impartial scientific review would conclude it supports the petitioners' assertions. In other words, conclusive information indicating the species may meet the ESA's requirements for listing is not required to make a positive 90-day finding. We will not conclude that a lack of specific information alone necessitates a negative 90-day finding if a reasonable person conducting an impartial scientific review would conclude that the unknown information itself suggests the species may be at risk of extinction presently or within the foreseeable future.

To make a 90-day finding on a petition to list a species, we first evaluate whether the petition presents substantial scientific or commercial information indicating the subject of the petition may constitute a ''species'' eligible for listing under the ESA. If so, we evaluate whether the information indicates that the species may face an extinction risk such that listing, delisting, or reclassification may be warranted; this may be indicated in information expressly discussing the species' status and trends, or in information describing impacts and threats to the species. We evaluate whether the petition presents any information on specific demographic factors pertinent to evaluating extinction risk for the species (*e.g.,* population abundance and trends, productivity, spatial structure, age structure, sex ratio, diversity, current and historical range, habitat integrity or fragmentation), and the potential contribution of identified demographic risks to extinction risk for the species. We then evaluate whether the petition presents information suggesting potential links between these demographic risks and the causative impacts and threats identified in section 4(a)(1) of the ESA.

Information presented on impacts or threats should be specific to the species and should reasonably suggest that one or more of these factors may be operative threats that act or have acted on the species to the point that it may warrant protection under the ESA. Broad statements about generalized threats to the species, or identification of factors that could negatively impact a species, do not constitute substantial information indicating that listing may be warranted. We look for information indicating that not only is the particular species exposed to a factor, but that the species may be responding in a negative fashion; then we assess the potential significance of that negative response.

Many petitions identify risk classifications made by nongovernmental organizations, such as the International Union on the Conservation of Nature (IUCN), the American Fisheries Society, or NatureServe, as evidence of extinction risk for a species. Risk classifications by other organizations or made under other Federal or state statutes may be informative, but such classification alone may not provide the rationale for a positive 90-day finding under the ESA. For example, as explained by NatureServe, their assessments of a species' conservation status do ''not constitute a recommendation by NatureServe for listing under the U.S. Endangered Species Act'' because NatureServe assessments ''have different criteria, evidence requirements, purposes and taxonomic coverage than government lists of endangered and threatened species, and therefore these two types of lists should not be expected to coincide'' (*https://explorer.natureserve.org/AboutTheData/DataTypes/ConservationStatusCategories*). Additionally, species classifications under IUCN and the ESA are not equivalent; data standards, criteria used to evaluate species, and treatment of uncertainty are also not necessarily the same. Thus, when a petition cites such classifications, we will evaluate the source of information that the classification is based upon in light of the standards on extinction risk and impacts or threats discussed above.

Analysis of Petition

We have reviewed the petition, the literature cited in the petition, and other literature and information readily available in our files. In addition to reiterating information used to support the 2012 petition, the petitioners assert that a recent paper by Brennan *et al.* (2019) supports the conclusion that the harbor seals in Iliamna Lake are a discrete population and provides evidence of their significance to the broader taxon (the Pacific harbor seal subspecies; *Phoca vitulina richardii*), demonstrating eligibility of this group of seals for designation as a DPS. As discussed above, we evaluate any petition seeking to list a species in light of any prior reviews or findings we have already made on the species that is the subject of the petition. Because our previous review resulted in a final agency action finding the harbor seals in Iliamna Lake did not constitute a species, subspecies, or DPS under the ESA, the petitioned action will generally not be considered to present substantial scientific or commercial information indicating that the action may be warranted unless the petition provides new information or a new analysis not previously considered. *See* 50 CFR 424.14(h)(1)(iii). Therefore, unless the petition provides credible new information, or identifies errors or provides a credible new analysis, we may find that the petition does not present substantial information indicating that the petitioned action may by warranted. Below, we address the main points made by the petitioners, including the purportedly new information based on Brennan *et al.* (2019), and identify where this information was considered in NMFS's

2016 DPS assessment and petition finding.

According to the petitioners, Brennan *et al.* (2019) provides additional support to the DPS discreteness criterion by demonstrating that the seals are lifelong residents of the lake and rely mostly on lake-produced resources, even when spawning salmon are available (CBD 2020, p.19). In our 2016 DPS assessment and petition finding, NMFS considered genetic analyses by Burns *et al.* (2013) indicating that the harbor seals in Iliamna Lake are a small, isolated population: ''Together, the mtDNA and nDNA results are consistent with a small, isolated population in Iliamna Lake. The substantial differentiation in allele frequencies between the lake and EBB [Eastern Bristol Bay] seals is consistent with isolation, *i.e.,* lack of breeding dispersal into the lake'' (Boveng *et al.,* 2016, p. 24). This information led to our conclusion that based on the best available genetic information, the seals in Iliamna Lake meet the DPS discreteness criterion by being markedly separated from harbor seals in Bristol Bay (*i.e.,* are born and live in the lake) and, by extension, the remainder of the taxon (81 FR 81082, November 17, 2016). The conclusion of Brennan *et al.* (2019) that the seals are lifelong residents in the lake is therefore not new information. In reference to the petitioner's conclusion that the seals in the lake rely mostly on lake-produced resources, even when spawning salmon are available (CBD 2020, p.19), the 2016 DPS assessment (Boveng *et al.* 2016, p. 12—15) and the petition finding (81 FR 81080, November 17, 2016) both considered data from scat samples (Hauser *et al.* 2008), and stomach contents and stable isotope analysis (Burns *et al.* 2013) that demonstrated the seals' simultaneous utilization of both freshwater and salmonid species. Additionally, the teeth of harbor seals in Iliamna Lake that were used for Brennan *et al.* (2019) isotope analyses were from a subset of the same seals included in the genetic analyses by Burns *et al.* (2013), which we considered when we concluded in our 2016 DPS assessment and finding that the seals in the lake are a discrete population (Boveng *et al.* 2016, p. 24; 81 FR 81082, November 17, 2016). Therefore, we conclude that the petition does not present new information on the isolated nature of the harbor seals in Iliamna Lake and the discreteness of the population.

With respect to the DPS significance criterion, the petitioners assert that the harbor seals in Iliamna Lake are significant to the broader Pacific harbor seal taxon because of local adaptations resulting from their persistence in a unique ecological setting, including phenotypic (*e.g.,* larger size, darker coloration, and finer pelage) and behavioral adaptations (*e.g.,* use of under-ice spaces), and the development of a ''unique foraging ecology'' (CBD 2020, p. 18–19).

NMFS considered the evidence for phenotypic adaptations in both the 2016 DPS assessment and petition finding. With respect to the larger size described by CBD, Boveng *et al.* (2016, p. 38) considered that: ''In some species, variation in body size may indicate true adaptation to various ecological setting . . .'' and ultimately concluded that for the harbor seals in Iliamna Lake: ''. . . higher growth rates and/or larger average size could simply reflect greater availability of energy and nutrients, lower disease or parasite burdens, or other factors that would not confer any particular biological significance to the lake population.'' For the observation that pelage color and texture differed from marine seals, Boveng *et al.* (2016, p. 38–39) considered local and traditional knowledge and observations from other freshwater seals and concluded: ''. . . we were unable to identify any evidence that this is a result of anything other than an effect of fresh vs. salt water on seal coats; we found no evidence that this represents a heritable trait or adaptation that would convey significance.'' The 2016 petition finding came to similar conclusions on all of the proposed phenotypic adaptations, indicating that the variances observed in taste, body size, and pelage traits of harbor seals in Iliamna Lake are likely the result of seasonal diet, individual variation, and normal phenotypic plasticity rather than the result of physiological distinctions from harbor seals in nearby marine environments (81 FR 81079, November 17, 2016). No new information is presented in the current petition that offers additional support for the existence of phenotypic adaptations attributable to the seals residing in Iliamna Lake.

The petition asserts that the harbor seals in Iliamna Lake display novel use of under-ice spaces that contributes to the population's persistence and survival and is therefore an adaptation that may be of importance to the taxon as a whole (CBD 2020, p. 18). In the 2016 DPS assessment, Boveng *et al.* (2016, p. 39) observed that it ''is not clear whether this behavior represents a true adaptation or is simply a response to conditions that would be exploited by other harbor seals if they encountered those same conditions'' and that ''[a] seal introduced to the lake from the marine population might well survive by learning the requisite behaviors from conspecifics in the lake population.'' Based on the available information, they ultimately concluded: ''Although the way that harbor seals in Iliamna Lake cope with the extensive ice cover in winter is unusual for the species, they do not seem to have adopted breeding, whelping, or pup rearing behaviors that would be unusual for the species'' (Boveng *et al.* 2016, p. 39). Thus, the information presented on this behavioral adaptation in the current petition is not new.

The petitioners also discuss what they assert is new information about a ''unique foraging ecology'' among harbor seals in Iliamna Lake. As stated by CBD (2020, p. 1; adapted from Brennan *et al.* 2019): ''. . . the foraging ecology of Iliamna Lake seals differs in several respects from other eastern North Pacific harbor seal populations. Iliamna Lake seals rely heavily on freshwater fish throughout the year, even during periods of abundant sockeye salmon. The seals also undergo a developmental shift whereby their use of salmon increases as they mature.'' Brennan *et al.* (2019) further states that Iliamna seals ''rely on lake resources and consistently display an ontogenetic shift from a diet composed principally of lake resources to one that exploits seasonally abundant salmon. Both imply locally adapted abilities to exploit a food web unlike that of any other *P. v. richardii* population across the Eastern Pacific.''

The components of the ''unique foraging ecology'' scenario described by the petitioner, in which the harbor seals in Iliamna Lake rely heavily on freshwater prey even in the presence of seasonally available resources and shift later in life to greater reliance on exogenous (marine-produced) food in the form of returning sockeye salmon spawners, were considered in the 2016 DPS assessment and petition finding. Results of diet studies from both Iliamna Lake and marine harbor seals were considered in our 2016 petition finding, leading to the conclusion that the seals in the lake opportunistically feed on both freshwater and marine prey, a pattern that is consistent with harbor seals foraging on a diversity of fish and invertebrate prey across their range (81 FR 81080, November 17, 2016). The finding additionally considered information from a study by Burns *et al.* (2013) that provided further support that the harbor seals in Iliamna Lake consume freshwater species (*e.g.,* threespine stickleback and Arctic grayling or lake whitefish) when salmonids are present and that the variety and types of prey items in the

stomachs of the seals sampled further reflects the generally opportunistic feeding habitats of harbor seals and does not suggest use of unusual or unique prey based on their lake habitat (81 FR 81083, November 17, 2016).

Information addressing the second component of the ''unique foraging ecology,'' the increased reliance on seasonal salmon, was considered by the BRT in the 2016 DPS assessment: ''The finding that harbor seals in Iliamna Lake predominantly fed on adult salmon during the summer period of high sockeye abundance corroborates previous studies (Brown and Mate 1983, Payne and Selzer 1989, Olesiuk 1993, Iverson *et al.* 1997) showing that harbor seal populations feed on seasonally abundant prey wherever they occur (Hauser *et al.* 2008)'' (Boveng *et al.* 2016, p. 21–22). The November 17, 2016 petition finding also noted that the seals in Iliamna Lake had similar seasonal concentrations of salmon in their diets as harbor seals from other freshwater systems (81 FR 81080).

The petitioner's characterization of a ''unique foraging ecology'' for harbor seals in Iliamna Lake does not constitute new information because NMFS previously considered these same foraging behaviors in the 2016 DPS assessment and petition finding, concluding that the foraging behaviors of these seals are consistent with the natural history of harbor seals, particularly the Pacific subspecies *Phoca vitulina richardii,* that is widely understood by harbor seal experts and well documented in the literature. The petition describes an age-related shift in diet, referred to as an ontogenetic shift, which is a widespread behavior among predator species that grow as they develop and are able to utilize resources differently as they increase in size (*e.g.,* Werner and Gilliam 1984). Harbor seals in general are known to exhibit size-related prey selection, exploiting small, easy-to-catch prey until they attain the size and proficiency needed to catch and consume larger prey, such as adult salmonids. Therefore, the age-related shift in diet described by the petitioners for the harbor seals in Iliamna Lake (based on Brennan *et al.* 2019) merely highlights well-known behavior and, as a result, would not lead a reasonable person conducting an impartial scientific review to conclude that this population might be significant in relation to the broader taxon such that the action proposed in the petition may be warranted despite NMFS's 2016 DPS assessment and petition finding.

The petitioners further assert that in addition to being a local adaptation, the ''unique foraging ecology'' also has evolutionary significance for the broader taxon: ''The Iliamna Lake seal's unique foraging ecology has significance for the evolutionary potential of the broader *P. v. richardii* taxon in a time of rapid change and increasing threats'' (CBD 2020, p. 20; based on Brennan et al. 2019). In the 2016 DPS assessment, the Biological Review Team (BRT) evaluated if there was evidence that persistence in an unusual setting had resulted in adaptations (*e.g.,* genetic or behavioral) in the harbor seals in Iliamna Lake that may be of significance to the broader taxon. ''Although there were genetic differences . . . those were more indicative of reduced genetic diversity in the lake population, rather than development of novel genes in response to the unusual habitat, and the genetic sampling remains rather inadequate for judging this'' (Boveng *et al.* 2016, p. iv). In the 2016 petition finding, NMFS concluded there was no evidence suggesting the harbor seals in Iliamna Lake had specific adaptations to their environment that would be beneficial to the taxon, and thus the persistence of the population in the lake is not significant to the subspecies *P. v. richardii:* (81 FR 81084, November 17, 2016). As discussed above, the petition does not provide any new genetic sampling or any other new information not previously considered to support the assertion that seals in Iliamna Lake have a ''unique foraging ecology.'' The petition therefore presents no new evidence of adaptations in the harbor seals in Iliamna Lake that may support a finding that they are evolutionarily significant to the broader taxon, per the significance criterion of our DPS policy (61 FR 4722, February 7, 1996).

In reference to the other significance criteria, the petition asserts that the harbor seals in Iliamna Lake are significant to the greater taxon because the loss of the Iliamna Lake population would result in a significant gap in the range of the taxon, and the genetic characteristics of the population differ markedly from marine harbor seals (CBD 2020, p. 21–22). The 2016 DPS assessment and the petition finding discussed that the taxon is broadly distributed, ranging from Alaska to the Baja Peninsula, and that the estimated number of seals in Iliamna Lake accounts for roughly 0.1 percent of the total population (Boveng *et al.* 2016, p. 40; 81 FR 81084–85, November 17, 2016). Additionally, Boveng *et al.* (2016, p. 40) stated: ''Because Iliamna Lake is not a part of the continuous coastal range of the marine population of harbor seals, the loss of the Iliamna Lake segment could not produce a gap in that range, and therefore would not reduce or preclude dispersal between segments of the marine population.''

With regard to the genetic characteristics of the population differing from marine harbor seals, the petitioners state that the harbor seals in Iliamna Lake have been there long enough for genetic novelty to arise and that the difference in behavior, morphology, ecology, and habitat between the seals in the lake and marine harbor seals provides evidence of genetic novelty (CBD 2020, 22–23). Taking the genetic evidence previously discussed into account, Boveng *et al.* (2016, p. 43) stated: ''. . . it cannot be concluded with any confidence that this population has been isolated in the lake long enough for there to be a high likelihood of mutations at other genetic loci that could be selective and have adaptive function but not be outwardly apparent in the morphology or behavior of the seals. On the contrary, the evidence available thus far suggests that genetic diversity has been lost rather than gained since isolation of this population.'' The petition finding came to a similar conclusion that the genetic characteristics (*i.e.,* mtDNA haplotype) of the seals in Iliamna Lake are not markedly different from those found in Bristol Bay and therefore are not significant to the taxon as a whole (81 FR 81085, November 17, 2016). Overall, the petition does not provide any new information regarding the significance criterion that would lead a reasonable person conducting an impartial scientific review to conclude that the petitioned action may be warranted despite NMFS's the 2016 DPS assessment and petition finding.

Petition Finding

We thoroughly reviewed the information presented in the petition and found that it does not provide any new information that was not already considered in our 2016 DPS assessment and petition finding that the harbor seals in Iliamna Lake do not meet the criteria of a DPS, and therefore do not constitute an entity eligible for listing under the ESA. As such, we find that the petition does not present substantial scientific or commercial information indicating that the petitioned action may be warranted.

References Cited

A complete list of all references is available upon request from the Protected Resources Division of the NMFS Alaska Regional Office in Juneau, Alaska (see **ADDRESSES**).

Authority: The authority for this action is the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Dated: June 24, 2021.

Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

[FR Doc. 2021–13841 Filed 6–28–21; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

Patent and Trademark Office

Agency Information Collection Activities; Submission to the Office of Management and Budget (OMB) for Review and Approval; Comment Request; Recording Assignments

The United States Patent and Trademark Office (USPTO) will submit the following information collection request to the Office of Management and Budget (OMB) for review and clearance in accordance with the Paperwork Reduction Act of 1995, on or after the date of publication of this notice. The USPTO invites comment on this information collection renewal, which helps the USPTO assess the impact of its information collection requirements and minimize the public's reporting burden. Public comments were previously requested via the **Federal Register** on April 16, 2021 during a 60-day comment period. This notice allows for an additional 30 days for public comments.

Agency: United States Patent and Trademark Office, Department of Commerce.

Title: Recording Assignments.

OMB Control Number: 0651–0027.

Form Numbers:

- PTO–1594 (Trademark Assignment Recordation Cover Sheet)
- PTO–1595 (Patent Assignment Recordation Cover Sheet)

Type of Review: Extension and revision of a currently approved information collection.

Estimated Number of Respondents: 649,880 respondents per year.

Estimated Number of Responses: 649,880 responses per year.

Estimated Time per Response: The USPTO estimates that it will take the public approximately 30 minutes (.5 hours) to gather the necessary information, create the document, and submit the completed item to the USPTO.

Estimated Total Annual Respondent Burden Hours: 324,941 hours.

Estimated Total Annual Non-Hour Cost Burden: $3,968,075.

Needs and Uses: This collection of information is required by 35 U.S.C. 261 and 262 for patents and 15 U.S.C. 1057 and 1060 for trademarks. These statutes authorize the United States Patent and Trademark Office (USPTO) to record patent and trademark assignment documents, including transfers of properties (*i.e.,* patents and trademarks), liens, licenses, assignments of interest, security interests, mergers, and explanations of transactions or other documents that record the transfer of ownership of a particular patent or trademark property from one party to another. Assignments are recorded for applications, patents, and trademark registrations.

The USPTO administers these statutes through 37 CFR 2.146, 2.171, and 37 CFR 3. These regulations permit the public, corporations, other federal agencies, and Government-owned or Government-controlled corporations to submit patent and trademark assignment documents and other documents related to title transfers to the USPTO to be recorded. In accordance with 37 CFR 3.54, the recording of an assignment document by the USPTO is an administrative action and not a determination of the validity of the document or of the effect that the document has on the title to an application, patent, or trademark.

In order to record an assignment document, the respondent must submit an appropriate cover sheet along with copies of the assignment document to be recorded. Once the assignment documents are recorded, they are available for public inspection. The public uses these records to conduct ownership and chain-of-title searches. The public may view these records either at the USPTO Public Search Facility or at the National Archives and Records Administration, depending on the date they were recorded. The public may also search patent and trademark assignment information online through the USPTO website. The only exceptions are those documents that are sealed under secrecy orders according to 37 CFR 3.58 or related to unpublished patent applications maintained in confidence under 35 U.S.C. 122 and 37 CFR 1.14.

This information collection covers assignments submitted by paper and online through the use of the Electronic Patent Assignment System (EPAS) and the Electronic Trademark Assignment System (ETAS). The electronic systems allow customers to complete the required cover sheet information online using web-based forms and then attach the electronic assignment documents to be submitted for recordation. The electronic systems are available through the USPTO website at *https://epas.uspto.gov/* and *https://etas.uspto.gov/*.

Affected Public: Private sector; individuals or households.

Frequency: On occasion.

Respondent's Obligation: Required to obtain or retain benefits.

This information collection request may be viewed at *www.reginfo.gov.* Follow the instructions to view Department of Commerce, USPTO information collections currently under review by OMB.

Written comments and recommendations for this information collection should be submitted within 30 days of the publication of this notice on the following website *www.reginfo.gov/public/do/PRAMain.* Find this particular information collection by selecting ''Currently under 30-day Review—Open for Public Comments'' or by using the search function and entering either the title of the information collection or the OMB Control Number 0651–0027.

Further information can be obtained by:

- *Email: InformationCollection@uspto.gov.* Include ''0651–0027 information request'' in the subject line of the message.
- *Mail:* Kimberly Hardy, Office of the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313–1450.

Kimberly Hardy,

Information Collections Officer, Office of the Chief Administrative Officer, United States Patent and Trademark Office.

[FR Doc. 2021–13809 Filed 6–28–21; 8:45 am]

BILLING CODE 3510–16–P

DEPARTMENT OF ENERGY

Environmental Management Site-Specific Advisory Board, Nevada

AGENCY: Office of Environmental Management, Department of Energy.

ACTION: Notice of open in-person/virtual hybrid meeting.

SUMMARY: This notice announces an in-person/virtual hybrid meeting of the Environmental Management Site-Specific Advisory Board (EM SSAB), Nevada. The Federal Advisory Committee Act requires that public notice of this meeting be announced in the **Federal Register**.

DATES: Wednesday, July 21, 2021; 4:00 p.m.–7:35 p.m. PT.

The opportunity for oral public comment for those attending in-person

is at 4:10 p.m. PT and written public comment received prior to the meeting will be read into the record.

This time is subject to change; please contact the Nevada Site Specific Advisory Board (NSSAB) Administrator (below) for confirmation of time prior to the meeting.

ADDRESSES: This hybrid meeting will be open to the public virtually via Microsoft Teams only. To attend, please contact the NSSAB Administrator (below) no later than 4:00 p.m. PT on Monday, July 19, 2021.

Board members, Department of Energy (DOE) representatives, agency liaisons, and support staff will participate in-person, strictly following COVID–19 precautionary measures, at: Molasky Building, 15th Floor Conference Room, 100 North City Parkway, Las Vegas, NV 89106.

FOR FURTHER INFORMATION CONTACT: Barbara Ulmer, NSSAB Administrator, by Phone: (702) 523–0894 or Email: *nssab@emcbc.doe.gov*.

SUPPLEMENTARY INFORMATION:

Purpose of the Board: The purpose of the Board is to make recommendations to DOE–EM and site management in the areas of environmental restoration, waste management, and related activities.

Tentative Agenda:

1. Interactive Public Information website—Work Plan Item #5
2. Public Access of EM History in Nevada—Work Plan Item #7

Public Participation: The in-person/online virtual hybrid meeting is open to the public virtually via Microsoft Teams only. Written statements may be filed with the Board by no later than 4:00 p.m. PT on Monday, July 19, 2021 or within seven days after the meeting by sending them to the NSSAB Administrator at the aforementioned email address. Oral comments may be given by in-person attendees during the aforementioned time. The Deputy Designated Federal Officer is empowered to conduct the meeting in a fashion that will facilitate the orderly conduct of business. Individuals wishing to make or submit public comments should follow as directed above.

Minutes: Minutes will be available by writing or calling Barbara Ulmer, NSSAB Administrator, U.S. Department of Energy, EM Nevada Program, 100 North City Parkway, Suite 1750, Las Vegas, NV 89106; Phone: (702) 523–0894. Minutes will also be available at the following website: *http://www.nnss.gov/NSSAB/pages/MM_FY21.html*.

Signed in Washington, DC on June 24, 2021.

LaTanya Butler,

Deputy Committee Management Officer.

[FR Doc. 2021–13847 Filed 6–28–21; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF ENERGY

Environmental Management Site-Specific Advisory Board, Savannah River Site

AGENCY: Office of Environmental Management, Department of Energy.

ACTION: Notice of open virtual meeting.

SUMMARY: This notice announces an online virtual meeting of the Environmental Management Site-Specific Advisory Board (EM SSAB), Savannah River Site. The Federal Advisory Committee Act requires that public notice of this online virtual meeting be announced in the **Federal Register**.

DATES: Monday, July 26, 2021; 1:00 p.m.–5:00 p.m. ET.

ADDRESSES: Online Virtual Meeting. To attend, please send an email to: *srscitizensadvisoryboard@srs.gov* by no later than 4:00 p.m. ET on Friday, July 23, 2021.

FOR FURTHER INFORMATION: Amy Boyette, Office of External Affairs, U.S. Department of Energy (DOE), Savannah River Operations Office, P.O. Box A, Aiken, SC, 29802; Phone: (803) 952–6120.

SUPPLEMENTARY INFORMATION:

Purpose of the Board: The purpose of the Board is to make recommendations to DOE–EM and site management in the areas of environmental restoration, waste management, and related activities.

Tentative Agenda:

—Chair Update
—Agency Updates
—Budget Update and Budget Priorities List
—Savannah River Ecology Laboratory Update
—Board Discussion on Budget Priority List Letter to DOE
—Reading of Public Comments
—Voting: Budget Priority List Letter to DOE

Public Participation: The online virtual meeting is open to the public. Written statements may be filed with the Board via email either before or after the meeting as there will not be opportunities for live public comment during this online virtual meeting. Public comments received by no later than 4:00 p.m. ET on Friday, July 23, 2021, will be read aloud during the virtual meeting. Comments will be accepted after the meeting, by no later than 4:00 p.m. ET on Monday, August 2, 2021. Please submit comments to *srscitizensadvisoryboard@srs.gov*. The Deputy Designated Federal Officer is empowered to conduct the meeting in a fashion that will facilitate the orderly conduct of business. Individuals wishing to submit public comments should email them as directed above.

Minutes: Minutes will be available by writing or calling Amy Boyette at the address or telephone number listed above. Minutes will also be available at the following website: *https://cab.srs.gov/srs-cab.html*.

Signed in Washington, DC on June 24, 2021.

LaTanya Butler,

Deputy Committee Management Officer.

[FR Doc. 2021–13846 Filed 6–28–21; 8:45 am]

BILLING CODE 6450–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. IC21–15–000]

Commission Information Collection Activities (FERC–716); Comment Request; Extension

AGENCY: Federal Energy Regulatory Commission.

ACTION: Notice of information collection and request for comments.

SUMMARY: In compliance with the requirements of the Paperwork Reduction Act of 1995, the Federal Energy Regulatory Commission (Commission or FERC) is soliciting public comment on a renewal of currently approved information collection FERC 716 (Good Faith Requests for Transmission Service and Good Faith Responses by Transmitting Utilities Under Sections 211(a) and 213(a) of the Federal Power Act (FPA)), which will be submitted to the Office of Management and Budget (OMB) for review.

DATES: Comments on the collection of information are due July 29, 2021.

ADDRESSES: Send written comments on FERC–716 to OMB through *www.reginfo.gov/public/do/PRAMain.* Attention: Federal Energy Regulatory Commission Desk Officer. Please identify the OMB Control Number (1902–0170) in the subject line of your comments. Comments should be sent within 30 days of publication of this

notice to *www.reginfo.gov/public/do/PRAMain.*

Please submit copies of your comments to the Commission. You may submit copies of your comments (identified by Docket No. IC21–15–000) by one of the following methods:

Electronic filing through *http://www.ferc.gov,* is preferred.

- Electronic Filing: Documents must be filed in acceptable native applications and print-to-PDF, but not in scanned or picture format.
- For those unable to file electronically, comments may be filed by USPS mail or by hand (including courier) delivery.

○ Mail via U.S. Postal Service Only: Addressed to: Federal Energy Regulatory Commission, Secretary of the Commission, 888 First Street NE, Washington, DC 20426.

○ Hand (including courier) delivery: Deliver to: Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, MD 20852.

Instructions: OMB submissions must be formatted and filed in accordance with submission guidelines at *www.reginfo.gov/public/do/PRAMain.* Using the search function under the ''Currently Under Review'' field, select Federal Energy Regulatory Commission; click ''submit,'' and select ''comment'' to the right of the subject collection. *FERC submissions* must be formatted and filed in accordance with submission guidelines at: *http://www.ferc.gov.* For user assistance, contact FERC Online Support by email at *ferconlinesupport@ferc.gov,* or by phone at: (866) 208–3676 (toll-free).

Docket: Users interested in receiving automatic notification of activity in this docket or in viewing/downloading comments and issuances in this docket may do so at *https://www.ferc.gov/ferc-online/overview.*

FOR FURTHER INFORMATION CONTACT: Ellen Brown may be reached by email at *DataClearance@FERC.gov,* telephone at (202) 502–8663.

SUPPLEMENTARY INFORMATION:

Title: FERC–716, Good Faith Requests for Transmission Service and Good Faith Responses by Transmitting Utilities Under Sections 211(a) and 213(a) of the Federal Power Act (FPA).

OMB Control No.: 1902–0170.

Type of Request: Three-year extension of the FERC–716 information collection requirements with no changes to the current reporting requirements.

Abstract: The Commission uses the information collected under the requirements of FERC–716 to implement the statutory provisions of sections 211 and section 213 of the Federal Power Act as amended and added by the Energy Policy Act 1992. FERC–716 also includes the requirement to file a section 211 request if the negotiations between the transmission requestor and the transmitting utility are unsuccessful. For the initial process, the information is not filed with the Commission. However, the request and response may be analyzed as a part of a section 211 action. The Commission may order transmission services under the authority of FPA 211.

The Commission's regulations in the Code of Federal Regulations (CFR), 18 CFR 2.20, provide standards by which the Commission determines if and when a valid good faith request for transmission has been made under section 211 of the FPA. By developing the standards, the Commission sought to encourage an open exchange of data with a reasonable degree of specificity and completeness between the party requesting transmission services and the transmitting utility. As a result, 18 CFR 2.20 identifies 12 components of a good faith estimate and 5 components of a reply to a good faith request. The 60-day **Federal Register** Notice [1] published on April 21, 2021 and no comments were received during the comment period.

Type of Respondents: Transmission Requestors and Transmitting Utilities.

Estimate of Annual Burden [2]: The Commission estimates the annual public reporting burden for the information collection as:

FERC–716 (GOOD FAITH REQUESTS FOR TRANSMISSION SERVICE AND GOOD FAITH RESPONSES BY TRANSMITTING UTILITIES UNDER SECTIONS 211(a) AND 213(a) OF THE FEDERAL POWER ACT (FPA))

	Number of respondents	Annual number of responses per respondent	Total number of responses	Average burden & cost per response [3]	Total annual burden hours & total annual cost ($)	Cost per respondent ($)
	(1)	(2)	(1) * (2) = (3)	(4)	(3) * (4) = (5)	(5) ÷ (1)
Information exchange between parties.	6	1	6	100 hrs.; $8,300	600 hrs.; $49,800.	$8,300
Application submitted to FERC if parties' negotiations are unsuccessful.	6	1	6	2.5 hrs.; 207.50	15 hrs.; 1,245 ...	207.50
Total	.....	.....	12	.....	615 hrs.; 51,045	8,507.50

Comments: Comments are invited on: (1) Whether the collection of information is necessary for the proper performance of the functions of the Commission, including whether the information will have practical utility; (2) the accuracy of the agency's estimate of the burden and cost of the collection of information, including the validity of the methodology and assumptions used; (3) ways to enhance the quality, utility and clarity of the information collection; and (4) ways to minimize the burden of the collection of information on those who are to respond, including the use of automated collection techniques or other forms of information technology.

Dated: June 23, 2021.

Kimberly D. Bose,

Secretary.

[FR Doc. 2021–13820 Filed 6–28–21; 8:45 am]

BILLING CODE 6717–01–P

[1] 86 FR 20685.

[2] Burden is defined as the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. For further explanation of what is included in the information collection burden, refer to 5 Code of Federal Regulations 1320.3.

[3] The estimates for cost per response are derived using the following formula: Average Burden Hours per Response × $83/hour = Average Cost per Response. The cost per hour figure is the FERC 2020 average salary plus benefits. Subject matter experts found that industry employment costs closely resemble FERC's regarding the FERC–716 information collection.

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. IC21–33–000]

Commission Information Collection Activities (FERC–566); Consolidated Comment Request; Extension

AGENCY: Federal Energy Regulatory Commission.

ACTION: Notice of information collection and request for comments.

SUMMARY: In compliance with the requirements of the Paperwork Reduction Act of 1995, the Federal Energy Regulatory Commission (Commission or FERC) is soliciting public comment on the currently approved information collections, FERC–566 (Annual Report of a Utility's 20 Largest Purchasers), which will be submitted to the Office of Management and Budget (OMB) for a review of this request for extension.

DATES: Comments on the collections of information are due August 30, 2021.

ADDRESSES: You may submit copies of your comments (identified by Docket No. IC21–33–000) on FERC–566 by one of the following methods: Electronic filing through *http://www.ferc.gov* is preferred.

- *Electronic Filing:* Documents must be filed in acceptable native applications and print-to-PDF, but not in scanned or picture format.
- For those unable to file electronically, comments may be filed by USPS mail or by hand (including courier) delivery:
  - *Mail via U.S. Postal Service Only:* Addressed to: Federal Energy Regulatory Commission, Secretary of the Commission, 888 First Street NE, Washington, DC 20426.
  - *Hand (including courier) delivery:* Deliver to: Federal Energy Regulatory Commission, 12225 Wilkins Avenue, Rockville, MD 20852.

Instructions: All submissions must be formatted and filed in accordance with submission guidelines at: *http://www.ferc.gov.* For user assistance, contact FERC Online Support by email at *ferconlinesupport@ferc.gov,* or by phone at (866) 208–3676 (toll-free).

Docket: Users interested in receiving automatic notification of activity in this docket or in viewing/downloading comments and issuances in this docket may do so at *http://www.ferc.gov.*

FOR FURTHER INFORMATION CONTACT: Ellen Brown may be reached by email at *DataClearance@FERC.gov,* or by telephone at (202) 502–8663.

SUPPLEMENTARY INFORMATION:

Title: FERC–566 (Annual Report of a Utility's 20 Largest Purchasers).

OMB Control No.: 1902–0114.

Type of Request: Three-year extension of the FERC–566 information collection requirements with no revisions to the current requirements.

Abstract: Section 305(c) of the Federal Power Act (FPA),[1] mandates federal oversight and approval of certain electric corporate activities to ensure that neither public nor private interests are adversely affected. The FPA prescribes information filing requirements to achieve this goal. These filing requirements are found at 18 CFR 131.31, and serve as the basis for FERC–566.

FERC–566 implements FPA requirements that each public utility annually publishes a list of the 20 purchasers which purchased the largest annual amounts of electric energy sold by such public utility during any of the three previous calendar years. The public disclosure of this information provides the information necessary to determine whether an interlocked position is with any of the 20 largest purchasers of electric energy.

Type of Respondents: Public utilities.

Estimate of Annual Burden: The Commission estimates 321 responses annually, and 4 hours and $332 per response. The total estimated burdens per year are 1,284 hours and $106,572. These burdens are itemized in the following table:

A. Number of respondents	B. Annual number of responses per respondent	C. Total number of responses (Column A × Column B)	D. Average burden & cost per response [2]	E. Total annual burden hours & total annual cost (Column C × Column D)	F. Cost per respondent ($) (Column E ÷ Column A)
321	1	321	4 hrs.; $348	1,284 hrs.; $111,708	$348

Comments are invited on: (1) Whether the collection of information is necessary for the proper performance of the functions of the Commission, including whether the information will have practical utility; (2) the accuracy of the agency's estimate of the burden and cost of the collection of information, including the validity of the methodology and assumptions used; (3) ways to enhance the quality, utility and clarity of the information collection; and (4) ways to minimize the burden of the collection of information on those who are to respond, including the use of automated collection techniques or other forms of information technology.

Dated: June 23, 2021.

Kimberly D. Bose,

Secretary.

[FR Doc. 2021–13822 Filed 6–28–21; 8:45 am]

BILLING CODE 6717–01–P

ENVIRONMENTAL PROTECTION AGENCY

[FRL–10025–36–OP]

National Environmental Justice Advisory Council; Notification for a Virtual Public Meeting.

AGENCY: Environmental Protection Agency.

ACTION: Notification for a public meeting.

SUMMARY: Pursuant to the Federal Advisory Committee Act (FACA), the U.S. Environmental Protection Agency (EPA) hereby provides notice that the National Environmental Justice Advisory Council (NEJAC) will meet on the dates and times described below. The meeting is open to the public. Members of the public are encouraged to provide comments relevant to the specific issues being considered by the NEJAC. For additional information about registering to attend the meeting or to provide public comment, please

[1] 16 U.S.C. 825d.

[2] Commission staff estimates that the average industry hourly cost for this information collection is approximated by the current FERC 2021 average hourly costs for wages and benefits, *i.e.,* $87.00/hour.

see ''Registration'' under **SUPPLEMENTARY INFORMATION**. Pre-registration is required.

DATES: The NEJAC will hold a virtual public meeting over two (2) days on Wednesday, August 18, 2021, and Thursday, August 19, 2021, from approximately 3:00 p.m. to 7:00 p.m., Eastern Daylight Time each day. A public comment period relevant to the specific issues will be considered by the NEJAC during the meeting (see **SUPPLEMENTARY INFORMATION**). Members of the public who wish to participate during the public comment period must pre-register by 11:59 p.m., Eastern Daylight Time, one (1) week prior to the start of the meeting date.

FOR FURTHER INFORMATION CONTACT: Karen L. Martin, NEJAC Designated Federal Officer, U.S. EPA; please send via email to: *nejac@epa.gov;* or contact at telephone: (202) 564–0203. Additional information about the NEJAC is available at *https://www.epa.gov/environmentaljustice/national-environmental-justice-advisory-council.*

SUPPLEMENTARY INFORMATION: The meeting discussion will focus on several topics including, but not limited to, the discussion and deliberation of work group activity and recommendations to the EPA Administrator.

The Charter of the NEJAC states that the advisory committee will provide independent advice and recommendations to the EPA Administrator about broad, crosscutting issues related to environmental justice. The NEJAC's efforts will include evaluation of a broad range of strategic, scientific, technological, regulatory, community engagement and economic issues related to environmental justice.

Registration: Individual registration is required for the virtual public meeting. At this meeting, a single registration submission will provide access to both days of the public meeting. Information on how to register is located at *https://usepa.zoomgov.com/webinar/register/WN_g1xjk0cbSBCw7hKZurpMCA.* Registration for the meetings is available through the scheduled end time of the meeting day. Registration to speak during the public comment will close at 11:59 p.m., Eastern Daylight Time, one (1) week prior to meeting date. When registering, please provide your name, organization, city and state, and email address for follow up. Please also indicate whether you would like to provide public comment during the meeting, and whether you are submitting written comments at time of registration.

A. Public Comment

Every effort will be made to hear from as many registered public commenters during the time specified on the agenda. Individuals or groups making remarks during the public comment period will be limited to three (3) minutes. To accommodate the number of people who want to address the NEJAC, only one representative from each community, organization, or group will be allowed to speak. Submitting written comments for the record are strongly encouraged. The suggested format for individuals providing public comments is as follows: Name of speaker; name of organization/community; city and state; and email address; brief description of the concern, and what you want the NEJAC to advise EPA to do. Written comments can be submitted up to two (2) weeks after the meeting date. All written comments should use the webform at *https://www.epa.gov/environmentaljustice/forms/national-environmental-justice-advisory-council-nejac-public-comment.* To submit comments with additional materials, please send via email to: *nejac@epa.gov.*

B. Information About Services for Individuals With Disabilities or Requiring English Language Translation Assistance

For information about access or services for individuals requiring assistance, please contact Karen L. Martin, via email at: *nejac@epa.gov.* To request special accommodations for a disability or other assistance, please submit your request at least seven (7) working days prior to the meeting, to give EPA sufficient time to process your request. All requests should be sent to the email, listed in the **FOR FURTHER INFORMATION CONTACT** section.

Matthew Tejada,

Director, Office of Environmental Justice.

[FR Doc. 2021–13818 Filed 6–28–21; 8:45 am]

BILLING CODE 6560–50–P

FEDERAL COMMUNICATIONS COMMISSION

[OMB 3060–0170; FRS 34751]

Information Collection Being Reviewed by the Federal Communications Commission Under Delegated Authority

AGENCY: Federal Communications Commission.

ACTION: Notice and request for comments.

SUMMARY: As part of its continuing effort to reduce paperwork burdens, and as required by the Paperwork Reduction Act of 1995 (PRA), the Federal Communications Commission (FCC or Commission) invites the general public and other Federal agencies to take this opportunity to comment on the following information collection(s). Comments are requested concerning: Whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; the accuracy of the Commission's burden estimate; ways to enhance the quality, utility, and clarity of the information collected; ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology; and ways to further reduce the information collection burden on small business concerns with fewer than 25 employees.

The FCC may not conduct or sponsor a collection of information unless it displays a currently valid Office of Management and Budget (OMB) control number. No person shall be subject to any penalty for failing to comply with a collection of information subject to the PRA that does not display a valid OMB control number.

DATES: Written comments should be submitted on or before August 30, 2021. If you anticipate that you will be submitting comments but find it difficult to do so within the period of time allowed by this notice, you should advise the contacts below as soon as possible.

ADDRESSES: Direct all PRA comments to Cathy Williams, FCC, via email to *PRA@fcc.gov* and to *Cathy.Williams@fcc.gov.*

FOR FURTHER INFORMATION CONTACT: For additional information about the information collection, contact Cathy Williams at (202) 418–2918.

SUPPLEMENTARY INFORMATION:

OMB Control Number: 3060–0170.

Title: Section 73.1030, Notifications Concerning Interference to Radio Astronomy, Research and Receiving Installations.

Form Number: N/A.

Type of Review: Extension of a currently approved collection.

Respondents: Businesses or other for-profit entities.

Number of Respondents and Responses: 57 respondents; 57 responses.

Estimated Hours per Response: 0.5 hours.

Frequency of Response: On occasion reporting requirement; Third party disclosure requirement.

Total Annual Cost: $14,250.

Total Annual Burden: 29 hours.

Obligation To Respond: Required to obtain or retain benefits. The statutory authority for this collection is contained in Section 154(i) of the Communications Act of 1934, as amended.

Nature and Extent of Confidentiality: There is need for confidentiality required with this collection of information.

Privacy Impact Assessment(s): No impact(s).

Needs and Uses: The information collection requirements contained in 47 CFR 73.1030 state in order to minimize harmful interference at the National Radio Astronomy Observatory site located at Green, Pocahontas County, West Virginia, and at the Naval Radio Research Observatory at Sugar Grove, Pendleton County, West Virginia, a licensee proposing to operate a short-term broadcast auxiliary station pursuant to § 74.24, and any applicant for authority to construct a new broadcast station, or for authority to make changes in the frequency, power, antenna height, or antenna directivity of an existing station within the area bounded by 39°15′ N on the north, 78°30′ W on the east, 37°30′ N on the south, and 80°30′ W on the west, shall notify the Interference Office, National Radio Astronomy Observatory, P.O. Box 2, Green Bank, West Virginia 24944. Telephone: (304) 456–2011. The notification shall be in writing and set forth the particulars of the proposed station, including the geographical coordinates of the antenna, antenna height, antenna directivity if any, proposed frequency, type of emission and power. The notification shall be made prior to, or simultaneously with, the filing of the application with the Commission. After receipt of such applications, the FCC will allow a period of 20 days for comments or objections in response to the notifications indicated. If an objection to the proposed operation is received during the 20-day period from the National Radio Astronomy Observatory for itself, or on behalf of the Naval Radio Research Observatory, the FCC will consider all aspects of the problem and take whatever action is deemed appropriate.

(2) Any applicant for a new permanent base or fixed station authorization to be located on the islands of Puerto Rico, Desecheo, Mona, Vieques, and Culebra, or for a modification of an existing authorization which would change the frequency, power, antenna height, directivity, or location of a station on these islands and would increase the likelihood of the authorized facility causing interference, shall notify the Interference Office, Arecibo Observatory, HC3 Box 53995, Arecibo, Puerto Rico 00612, in writing or electronically, of the technical parameters of the proposal. Applicants may wish to consult interference guidelines, which will be provided by Cornell University. Applicants who choose to transmit information electronically should email to: *prcz@naic.edu.*

(i) The notification to the Interference Office, Arecibo Observatory shall be made prior to, or simultaneously with, the filing of the application with the Commission. The notification shall state the geographical coordinates of the antenna (NAD–83 datum), antenna height above ground, ground elevation at the antenna, antenna directivity and gain, proposed frequency and FCC Rule Part, type of emission, and effective radiated power.

(ii) After receipt of such applications, the Commission will allow the Arecibo Observatory a period of 20 days for comments or objections in response to the notification indicated. The applicant will be required to make reasonable efforts to resolve or mitigate any potential interference problem with the Arecibo Observatory and to file either an amendment to the application or a modification application, as appropriate. The Commission shall determine whether an applicant has satisfied its responsibility to make reasonable efforts to protect the Observatory from interference.

Federal Communications Commission.

Marlene Dortch,

Secretary, Office of the Secretary.

[FR Doc. 2021–13850 Filed 6–28–21; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL COMMUNICATIONS COMMISSION

[OMB 3060–0876; FR ID 35551]

Information Collection Being Submitted for Review and Approval to Office of Management and Budget

AGENCY: Federal Communications Commission.

ACTION: Notice and request for comments.

SUMMARY: As part of its continuing effort to reduce paperwork burdens, as required by the Paperwork Reduction Act (PRA) of 1995, the Federal Communications Commission (FCC or the Commission) invites the general public and other Federal Agencies to take this opportunity to comment on the following information collection. Pursuant to the Small Business Paperwork Relief Act of 2002, the FCC seeks specific comment on how it might ''further reduce the information collection burden for small business concerns with fewer than 25 employees.''

The Commission may not conduct or sponsor a collection of information unless it displays a currently valid Office of Management and Budget (OMB) control number. No person shall be subject to any penalty for failing to comply with a collection of information subject to the PRA that does not display a valid OMB control number.

DATES: Written comments and recommendations for the proposed information collection should be submitted on or before July 29, 2021.

ADDRESSES: Comments should be sent to *www.reginfo.gov/public/do/PRAMain.* Find this particular information collection by selecting ''Currently under 30-day Review—Open for Public Comments'' or by using the search function. Your comment must be submitted into *www.reginfo.gov* per the above instructions for it to be considered. In addition to submitting in *www.reginfo.gov* also send a copy of your comment on the proposed information collection to Nicole Ongele, FCC, via email to *PRA@fcc.gov* and to *Nicole.Ongele@fcc.gov.* Include in the comments the OMB control number as shown in the **SUPPLEMENTARY INFORMATION** below.

FOR FURTHER INFORMATION CONTACT: For additional information or copies of the information collection, contact Nicole Ongele at (202) 418–2991. To view a copy of this information collection request (ICR) submitted to OMB: (1) Go to the web page *http://www.reginfo.gov/public/do/PRAMain,* (2) look for the section of the web page called ''Currently Under Review,'' (3) click on the downward-pointing arrow in the ''Select Agency'' box below the ''Currently Under Review'' heading, (4) select ''Federal Communications Commission'' from the list of agencies presented in the ''Select Agency'' box, (5) click the ''Submit'' button to the right of the ''Select Agency'' box, (6) when the list of FCC ICRs currently under review appears, look for the Title of this ICR and then click on the ICR Reference Number. A copy of the FCC submission to OMB will be displayed.

SUPPLEMENTARY INFORMATION: As part of its continuing effort to reduce

paperwork burdens, as required by the Paperwork Reduction Act (PRA) of 1995 (44 U.S.C. 3501–3520), the FCC invited the general public and other Federal Agencies to take this opportunity to comment on the following information collection. Comments are requested concerning: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology. Pursuant to the Small Business Paperwork Relief Act of 2002, Public Law 107–198, see 44 U.S.C. 3506(c)(4), the FCC seeks specific comment on how it might ''further reduce the information collection burden for small business concerns with fewer than 25 employees.''

OMB Control Number: 3060–0876.

Title: Sections 54.703, USAC Board of Directors Nomination Process and Sections 54.719 through 54.725, Review of the Administrator's Decision.

Form Number(s): N/A.

Type of Review: Extension of a currently approved collection.

Respondents: Business or other for-profit entities and Not-for-profit institutions, and State, Local or Tribal Governments.

Number of Respondents and Responses: 557 respondents; 557 responses.

Estimated Time per Response: 20–32 hours.

Frequency of Response: On occasion reporting requirement.

Obligation To Respond: Voluntary. Statutory authority for this information collection is contained in 47 U.S.C. 151–154, 201–205, 218–220, 254, 303(r), 403 and 405.

Total Annual Burden: 17,680 hours.

Total Annual Cost: No cost.

Privacy Act Impact Assessment: No Impact(s).

Nature and Extent of Confidentiality: The Commission is not requesting that respondents submit confidential information to the FCC. However, respondents may request confidential treatment of their information under 47 CFR 0.459 of the Commission's rules.

Needs and Uses: The information in this collection is used by the Commission to select Universal Service Administrative Company (USAC) Board of Directors and to ensure that requests for review are filed properly to the Commission.

Section 54.703 states that industry and non-industry groups may submit to the Commission for approval nominations for individuals to be appointed to the USAC Board of Directors.

Sections 54.719 through 54.725 describes the procedures for Commission review of USAC decisions including the general filing requirements pursuant to which parties may file requests for review.

Federal Communications Commission.

Cecilia Sigmund,

Federal Register Liaison Officer, Office of the Secretary.

[FR Doc. 2021–13849 Filed 6–28–21; 8:45 am]

BILLING CODE 6712–01–P

FEDERAL DEPOSIT INSURANCE CORPORATION

Notice to All Interested Parties of Intent To Terminate Receiverships

Notice is hereby given that the Federal Deposit Insurance Corporation (FDIC or Receiver), as Receiver for the institutions listed below, intends to terminate its receivership for said institutions.

NOTICE OF INTENT TO TERMINATE RECEIVERSHIPS

Fund	Receivership Name	City	State	Date of appointment of receiver
10167	First Federal Bank of California	Los Angeles	CA	12/18/2009
10236	Midwest Bank And Trust Company	Elmwood Park	IL	05/14/2010

The liquidation of the assets for each receivership has been completed. To the extent permitted by available funds and in accordance with law, the Receiver will be making a final dividend payment to proven creditors.

Based upon the foregoing, the Receiver has determined that the continued existence of the receiverships will serve no useful purpose. Consequently, notice is given that the receiverships shall be terminated, to be effective no sooner than thirty days after the date of this notice. If any person wishes to comment concerning the termination of any of the receiverships, such comment must be made in writing, identify the receivership to which the comment pertains, and be sent within thirty days of the date of this notice to: Federal Deposit Insurance Corporation, Division of Resolutions and Receiverships, Attention: Receivership Oversight Department 34.6, 1601 Bryan Street, Dallas, TX 75201.

No comments concerning the termination of the above-mentioned receiverships will be considered which are not sent within this time frame.

(Authority: 12 U.S.C. 1819)

Federal Deposit Insurance Corporation.

Dated at Washington, DC, on June 23, 2021.

James P. Sheesley,

Assistant Executive Secretary.

[FR Doc. 2021–13792 Filed 6–28–21; 8:45 am]

BILLING CODE 6714–01–P

FEDERAL RESERVE SYSTEM

Change in Bank Control Notices; Acquisitions of Shares of a Bank or Bank Holding Company

The notificants listed below have applied under the Change in Bank Control Act (Act) (12 U.S.C. 1817(j)) and § 225.41 of the Board's Regulation Y (12 CFR 225.41) to acquire shares of a bank or bank holding company. The factors that are considered in acting on the applications are set forth in paragraph 7 of the Act (12 U.S.C. 1817(j)(7)).

The public portions of the applications listed below, as well as other related filings required by the Board, if any, are available for immediate inspection at the Federal Reserve Bank(s) indicated below and at the offices of the Board of Governors. This information may also be obtained on an expedited basis, upon request, by contacting the appropriate Federal Reserve Bank and from the Board's Freedom of Information Office at *https://www.federalreserve.gov/foia/request.htm.* Interested persons may express their views in writing on the

standards enumerated in paragraph 7 of the Act.

Comments regarding each of these applications must be received at the Reserve Bank indicated or the offices of the Board of Governors, Ann E. Misback, Secretary of the Board, 20th Street and Constitution Avenue, NW, Washington DC 20551–0001, not later than July 14, 2021.

A. Federal Reserve Bank of St. Louis (Holly A. Rieser, Manager) P.O. Box 442, St. Louis, Missouri 63166–2034. Comments can also be sent electronically to *Comments.applications@stls.frb.org*:

1. *The Combs Family Revocable Alton Bancshares Trust, Springfield, Missouri; Kendall L. Combs and Patricia A. Combs, as co-trustees, both of Hollister, Missouri; Randall G. Combs and Beckie D. Combs, both of Alton, Missouri; Michael and Sandra Combs Revocable Alton Bancshares Trust, Springfield, Missouri; Michael D. Combs and Sandra L Combs, as co-trustees, both of Walnut Shade, Missouri;* to retain voting shares of Alton Bancshares, Inc., and thereby indirectly retain voting shares of Alton Bank, both of Alton, Missouri, and First Community Bank of The Ozarks, Branson, Missouri.

B. Federal Reserve Bank of Minneapolis (Chris P. Wangen, Assistant Vice President), 90 Hennepin Avenue, Minneapolis, Minnesota 55480–0291:

1. *The Scott C. Johnson and Jan L. Johnson Trust, Scott C. Johnson and Jan L. Johnson, as co-trustees, all of Stillwater, Minnesota;* to become members of the Johnson Family Control Group, a group acting in concert, to acquire voting shares of Marine Bancshares, Inc., and thereby indirectly acquire voting shares of Security State Bank of Marine, both of Marine on St. Croix, Minnesota.

Board of Governors of the Federal Reserve System, June 24, 2021.

Michele Taylor Fennell,

Deputy Associate Secretary of the Board.

[FR Doc. 2021–13823 Filed 6–28–21; 8:45 am]

BILLING CODE P

GENERAL SERVICES ADMINISTRATION

[Notice–PBS–2021–02; Docket No. 2021–0002; Sequence No. 10]

Notice of Intent To Prepare an Environmental Assessment for the Calexico West Land Port of Entry Temporary Pedestrian Process Facility, Calexico, CA

AGENCY: Public Buildings Service (PBS), General Services Administration (GSA).

ACTION: Notice.

SUMMARY: Pursuant to the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality Regulations, and the GSA PBS NEPA Desk Guide, GSA is issuing this notice to advise the public that an Environmental Assessment(EA) will be prepared for the Temporary Pedestrian Process Facility at the Calexico West Land Port of Entry, Calexico, CA (Project).

DATES: Agencies and the public are encouraged to provide written comments regarding the scope of the EA. Comments must be received by July 30th.

ADDRESSES: Please submit written comments by either of the following methods:

- *Email: osmahn.kadri@gsa.gov.*
- *Postal Mail/Commercial Delivery:* ATTN: Ms. Bianca Rivera, 355 South Euclid Avenue, Suite 107, Tucson, AZ 85719.

FOR FURTHER INFORMATION CONTACT: Mr. Osmahn A. Kadri, NEPA Program Manager, General Services Administration, Pacific Rim Region, at 415–522–3617 or email *osmahn.kadri@gsa.gov.*

SUPPLEMENTARY INFORMATION:

Background

GSA intends to prepare an EA to analyze the potential impacts resulting from proposed construction of a temporary pedestrian processing facility to be used by the United States Customs and Border Protection.

The Project is located adjacent to the Historic Customs House at 340 East 1st Street, Calexico, California. The Project is proposed to provide a temporary pedestrian processing facility for use during the demolition of existing structures and construction of the new processing building while ensuring continued services to those utilizing the international crossing between the United States of American and Mexico.

The temporary facility is anticipated to be constructed on Heffernan Road, south of East 1st street, to the west of the Historic Customs House. The facility will require the acquisition of Heffernan Road, to the south of East 1st Street. The building will be approximately 8,804 square feet and include a fire lane to the west, pedestrian ramps leading to/from the building, and pedestrian pick-up and drop-off areas at the north side of the building. The interior building will include wait areas, administrative offices, property storage interview rooms, inspection areas, processing areas, and restrooms.

Alternatives Under Consideration

The EA will consider one Action Alternative (the Proposed Action) and the No Action Alternative. The Action Alternative would consist of the construction of the processing facility and associated infrastructure. The building would be constructed on a portion of Heffernan Avenue and the parking area to the west of the Customs House. Since the facility is temporary, there would be no change in personnel staffing at this port of entry. Construction is likely to impact parking and loading/unloading merchandise for the retail facility to the west of the proposed facility, as well as traffic flow along East 1st Street during construction.

Under the No Action Alternative, construction of the temporary facility would not occur.

Scoping Process

Scoping will be accomplished through public notifications in the *Calexico Chronicle,* social media announcements, and direct mail correspondence to appropriate federal, state, and local agencies; surrounding property owners; and private organizations and citizens who have previously expressed or are known to have an interest in the Project. The virtual scoping meeting will be held on July 13th, at 4:30 p.m., Pacific Standard Time at: *https://teams.microsoft.com/l/meetup-join/19%3ameeting_NDIwNzMyZTEtMDRhYy00NGI5LWJkNjEtODkxYTJhNjU2NWIx%40thread.v2/0?context=%7b%22Tid%22%3a%228aec2bf0-04af-4841-bcf6-bac6a58dd4ef%22%2c%22Oid%22%3a%221894920d-2cd7-4a1a-aa78-0ebeddc5bdf6%22%7d.*

The primary purpose of the scoping process is for the public to assist GSA

in determining the scope and content of the environmental analysis.

Russell Larson,

Director, Portfolio Management Division, Pacific Rim Region, Public Buildings Service.

[FR Doc. 2021–13828 Filed 6–28–21; 8:45 am]

BILLING CODE 6820–YF–P

GENERAL SERVICES ADMINISTRATION

[OMB Control No. 3090–0080; Docket No. 2021–0001; Sequence No. 3]

Submission for OMB Review; General Services Administration Acquisition Regulation; Contract Financing Final Payment, GSA Form 1142, Release of Claims

AGENCY: Office of Acquisition Policy, General Services Administration (GSA).

ACTION: Notice of request for public comments regarding an extension to an existing OMB clearance.

SUMMARY: Under the provisions of the Paperwork Reduction Act, the Regulatory Secretariat Division will be submitting to the Office of Management and Budget (OMB) a request to review and approve an extension of a previously approved information collection requirement of GSA Form 1142, Release of Claims, regarding final payment under construction and building services contract.

DATES: Submit comments on or before: July 29, 2021.

ADDRESSES: Written comments and recommendations for this information collection should be sent within 30 days of publication of this notice to *www.reginfo.gov/public/do/PRAMain.* Find this particular information collection by selecting ''Currently under Review—Open for Public Comments'' or by using the search function.

FOR FURTHER INFORMATION CONTACT: Bryon Boyer, Procurement Analyst, Office of Governmentwide Policy, by phone at 817–850–5580 or by email at *gsarpolicy@gsa.gov.*

SUPPLEMENTARY INFORMATION:

A. Purpose

The General Services Administration Acquisition Regulation (GSAR) clause 552.232–72 requires construction and building services contractors to submit a release of claims before final payment is made to ensure contractors are paid in accordance with their contract requirements and for work performed. GSA Form 1142, Release of Claims is used to achieve uniformity and consistency in the release of claims process.

B. Annual Reporting Burden

Respondents: 1,330.
Responses per Respondent: 1.
Annual Responses: 1,330.
Hours per Response: 0.10.
Total Burden Hours: 133.

C. Public Comments

A notice published in the **Federal Register** at 86 FR 20159 on April 16, 2021. No comments were received.

Obtaining Copies of Proposals: Requesters may obtain a copy of the information collection documents from the Regulatory Secretariat Division by calling 202–501–4755 or emailing *GSARegSec@gsa.gov.* Please cite OMB Control No. 3090–0080; Contract Financing Final Payment, GSA Form 1142, Release of Claims, in all correspondence.

Jeffrey A. Koses,

Senior Procurement Executive, Office of Acquisition Policy, Office of Governmentwide Policy.

[FR Doc. 2021–13808 Filed 6–28–21; 8:45 am]

BILLING CODE 6820–61–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Advisory Council on Alzheimer's Research, Care, and Services; Meeting

AGENCY: Assistant Secretary for Planning and Evaluation, HHS.

ACTION: Notice of meeting.

SUMMARY: This notice announces the public meeting of the Advisory Council on Alzheimer's Research, Care, and Services (Advisory Council). The Advisory Council provides advice on how to prevent or reduce the burden of Alzheimer's disease and related dementias on people with the disease and their caregivers. During the July 19, 2021 meeting the Advisory Council will discuss the implications of and opportunities presented by the approval of aducanumab. The Council will also hear updates from federal workgroups on efforts undertaken in the last quarter. The risk reduction subcommittee will present a summary of their work and recommendations. The research, clinical care, and long-term services and supports subcommittees will present recommendations and the Council will vote on adopting them.

DATES: The meeting will be held on July 19, 2021 from 12:30 p.m. to 4:30 p.m. EST.

ADDRESSES: The meeting will be virtual, streaming live at *www.hhs.gov/live.*

Comments: Time is allocated on the agenda to hear public comments from 4:00 p.m. to 4:30 p.m. The time for oral comments will be limited to two (2) minutes per individual. In order to provide a public comment, please register by emailing your name to *napa@hhs.gov* by Thursday, July 15. On Friday, July 16, registered commenters will receive both a dial-in number and a link to join the meeting virtually; individuals will have the choice to either join virtually via the link, or to call in only by using the dial-in number. Note: There may be a 30–45 second delay in the livestream video presentation of the conference. For this reason, if you have pre-registered to submit a public comment, it is important to connect to the meeting by 3:45 p.m. to ensure that you do not miss your name and allotted time when called. If you miss your name and allotted time to speak, you may not be able to make your public comment. All participant audio lines will be muted for the duration of the meeting and only unmuted by the Host at the time of the participant's public comment. Should you have questions during the session email *napa@hhs.gov* and someone will respond to your message as quickly as possible.

In order to ensure accuracy, please submit a written copy of oral comments for the record by emailing *napa@hhs.gov* by Tuesday, July 20. These comments will be shared on the website and reflected in the meeting minutes.

In lieu of oral comments, formal written comments may be submitted for the record by Tuesday, July 20 to Helen Lamont, Ph.D., OASPE, 200 Independence Avenue SW, Room 424E, Washington, DC 20201. Comments may also be sent to *napa@hhs.gov.* Those submitting written comments should identify themselves and any relevant organizational affiliations.

FOR FURTHER INFORMATION CONTACT: Helen Lamont, 202–260–6075, *helen.lamont@hhs.gov.* Note: The meeting will be available to the public live at *www.hhs.gov/live.*

SUPPLEMENTARY INFORMATION: Notice of these meetings is given under the Federal Advisory Committee Act (5 U.S.C. App. 2, section 10(a)(1) and (a)(2)). Topics of the Meeting: Aducanumab, dementia risk reduction, recommendations.

Procedure and Agenda: The meeting will be webcast at *www.hhs.gov/live* and video recordings will be added to the National Alzheimer's Project Act website when available, after the meeting.

Authority: 42 U.S.C. 11225; Section 2(e)(3) of the National Alzheimer's Project Act. The panel is governed by provisions of Public

Law 92–463, as amended (5 U.S.C. Appendix 2), which sets forth standards for the formation and use of advisory committees.

Dated: June 17, 2021.

Rebecca Haffajee,

Acting Assistant Secretary for Planning and Evaluation.

[FR Doc. 2021–13851 Filed 6–28–21; 8:45 am]

BILLING CODE 4150–05–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Environmental Health Sciences; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Environmental Health Sciences Special Emphasis Panel; Review of Outstanding New Environmental Scientist Program.

Date: July 12, 2021.

Time: 10:00 a.m. to 7:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institute of Environmental Health Sciences, Keystone Building, 530 Davis Drive, Durham, NC 27709 (Virtual Meeting).

Contact Person: Laura A., Thomas, Ph.D., Scientific Review Officer, Scientific Review Branch, Division of Extramural Research and Training, National Institute of Environmental Health Sciences, Research Triangle Park, NC 27709, 984–287–3328, *laura.thomas@nih.gov*.

Name of Committee: National Institute of Environmental Health Sciences Special Emphasis Panel; NIH Pathway to Independence Award (K99/R00).

Date: July 14, 2021.

Time: 10:00 a.m. to 5:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institute of Environmental Health Sciences, Keystone Building, 530 Davis Drive, Durham, NC 27709 (Virtual Meeting).

Contact Person: Varsha Shukla, Ph.D., Scientific Review Branch, Division of Extramural Research and Training, National Institute of Environmental Health Science, 530 Davis Dr., Keystone Bldg., Room 3094, Durham, NC 27713, 984–287–3288, *Varsha.shukla@nih.gov*.

Name of Committee: National Institute of Environmental Health Sciences Special Emphasis Panel; Educational Careers in Environmental Health and Toxicology.

Date: July 15, 2021.

Time: 10:00 a.m. to 2:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institute of Environmental Health Sciences, Keystone Building, 530 Davis Drive, Durham, NC 27709 (Virtual Meeting).

Contact Person: Alfonso R. Latoni, Ph.D., Chief and Scientific Review Officer, Scientific Review Branch, Division of Extramural Research and Training, National Institute of Environmental Health Sciences, Research Triangle Park, NC 27709, 984–287–3279, *alfonso.latoni@nih.gov*.

Name of Committee: National Institute of Environmental Health Sciences Special Emphasis Panel; NIEHS Summer Research Education Experience Program.

Date: July 16, 2021.

Time: 11:00 a.m. to 12:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institute of Environmental Health Sciences, Keystone Building, 530 Davis Drive, Durham, NC 27709 (Virtual Meeting).

Contact Person: Linda K. Bass, Ph.D., Scientific Review Officer, Scientific Review Branch, Division of Extramural Research and Training, Nat'l Institute Environmental Health Sciences, P.O. Box 12233, MD EC–30, Research Triangle Park, NC 27709, 984–287–3236, *bass@niehs.nih.gov*.

Name of Committee: National Institute of Environmental Health Sciences Special Emphasis Panel; Machine Learning Application in the Environmental Health Sciences—Phase I SBIR Review.

Date: July 20, 2021.

Time: 1:00 p.m. to 4:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institute of Environmental Health Sciences, Keystone Building, 530 Davis Drive, Durham, NC 27709 (Virtual Meeting).

Contact Person: Leroy Worth, Ph.D., Scientific Review Officer, Scientific Review Branch, Division of Extramural Research and Training, Nat. Institute of Environmental, Health Sciences, P.O. Box 12233, MD EC–30/Room 3171, Research Triangle Park, NC 27709, 984–287–3340, *worth@niehs.nih.gov*.

(Catalogue of Federal Domestic Assistance Program Nos. 93.115, Biometry and Risk Estimation—Health Risks from Environmental Exposures; 93.142, NIEHS Hazardous Waste Worker Health and Safety Training; 93.143, NIEHS Superfund Hazardous Substances—Basic Research and Education; 93.894, Resources and Manpower Development in the Environmental Health Sciences; 93.113, Biological Response to Environmental Health Hazards; 93.114, Applied Toxicological Research and Testing, National Institutes of Health, HHS)

Dated: June 23, 2021.

David W. Freeman,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2021–13766 Filed 6–28–21; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Center for Scientific Review Special Emphasis Panel Member Conflict: Health Promotion and Clinical Care Management Research.

Date: July 20, 2021.

Time: 1:00 p.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892, (Virtual Meeting).

Contact Person: Wenjuan Wang, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institute of Health, 6701 Rockledge Drive, Room 3154, Bethesda, MD 20892, (301) 480–8667, *wangw22@mail.nih.gov*.

Name of Committee: Center for Scientific Review Special Emphasis Panel Hepatobiliary Pathophysiology and Toxicology.

Date: July 21, 2021.

Time: 10:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892, (Virtual Meeting).

Contact Person: Ganesan Ramesh, Ph.D., Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2182, MSC 7818, Bethesda, MD 20892, (301) 827–5467, *ganesan.ramesh@nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel PAR Panel: Pediatric and Obstetric Pharmacology and Therapeutics.

Date: July 23, 2021.

Time: 10:00 a.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892, (Virtual Meeting).

Contact Person: Dianne Hardy, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 6175, MSC 7892, Bethesda, MD 20892, 301–435–1154, *dianne.hardy@nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel PAR–19–222: Small Grants for New Investigators to Promote Diversity in Health-Related Research (R21 Clinical Trial Optional)

Date: July 23, 2021.

Time: 1:00 p.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892, (Virtual Meeting).

Contact Person: Aiping Zhao, MD, Scientific Review Officer, Center for Scientific Review National Institutes of Health, 6701 Rockledge Drive, Room 2188, MSC 7818, Bethesda, MD 20892,–7818, (301) 435–0682, *zhaoa2@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel, Gastrointestinal Immunology and Diseases.

Date: July 23, 2021.

Time: 1:00 p.m. to 4:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892, (Virtual Meeting).

Contact Person: Jianxin Hu, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2156, MSC 7818, Bethesda, MD 20892, (301) 827–4417, *jianxinh@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel Member Conflict: Circadian Rhythms, Social Interaction and Physiological Homeostasis.

Date: July 23, 2021.

Time: 1:00 p.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892, (Virtual Meeting).

Contact Person: Janita N Turchi, Ph.D., Scientific Review Officer, Center for Scientific Review National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892, (301) 402–4005, *turchij@mail.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel Member Conflict: AIDS Related Research.

Date: July 26, 2021.

Time: 10:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892, (Virtual Meeting).

Contact Person: Scott Jakes, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4198, MSC 7812, Bethesda, MD 20892, 301–435–1506, *jakesse@mail.nih.gov.*

Name of Committee: Infectious Diseases and Immunology A Integrated Review Group, HIV Molecular Virology, Cell Biology, and Drug Development Study Section.

Date: July 26–27, 2021.

Time: 10:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892, (Virtual Meeting).

Contact Person: Kenneth A Roebuck, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5214, MSC 7852, Bethesda, MD 20892, (301) 435–1166, *roebuckk@csr.nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393–93.396, 93.837–93.844, 93.846–93.878, 93.892, 93.893, National Institutes of Health, HHS).

Dated: June 24, 2021.

Miguelina Perez,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2021–13853 Filed 6–28–21; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute on Deafness and Other Communication Disorders; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute on Deafness and Other Communication Disorders Special Emphasis Panel NIDCD Clinical Trial Review.

Date: July 20, 2021.

Time: 1:00 p.m. to 2:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Neuroscience Center, 6001 Executive Boulevard, Rockville, MD 20852, (Virtual Meeting).

Contact Person: Andrea B. Kelly, Ph.D., Scientific Review Officer, National Institute on Deafness and Other Communication Disorders, National Institutes of Health, 6001 Executive Boulevard, Room 8351, Bethesda, MD 20892, (301) 451–6339, *kellya2@nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.173, Biological Research Related to Deafness and Communicative Disorders, National Institutes of Health, HHS)

Dated: June 24, 2021.

Miguelina Perez,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2021–13854 Filed 6–28–21; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Center for Scientific Review Special Emphasis Panel; Fellowship: Cardiovascular and Respiratory Sciences.

Date: July 21–22, 2021.

Time: 8:00 a.m. to 7:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Kimm Hamann, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4118A, MSC 7814, Bethesda, MD 20892, (301) 435–5575, *hamannkj@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Medical Imaging Investigations.

Date: July 21, 2021.

Time: 9:00 a.m. to 7:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Guo Feng Xu, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of

Health, 6701 Rockledge Drive, Room 5122, MSC 7854, Bethesda, MD 20892, (301) 237–9870, *xuguofen@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Population Sciences and Epidemiology.

Date: July 21, 2021.

Time: 10:00 a.m. to 4:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Andrew Louden, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3137, Bethesda, MD 20817, 301–435–1985, *loudenan@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Autoimmunity, Transplantation, and Tumor Immunology.

Date: July 21, 2021.

Time: 11:00 a.m. to 8:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Michelle Marie Arnold, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20892, 301–435–1199, *michelle.arnold@nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Neurodegeneration.

Date: July 21, 2021.

Time: 11:00 a.m. to 7:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Geoffrey G. Schofield, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4040–A, MSC 7850, Bethesda, MD 20892, 301–435–1235, *geoffreys@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; SARS-CoV–2 Clinical Research and Field Studies.

Date: July 21, 2021.

Time: 1:00 p.m. to 7:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Deborah Hodge, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4207, MSC 7812, Bethesda, MD 20892, (301) 435–1238, *hodged@mail.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Healthcare Delivery and Implementation Research.

Date: July 21, 2021.

Time: 1:00 p.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Helena Eryam Dagadu, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 3137, Bethesda, MD 20892, (301) 435–1266, *dagaduhe@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: HIV/AIDS Related Behavioral Research.

Date: July 22, 2021.

Time: 10:00 a.m. to 3:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Angela Denise Thrasher, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 1000J, Bethesda, MD 20892, (301) 480–6894, *thrasherad@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Cell Biology.

Date: July 22, 2021.

Time: 10:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Thomas Y Cho, Ph.D., Scientific Review Officer, Center for Scientific Review, 6701 Rockledge Drive, Rm. 5144, MSC 7840, Bethesda, MD 20892, (301) 402–4179, *thomas.cho@nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; PAR Panel: International and Cooperative Projects.

Date: July 22, 2021.

Time: 10:00 a.m. to 6:30 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Seetha Bhagavan, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5194, MSC 7846, Bethesda, MD 20892, (301) 237–9838, *bhagavas@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Opportunities for Collaborative Research at the NIH Clinical Center (U01).

Date: July 22, 2021.

Time: 1:00 p.m. to 8:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Marie-Jose Belanger, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Rm 6188, MSC 7804, Bethesda, MD 20892, (301) 435–1267, *belangerm@csr.nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393–93.396, 93.837–93.844, 93.846–93.878, 93.892, 93.893, National Institutes of Health, HHS)

Dated: June 23, 2021.

David W Freeman,

Program Analyst,Office of Federal Advisory Committee Policy.

[FR Doc. 2021–13767 Filed 6–28–21; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Allergy and Infectious Diseases; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Allergy and Infectious Diseases Special Emphasis Panel; Understanding Evolutionary Dynamics of Influenza to Inform and Improve Vaccine Strain Selection (R01 Clinical Trial Not Allowed).

Date: July 16, 2021.

Time: 11:00 a.m. to 3:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institute of Allergy and Infectious Diseases, National Institutes of Health, 5601 Fishers Lane, Room 3E70, Rockville, MD 20892 (Virtual Meeting).

Contact Person: Mohammed S. Aiyegbo, Ph.D., Contract Scientific Review Officer, Scientific Review Program, Division of Extramural Activities, National Institute of Allergy and Infectious Diseases, National Institutes of Health, 5601 Fishers Lane, Room 3E70, Rockville, MD 20852, (301) 761–7106, *mohammed.aiyegbo@nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.855, Allergy, Immunology, and Transplantation Research; 93.856, Microbiology and Infectious Diseases Research, National Institutes of Health, HHS)

Dated: June 23, 2021.

Tyeshia M. Roberson,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2021–13814 Filed 6–28–21; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Allergy and Infectious Diseases; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Allergy and Infectious Diseases Special Emphasis Panel; NIH Support for Conferences and Scientific Meetings (Parent R13 Clinical Trial Not Allowed).

Date: July 26–28, 2021.

Time: 7:30 a.m. to 3:00 p.m.

Agenda: To review and evaluate grant applications and/or proposals.

Place: National Institute of Allergy and Infectious Diseases, National Institutes of Health, 5601 Fishers Lane, Room 3F21B, Rockville, MD 20892 (Virtual Meeting).

Contact Person: Maryam Feili-Hariri, Ph.D., Scientific Review Officer, Scientific Review Program, Division of Extramural Activities, National Institute of Allergy and Infectious Diseases, National Institutes of Health, 5601 Fishers Lane, Room 3F21B, Rockville, MD 20852, (240) 669–5026, *haririmf@niaid.nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.855, Allergy, Immunology, and Transplantation Research; 93.856, Microbiology and Infectious Diseases Research, National Institutes of Health, HHS)

Dated: June 23, 2021.

Tyeshia M. Roberson,

Program Analyst,Office of Federal Advisory Committee Policy.

[FR Doc. 2021–13815 Filed 6–28–21; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Prospective Grant of an Exclusive Patent License: Adeno-Associated Virus Polynucleotides, Polypeptides and Virions

AGENCY: National Institutes of Health, HHS.

ACTION: Notice.

SUMMARY: The National Heart, Lung, and Blood Institute, an institute of the National Institutes of Health, Department of Health and Human Services, is contemplating the grant of an Exclusive, Sublicensable Patent License to consolidate co-owned rights to the inventions and the Patents and Patent Applications listed in the **SUPPLEMENTARY INFORMATION** section of this notice to The Children's Medical Research Institute, having a place of business in Westmead NSW, Australia.

DATES: Only written comments and/or applications for a license that are received by the National Heart, Lung, and Blood Institute Office of Technology and Development on or before July 14, 2021 will be considered.

ADDRESSES: Requests for a copy of the patent application(s), inquiries, and comments relating to the contemplated license should be directed to: John R. DeVany, Technology Transfer Analyst, NHLBI Office of Technology Transfer and Development, Telephone: 301–594–2436; email: *john.devany@nih.gov.*

SUPPLEMENTARY INFORMATION:

The following and all continuing U.S. and foreign patents/patent applications thereof are the intellectual properties to be licensed under the prospective agreement:

1. U.S. Provisional Patent Application No. 62/331,188, filed May 3, 2016, entitled ''Adeno-Associated Virus Polynucleotides and Virions'' [HHS Ref. No. E–156–2016–0–US–01].

2. Patent Cooperation Treaty Patent Application No. PCT/US2017/030808, filed May 3, 2017, entitled ''Adeno-Associated Virus Polynucleotides and Virions'' [HHS Ref. No. E–156–2016–0–PCT–02].

3. Australian National Phase Patent Application No. 2017261249, filed October 30, 2018, entitled ''Adeno-Associated Virus Polynucleotides and Virions'' [HHS Ref. No. E–156–2016–0–AU–03].

4. U.S. Patent No. 10,882,886 issued January 5, 2021, entitled ''Adeno-Associated Virus Polynucleotides and Virions'' [HHS Ref. No. E–156–2016–0–US–04].

5. European National Phase Patent Application No. 17793239.9 filed December 3, 2018, entitled ''Adeno-Associated Virus Polynucleotides and Virions'' [HHS Ref. No. E–156–2016–0–EP–05].

The patent rights in these inventions have been assigned to the Government of the United States of America, Sydney Children's Hospital Network, and the Children's Medical Research Institute (CMRI), a co-owner of said rights, for commercial development and marketing. The prospective patent license will be for the purpose of consolidating the patent rights to CMRI. Consolidation of these co-owned rights is intended to expedite development of the invention, consistent with the goals of the Bayh-Dole Act codified as 35 U.S.C. 200–212. The prospective patent license will be worldwide, exclusive, may be limited to those fields of use commensurate in scope with the patent rights, and will be sublicensable.

The subject technology pertains to a ''fossilized'' AAV-derived endogenous viral element (referred to as mAAV–EVE) within the germline of an ancient lineage of Australian marsupials. This novel AAV coat protein sequence of mAAV–EVE may provide the basis for recombinant AAV vectors with unique biological properties.

This notice is made in accordance with 35 U.S.C. 209 and 37 CFR 404. The prospective Exclusive Patent License will be royalty bearing and may be granted unless, within fifteen (15) days from the date of this published notice, the National Heart, Lung, and Blood Institute Office of Technology Transfer and Development receives written evidence and argument that establishes that the grant of the license would not be consistent with the requirements of 35 U.S.C. 209 and 37 CFR 404.

Complete applications for a license that are timely filed in response to this notice will be treated as objections to this to the grant of the contemplated exclusive patent license.

In response to this Notice, the public may file comments or objections. Comments and objections, other than those in the form of a license application, will not be treated confidentially, and may be made publicly available. License applications submitted in response to this Notice will be presumed to contain business confidential information and any release of information from these license applications will be made only as required and upon a request under the *Freedom of Information Act,* 5 U.S.C. 552.

Dated: June 22, 2021.

Bruce D. Goldstein,

Director, Office of Technology Transfer and Development, National Heart, Lung, and Blood Institute.

[FR Doc. 2021–13826 Filed 6–28–21; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Center for Scientific Review Special Emphasis Panel; PAR–15–358: Molecular and Cellular Causal Aspects of Alzheimer's Disease.

Date: July 21, 2021.

Time: 10:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Adem Can, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4190, MSC 7850, Bethesda, MD 20892, (301) 435–1042, *cana2@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Motivated Behavior, Alcohol, and Heavy Metal.

Date: July 21, 2021.

Time: 1:00 p.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Michael Selmanoff, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5164, MSC 7844, Bethesda, MD 20892, 301–435–1119, *selmanom@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; PAR–20–140: Catalytic Tool and Technology Development in Kidney, Urologic, and Hematologic Diseases (R21).

Date: July 21, 2021.

Time: 1:00 p.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Atul Sahai, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2188, MSC 7818, Bethesda, MD 20892, 301–435–1198, *sahaia@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Vascular and Blood Cell Pathobiology.

Date: July 22, 2021.

Time: 10:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Ai-Ping Zou, MD, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4118, MSC 7814, Bethesda, MD 20892, 301–408–9497, *zouai@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Neuropharmacology and Signaling.

Date: July 22, 2021.

Time: 1:00 p.m. to 5:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Carol Hamelink, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4192, MSC 7850, Bethesda, MD 20892, (301) 213–9887, *hamelinc@csr.nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393–93.396, 93.837–93.844, 93.846–93.878, 93.892, 93.893, National Institutes of Health, HHS)

Dated: June 23, 2021.

David W. Freeman,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2021–13764 Filed 6–28–21; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

Center for Scientific Review; Notice of Closed Meetings

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meetings.

The meetings will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: Center for Scientific Review Special Emphasis Panel; Sensory-Motor Neuroscience.

Date: July 13, 2021.

Time: 11:00 a.m. to 1:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: John Bishop, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5182, MSC 7844, Bethesda, MD 20892, (301) 408–9664, *bishopj@csr.nih.gov.*

This notice is being published less than 15 days prior to the meeting due to the timing limitations imposed by the review and funding cycle.

Name of Committee: Digestive, Kidney and Urological Systems Integrated Review Group; Systemic Injury by Environmental Exposure.

Date: July 15–16, 2021.

Time: 9:00 a.m. to 6:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Jodie Michelle Fleming, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 812R, Bethesda, MD 20892, (301) 867–5309, *flemingjm@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Systemic Injury by Environmental Exposure.

Date: July 16, 2021.

Time: 1:00 p.m. to 3:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Jonathan K. Ivins, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 2190, MSC 7850, Bethesda, MD 20892, (301) 594–1245 *ivinsj@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Cardiovascular Sciences.

Date: July 20, 2021.

Time: 10:00 a.m. to 7:00 p.m.

Agenda: To review and evaluate grant applications.

Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).

Contact Person: Imoh S. Okon, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Bethesda, MD 20817, 301–347–8881, *imoh.okon@nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflicts: Visual Systems.

Date: July 20, 2021.

Time: 11:00 a.m. to 4:00 p.m.
Agenda: To review and evaluate grant applications.
Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).
Contact Person: John Bishop, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 5182, MSC 7844, Bethesda, MD 20892, (301) 408–9664, *bishopj@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; PAR Panel: Development of the Fetal Immune System.
Date: July 20, 2021.
Time: 11:00 a.m. to 5:00 p.m.
Agenda: To review and evaluate grant applications.
Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).
Contact Person: Andrew Maxwell Wolfe, Ph.D., Scientific Review Officer, Center for Scientific Review, NIH, 6701 Rockledge Dr., Room 6214, Bethesda, MD 20892, (301) 402–3019, *andrew.wolfe@nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Cancer Biology.
Date: July 20, 2021.
Time: 11:30 a.m. to 6:30 p.m.
Agenda: To review and evaluate grant applications.
Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).
Contact Person: Angela Y. Ng, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 6200, MSC 7804, Bethesda, MD 20892, 301–435–1715, *nga@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Topics in Metabolism.
Date: July 20, 2021.
Time: 1:00 p.m. to 4:00 p.m.
Agenda: To review and evaluate grant applications.
Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Telephone Conference Call).
Contact Person: Anthony Wing Sang Chan, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institute of Health, 6701 Rockledge Drive, Room 809K, Bethesda, MD 20892, (301) 435–5000, *chana2@csr.nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Genes, Genomes and Genetics.
Date: July 20, 2021.
Time: 1:00 p.m. to 6:00 p.m.
Agenda: To review and evaluate grant applications.
Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).
Contact Person: Emily Foley, Ph.D., Scientific Review Officer, Center for Scientific Review, 6701 Rockledge Drive, Bethesda, MD 20747, 301–435–0627, *emily.foley@nih.gov.*

Name of Committee: Center for Scientific Review Special Emphasis Panel; Member Conflict: Cellular and Molecular Neuroscience.
Date: July 20, 2021.
Time: 1:30 p.m. to 5:30 p.m.
Agenda: To review and evaluate grant applications.
Place: National Institutes of Health, Rockledge II, 6701 Rockledge Drive, Bethesda, MD 20892 (Virtual Meeting).
Contact Person: Laurent Taupenot, Ph.D., Scientific Review Officer, Center for Scientific Review, National Institutes of Health, 6701 Rockledge Drive, Room 4188, MSC 7850, Bethesda, MD 20892, (301) 435–1203, *laurent.taupenot@nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.306, Comparative Medicine; 93.333, Clinical Research, 93.306, 93.333, 93.337, 93.393–93.396, 93.837–93.844, 93.846–93.878, 93.892, 93.893, National Institutes of Health, HHS)

Dated: June 23, 2021.

David W. Freeman,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2021–13765 Filed 6–28–21; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Institute of Neurological Disorders and Stroke; Notice of Closed Meeting

Pursuant to section 10(d) of the Federal Advisory Committee Act, as amended, notice is hereby given of the following meeting.

The meeting will be closed to the public in accordance with the provisions set forth in sections 552b(c)(4) and 552b(c)(6), Title 5 U.S.C., as amended. The grant applications and the discussions could disclose confidential trade secrets or commercial property such as patentable material, and personal information concerning individuals associated with the grant applications, the disclosure of which would constitute a clearly unwarranted invasion of personal privacy.

Name of Committee: National Institute of Neurological Disorders and Stroke Special Emphasis Panel; NINDS R13's.
Date: July 21, 2021.
Time: 12:00 p.m. to 4:00 p.m.
Agenda: To review and evaluate grant applications.
Place: National Institutes of Health, Neuroscience Center, 6001 Executive Boulevard, Rockville, MD 20852 (Virtual Meeting).
Contact Person: Marilyn Moore-Hoon, Ph.D., Scientific Review Officer, Scientific Review Branch, Division of Extramural Activities, National Institute of Neurological Disorders and Stroke, Bethesda, MD 20892, 301–827–9087, *mooremar@mail.nih.gov.*

(Catalogue of Federal Domestic Assistance Program Nos. 93.853, Clinical Research Related to Neurological Disorders; 93.854, Biological Basis Research in the Neurosciences, National Institutes of Health, HHS)

Dated: June 23, 2021.

Tyeshia M. Roberson,

Program Analyst, Office of Federal Advisory Committee Policy.

[FR Doc. 2021–13816 Filed 6–28–21; 8:45 am]

BILLING CODE 4140–01–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Docket ID FEMA–2021–0002]

Changes in Flood Hazard Determinations

AGENCY: Federal Emergency Management Agency, Department of Homeland Security.

ACTION: Notice.

SUMMARY: New or modified Base (1-percent annual chance) Flood Elevations (BFEs), base flood depths, Special Flood Hazard Area (SFHA) boundaries or zone designations, and/or regulatory floodways (hereinafter referred to as flood hazard determinations) as shown on the indicated Letter of Map Revision (LOMR) for each of the communities listed in the table below are finalized. Each LOMR revises the Flood Insurance Rate Maps (FIRMs), and in some cases the Flood Insurance Study (FIS) reports, currently in effect for the listed communities. The flood hazard determinations modified by each LOMR will be used to calculate flood insurance premium rates for new buildings and their contents.

DATES: Each LOMR was finalized as in the table below.

ADDRESSES: Each LOMR is available for inspection at both the respective Community Map Repository address listed in the table below and online through the FEMA Map Service Center at *https://msc.fema.gov.*

FOR FURTHER INFORMATION CONTACT: Rick Sacbibit, Chief, Engineering Services Branch, Federal Insurance and Mitigation Administration, FEMA, 400 C Street SW, Washington, DC 20472, (202) 646–7659, or (email) *patrick.sacbibit@fema.dhs.gov;* or visit the FEMA Mapping and Insurance eXchange (FMIX) online at *https://*

www.floodmaps.fema.gov/fhm/fmx_main.html.

SUPPLEMENTARY INFORMATION: The Federal Emergency Management Agency (FEMA) makes the final flood hazard determinations as shown in the LOMRs for each community listed in the table below. Notice of these modified flood hazard determinations has been published in newspapers of local circulation and 90 days have elapsed since that publication. The Deputy Associate Administrator for Insurance and Mitigation has resolved any appeals resulting from this notification.

The modified flood hazard determinations are made pursuant to section 206 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4105, and are in accordance with the National Flood Insurance Act of 1968, 42 U.S.C. 4001 *et seq.,* and with 44 CFR part 65.

For rating purposes, the currently effective community number is shown and must be used for all new policies and renewals.

The new or modified flood hazard information is the basis for the floodplain management measures that the community is required either to adopt or to show evidence of being already in effect in order to remain qualified for participation in the National Flood Insurance Program (NFIP).

This new or modified flood hazard information, together with the floodplain management criteria required by 44 CFR 60.3, are the minimum that are required. They should not be construed to mean that the community must change any existing ordinances that are more stringent in their floodplain management requirements. The community may at any time enact stricter requirements of its own or pursuant to policies established by other Federal, State, or regional entities.

This new or modified flood hazard determinations are used to meet the floodplain management requirements of the NFIP and are used to calculate the appropriate flood insurance premium rates for new buildings, and for the contents in those buildings. The changes in flood hazard determinations are in accordance with 44 CFR 65.4.

Interested lessees and owners of real property are encouraged to review the final flood hazard information available at the address cited below for each community or online through the FEMA Map Service Center at *https://msc.fema.gov.*

(Catalog of Federal Domestic Assistance No. 97.022, ''Flood Insurance.'')

Michael M. Grimm,

Assistant Administrator for Risk Management, Department of Homeland Security, Federal Emergency Management Agency.

State and county	Location and case No.	Chief executive officer of community	Community map repository	Date of modification	Community No.
Alabama:					
Madison (FEMA Docket No.: B–2117).	City of Huntsville (19–04–5211P).	The Honorable Thomas Battle, Jr., Mayor, City of Huntsville, 308 Fountain Circle, 8th Floor, Huntsville, AL 35801.	City Hall, 308 Fountain Circle, 8th Floor, Huntsville, AL 35801.	May 20, 2021	010153
Madison (FEMA Docket No.: B–2117).	Unincorporated Areas of Madison County (19–04–5211P).	The Honorable Dale W. Strong, Chairman, Madison County Commission, 100 North Side Square, Huntsville, AL 35801.	Madison County, Engineering Department, 100 Hughes Road, Madison, AL 35758.	May 20, 2021	010151
Arizona: Yavapai (FEMA Docket No.: B–2109).	City of Prescott (20–09–1903P).	The Honorable Greg Mengarelli, Mayor, City of Prescott, 201 South Cortez Street, Prescott, AZ 86303.	Public Works Department, 433 North Virginia Street, Prescott, AZ 86301.	May 13, 2021	040098
Arkansas: Pulaski (FEMA Docket No.: B–2109).	City of Little Rock (20–06–3649P).	The Honorable Frank D. Scott Jr., Mayor, City of Little Rock, 500 West Markham Street, Room 203, Little Rock, AR 72201.	Department of Public Works, 701 West Markham Street, Little Rock, AR 72201.	May 17, 2021	050181
Colorado:					
Arapahoe (FEMA Docket No.: B–2109).	City of Littleton (21–08–0174P).	The Honorable Jerry Valdes, Mayor, City of Littleton, 2255 West Berry Avenue, Littleton, CO 80120.	Public Works Department, 2255 West Berry Avenue, Littleton, CO 80120.	May 7, 2021	080017
Chaffee (FEMA Docket No.: B–2109).	Unincorporated areas of Chaffee County (20–08–0467P).	The Honorable Greg Felt, Chairman, Chaffee County Board of Commissioners, P.O. Box 699, Salida, CO 81201.	Chaffee County Planning and Zoning Department, 104 Crestone Avenue, Room 125, Salida, CO 81201.	Apr. 28, 2021	080269
Denver (FEMA Docket No.: B–2109).	City and County of Denver (20–08–0532P).	The Honorable Michael Hancock, Mayor, City and County of Denver, 1437 North Bannock Street, Room 350, Denver, CO 80202.	Department of Transportation and Infrastructure, 201 West Colfax Avenue, Department 507, Denver, CO 80202.	May 7, 2021	080046
Douglas (FEMA Docket No.: B–2109).	Unincorporated areas of Douglas County (20–08–0491P).	The Honorable Roger A. Partridge, Chairman, Douglas County Board of Commissioners, 100 3rd Street, Castle Rock, CO 80104.	Douglas County Public Works Department, Engineering Division, 100 3rd Street, Castle Rock, CO 80104.	Apr. 23, 2021	080049
Connecticut:					
Fairfield (FEMA Docket No.: B–2106).	Town of Stratford (20–01–0502P).	The Honorable Laura R. Hoydick, Mayor, Town of Stratford, 2725 Main Street, Stratford, CT 06615.	Building Department, 2725 Main Street, Stratford, CT 06615.	Apr. 26, 2021	090016
New London (FEMA Docket No.: B–2109).	Town of Waterford (20–01–1244P).	The Honorable Robert J. Brule, First Selectman, Town of Waterford Board of Selectmen, 15 Rope Ferry Road, Waterford, CT 06385.	Planning and Development Department, 15 Rope Ferry Road, Waterford, CT 06385.	May 7, 2021	090107
Florida:					
Collier (FEMA Docket No.: B–2117).	City of Naples (20–04–6275P).	The Honorable Teresa L. Heitmann, Mayor, City of Naples, 735 8th Street South, Naples, FL 34102.	Building Department, 295 Riverside Circle, Naples, FL 34102.	May 13, 2021	125130
Marion (FEMA Docket No.: B–2106).	Unincorporated areas of Marion County (20–04–1412P).	The Honorable Mounir Bouyounes, Marion County Administrator, 601 Southeast 25th Avenue, Ocala, FL 34471.	Office of Marion County Administrator, 601 Southeast 25th Avenue, Ocala, FL 34471.	May 6, 2021	120160

State and county	Location and case No.	Chief executive officer of community	Community map repository	Date of modification	Community No.
Monroe (FEMA Docket No.: B–2106).	Unincorporated areas of Monroe County (20–04–4391P).	The Honorable Michelle Coldiron, Mayor, Monroe County Board of Commissioners, 25 Ships Way, Big Pine Key, FL 33042.	Monroe County Building Department, 2798 Overseas Highway, Suite 300, Marathon, FL 33050.	Apr. 26, 2021	125129
Pinellas (FEMA Docket No.: B–2119).	City of Indian Rocks Beach (20–04–4881P).	Mr. Brently Gregg Mims Manager, City of Indian Rocks Beach, 1507 Bay Palm Boulevard, Indian Rocks Beach, FL 33785.	Building Department, 1507 Bay Palm Boulevard, Indian Rocks Beach, FL 33785.	May 13, 2021	125117
Georgia:					
Bryan (FEMA Docket No.: B–2109).	Unincorporated areas of Bryan County (20–04–3250P).	The Honorable Carter Infinger, Chairman, Bryan County Board of Commissioners, P.O. Box 430, Pembroke, GA 31321.	Bryan County Department of Community Development, 6 Captain Matthew Freeman Drive, Suite 2016, Richmond Hill, GA 31324	May 14, 2021	130016
Coweta (FEMA Docket No.: B–2106).	Unincorporated areas of Coweta County (21–04–0345P).	The Honorable Paul Poole, Chairman, Coweta County Board of Commissioners, 22 East Broad Street, Newnan, GA 30263.	Coweta County Community Development Department, 22 East Broad Street, Newnan, GA 30263.	May 6, 2021	130298
Louisiana: Tangipahoa (FEMA Docket No.: B–2109).	Unincorporated areas of Tangipahoa Parish (20–06–1407P).	Mr. Robby Miller, Tangipahoa Parish President, P.O. Box 215, Amite, LA 70422.	Tangipahoa Parish Office of Community Development, 15485 West Club Deluxe Road, Hammond, LA 70403.	May 5, 2021	220206
Mississippi:					
Copiah (FEMA Docket No.: B–2106).	City of Hazlehurst (20–04–2010P).	The Honorable Shirley Sandifer, Mayor, City of Hazlehurst, P.O. Box 549, Hazlehurst, MS 39083.	City Hall, 209 South Extension Street, Hazlehurst, MS 39083.	May 6, 2021	280046
Copiah (FEMA Docket No.: B–2106).	Unincorporated areas of Copiah County (20–04–2010P).	The Honorable Ronnie Barlow, Copiah County Administrator, P.O. Box 551, Hazlehurst, MS 39083.	Copiah County Courthouse, 122 South Lowe Street, Hazlehurst, MS 39083.	May 6, 2021	280221
New Mexico: Dona Ana (FEMA Docket No.: B–2106).	City of Las Cruces (20–06–1381P).	The Honorable Ken Miyagishima, Mayor, City of Las Cruces, 700 North Main Street, Las Cruces, NM 88001.	City Hall, 700 North Main Street, Las Cruces, NM 88001.	Apr. 28, 2021	355332
Texas:					
Bexar and Guadalupe (FEMA Docket No.: B–2117).	City of Selma (20–06–1874P).	The Honorable Tom Daly, Mayor, City of Selma, 9375 Corporate Drive, Selma, TX 78154.	Geographic Information Systems (GIS) Department, 9375 Corporate Drive, Selma, TX 78154.	May 10, 2021	480046
Bexar (FEMA Docket No.: B–2117).	Unincorporated areas of Bexar County (20–06–1284P).	The Honorable Nelson W. Wolff, Bexar County Judge, 101 West Nueva Street, 10th Floor, San Antonio, TX 78205.	Bexar County Public Works Department, 1948 Probandt Street, San Antonio, TX 78214.	May 10, 2021	480035
Collin and Denton (FEMA Docket No.: B–2117).	City of Celina (20–06–2234P).	The Honorable Sean Terry, Mayor, City of Celina, 142 North Ohio Street, Celina, TX 75009.	City Hall, 142 North Ohio Street, Celina, TX 75009.	May 17, 2021	480133
Collin (FEMA Docket No.: B–2117).	City of Princeton (20–06–2556P).	Mr. Derek Borg, City of Princeton Manager, 123 West Princeton Drive, Princeton, TX 75407.	City Hall, 123 West Princeton Drive, Princeton, TX 75407.	Apr. 30, 2021	480757
Collin (FEMA Docket No.: B–2117).	Town of Prosper (20–06–2234P).	The Honorable Ray Smith, Mayor, Town of Prosper, P.O. Box 307, Prosper, TX 75078.	Engineering Services Department, 250 West 1st Street, Prosper, TX 75078.	May 17, 2021	480141
Denton (FEMA Docket No.: B–2117).	Unincorporated areas of Denton County (20–06–2234P).	The Honorable Andy Eads, Denton County Judge, 110 West Hickory Street, 2nd Floor, Denton, TX 76201.	Denton County Development Services Department, 3900 Morse Street, Denton, TX 76208.	May 17, 2021	480774
Harris (FEMA Docket No.: B–2106).	City of Houston (21–06–0023P).	The Honorable Sylvester Turner, Mayor, City of Houston, P.O. Box 1562, Houston, TX 77251.	Public Works and Engineering, Floodplain Management Department, 1002 Washington Avenue, 3rd Floor, Houston, TX 77251.	Apr. 26, 2021	480296
Harris (FEMA Docket No.: B–2106).	Unincorporated areas of Harris County (20–06–2992P).	The Honorable Lina Hidalgo, Harris County Judge, 1001 Preston Street, Suite 911, Houston, TX 77002.	Harris County Permit Department, 10555 Northwest Freeway, Suite 120, Houston, TX 77092.	Apr. 26, 2021	480287
Tarrant (FEMA Docket No.: B–2109).	City of Fort Worth (20–06–2746P).	The Honorable Betsy Price, Mayor, City of Fort Worth, 200 Texas Street, Fort Worth, TX 76102.	Transportation and Public Works Department, Engineering Vault, 200 Texas Street, Fort Worth, TX 76102.	May 13, 2021	480596
Virginia:					
Loudoun (FEMA Docket No.: B–2106).	Unincorporated areas of Loudoun County (20–03–1566P).	Mr. Tim Hemstreet, Loudoun County Administrator, P.O. Box 7000, Leesburg, VA 20177.	Loudoun County Mapping and Geographic Information (GIS) Department, 1 Harrison Street Southeast, Leesburg, VA 20175.	May 10, 2021	510090
Tazewell (FEMA Docket No.: B–2109).	Unincorporated areas of Tazewell County (20–03–1438P).	The Honorable Charles A. Stacy, Chairman, Tazewell County Board of Supervisors, P.O. Box 1025, Bluefield, VA 25605.	Tazewell County Engineering Department, 173 Main Street, Tazewell, VA 24651.	May 13, 2021	510160

[FR Doc. 2021–13861 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–12–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Docket ID FEMA–2021–0002]

Changes in Flood Hazard Determinations

AGENCY: Federal Emergency Management Agency, Department of Homeland Security.

ACTION: Notice.

SUMMARY: New or modified Base (1-percent annual chance) Flood Elevations (BFEs), base flood depths, Special Flood Hazard Area (SFHA) boundaries or zone designations, and/or regulatory floodways (hereinafter referred to as flood hazard determinations) as shown on the indicated Letter of Map Revision (LOMR) for each of the communities listed in the table below are finalized. Each LOMR revises the Flood Insurance Rate Maps (FIRMs), and in some cases the Flood Insurance Study (FIS) reports, currently in effect for the listed communities. The flood hazard determinations modified by each LOMR will be used to calculate flood insurance premium rates for new buildings and their contents.

DATES: Each LOMR was finalized as in the table below.

ADDRESSES: Each LOMR is available for inspection at both the respective Community Map Repository address listed in the table below and online through the FEMA Map Service Center at *https://msc.fema.gov*.

FOR FURTHER INFORMATION CONTACT: Rick Sacbibit, Chief, Engineering Services Branch, Federal Insurance and Mitigation Administration, FEMA, 400 C Street SW, Washington, DC 20472, (202) 646–7659, or (email) *patrick.sacbibit@fema.dhs.gov;* or visit the FEMA Mapping and Insurance eXchange (FMIX) online at *https://www.floodmaps.fema.gov/fhm/fmx_main.html.*

SUPPLEMENTARY INFORMATION: The Federal Emergency Management Agency (FEMA) makes the final flood hazard determinations as shown in the LOMRs for each community listed in the table below. Notice of these modified flood hazard determinations has been published in newspapers of local circulation and 90 days have elapsed since that publication. The Deputy Associate Administrator for Insurance and Mitigation has resolved any appeals resulting from this notification.

The modified flood hazard determinations are made pursuant to section 206 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4105, and are in accordance with the National Flood Insurance Act of 1968, 42 U.S.C. 4001 *et seq.,* and with 44 CFR part 65.

For rating purposes, the currently effective community number is shown and must be used for all new policies and renewals.

The new or modified flood hazard information is the basis for the floodplain management measures that the community is required either to adopt or to show evidence of being already in effect in order to remain qualified for participation in the National Flood Insurance Program (NFIP).

This new or modified flood hazard information, together with the floodplain management criteria required by 44 CFR 60.3, are the minimum that are required. They should not be construed to mean that the community must change any existing ordinances that are more stringent in their floodplain management requirements. The community may at any time enact stricter requirements of its own or pursuant to policies established by other Federal, State, or regional entities.

This new or modified flood hazard determinations are used to meet the floodplain management requirements of the NFIP and are used to calculate the appropriate flood insurance premium rates for new buildings, and for the contents in those buildings. The changes in flood hazard determinations are in accordance with 44 CFR 65.4.

Interested lessees and owners of real property are encouraged to review the final flood hazard information available at the address cited below for each community or online through the FEMA Map Service Center at *https://msc.fema.gov*.

(Catalog of Federal Domestic Assistance No. 97.022, ''Flood Insurance.'')

Michael M. Grimm,

Assistant Administrator for Risk Management, Department of Homeland Security, Federal Emergency Management Agency.

State and county	Location and case No.	Chief executive officer of community	Community map repository	Date of modification	Community No.
Arizona:					
Mohave (FEMA Docket No.: B–2117).	City of Lake Havasu City, (20–09–1801P).	The Honorable Cal S. Sheehy, Mayor, City of Lake Havasu City, 2330 McCulloch Boulevard North, Lake Havasu City, AZ 86403.	Development Services Department, 2330 McCulloch Boulevard North, Lake Havasu City, AZ 86403.	Jun. 3, 2021	040116
Mohave, (FEMA Docket No.: B–2117).	Unincorporated areas of Mohave County, (20–09–1801P).	The Honorable Buster Johnson, Chairman, Mohave County Board of Supervisors, 2001 College Drive, Suite 90, Lake Havasu City, AZ 86403.	Mohave County Flood Control District, 3250 East Kino Avenue, Kingman, AZ 86409.	Jun. 3, 2021	040058
Colorado:					
El Paso, (FEMA Docket No.: B–2109).	City of Colorado Springs, (20–08–0548P).	The Honorable John Suthers, Mayor, City of Colorado Springs, 30 South Nevada Avenue, Suite 601, Colorado Springs, CO 80903.	Pikes Peak Regional Development Center, 2880 International Circle, Colorado Springs, CO 80910.	Jun. 1, 2021	080060

State and county	Location and case No.	Chief executive officer of community	Community map repository	Date of modification	Community No.
El Paso, (FEMA Docket No.: B–2109).	Unincorporated areas of El Paso County, (20–08–0548P).	The Honorable Mark Waller, Chairman, El Paso County Board of Commissioners, 200 South Cascade Avenue, Suite 100, Colorado Springs, CO 80903.	Pikes Peak Regional Development Center, 2880 International Circle, Colorado Springs, CO 80910.	Jun. 1, 2021	080059
El Paso, (FEMA Docket No.: B–2117).	Unincorporated areas of El Paso County, (20–08–0750P).	The Honorable Stan VanderWerf, Chairman, El Paso County Board of Commissioners, 200 South Cascade Avenue, Suite 100, Colorado Springs, CO 80903.	Pikes Peak Regional Development Center, 2880 International Circle, Colorado Springs, CO 80910.	Jun. 14, 2021	080059
Larimer, (FEMA Docket No.: B–2119).	Unincorporated areas of Larimer County, (20–08–0490P).	The Honorable John Kefalas, Chairman, Larimer County Board of Commissioners, 200 West Oak Street, Suite 2200, Fort Collins, CO 80521.	Larimer County Engineering Department, 200 West Oak Street, Fort Collins, CO 80521.	Jun. 9, 2021	080101
Weld, (FEMA Docket No.: B–2117).	Town of Severance, (20–08–0596P).	The Honorable Donald McLeod, Mayor, Town of Severance, 3 South Timber Ridge Parkway, Severance, CO 80550.	Town Hall, 3 South Timber Ridge Parkway, Severance, CO 80550.	Jun. 10, 2021	080317
Connecticut:					
Hartford, (FEMA Docket No.: B–2117).	Town of Simsbury, (20–01–1155P).	Ms. Maria Capriola, Town of Simsbury Manager, 933 Hopmeadow Street, Simsbury, CT 06070.	Town Hall, 933 Hopmeadow Street, Simsbury, CT 06070.	Jun. 3, 2021	090035
New Haven, (FEMA Docket No.: B–2119).	Town of Branford, (21–01–0065P).	The Honorable James B. Cosgrove, First Selectman, Town of Branford Board of Selectmen, 1019 Main Street, Branford, CT 06405.	Engineering Department, 1019 Main Street, Branford, CT 06405.	May 27, 2021	090073
Florida:					
Miami-Dade, (FEMA Docket No.: B–2117).	City of Sunny Isles Beach, (20–04–5872P).	The Honorable George ''Bud'' Scholl, Mayor, City of Sunny Isles Beach, 18070 Collins Avenue, Sunny Isles Beach, FL 33160.	Building Department, 18070 Collins Avenue, Sunny Isles Beach, FL 33160.	Jun. 1, 2021	120688
Monroe, (FEMA Docket No.: B–2117).	Unincorporated areas of Monroe County, (21–04–0609P).	The Honorable Michelle Coldiron, Mayor, Monroe County Board of Commissioners, 25 Ships Way, Big Pine Key, FL 33042.	Monroe County Building Department, 2798 Overseas Highway, Suite 300, Marathon, FL 33050.	Jun. 14, 2021	125129
Monroe, (FEMA Docket No.: B–2117).	Village of Islamorada, (21–04–0284P).	The Honorable Buddy Pinder, Mayor, Village of Islamorada, 86800 Overseas Highway, Islamorada, FL 33036.	Building Department, 86800 Overseas Highway, Islamorada, FL 33036.	May 27, 2021	120424
Orange, (FEMA Docket No.: B–2117).	City of Orlando, (20–04–5596P).	The Honorable Buddy W. Dyer, Mayor, City of Orlando, P.O. Box 4990, Orlando, FL 32802.	Public Works Department, Engineering Division, 400 South Orange Avenue, 8th Floor, Orlando, FL 32801.	May 18, 2021	120186
Polk, (FEMA Docket No.: B–2109).	Unincorporated areas of Polk County, (20–04–3375P).	The Honorable Bill Braswell, Chairman, Polk County Board of Commissioners, P.O. Box 9005, Bartow, FL 33831.	Polk County Land Development Division, 330 West Church Street, Bartow, FL 33830.	May 20, 2021	120261

State and county	Location and case No.	Chief executive officer of community	Community map repository	Date of modification	Community No.
Georgia: Columbia, (FEMA Docket No.: B–2117).	Unincorporated areas of Columbia County, (20–04–3795P).	The Honorable Douglas R. Duncan, Jr., Chairman, Columbia County Board of Commissioners, 630 Ronald Reagan Drive, Building B, Evans, GA 30809.	Columbia County Engineering Services Division, 630 Ronald Reagan Drive, Building A, Evans, GA 30809.	May 26, 2021	130059
Oklahoma: Rogers, (FEMA Docket No.: B–2119).	Unincorporated areas of Rogers County, (20–06–3071P).	The Honorable Dan DeLozier, Chairman, Rogers County Board of Commissioners, 200 South Lynn Riggs Boulevard, Claremore, OK 74017.	Rogers County Planning Commission, 200 South Lynn Riggs Boulevard, Claremore, OK 74017.	Jun. 14, 2021	405379
Pennsylvania:					
Montgomery, (FEMA Docket No.: B–2117).	Township of Upper Dublin, (20–03–0912P).	Mr. Ira S. Tackel, President, Township of Upper Dublin Board of Commissioners, 801 Loch Alsh Avenue, Fort Washington, PA 19034.	Community Planning and Zoning Department, 801 Loch Alsh Avenue, Fort Washington, PA 19034.	May 24, 2021	420708
Montgomery, (FEMA Docket No.: B–2117).	Township of Whitemarsh, (20–03–0912P).	Ms. Laura Boyle-Nester, Chair, Township of Whitemarsh Board of Supervisors, 616 Germantown Pike, Lafayette Hill, PA 19444.	Township Hall, 616 Germantown Pike, Lafayette Hill, PA 19444.	May 24, 2021	420712
South Carolina:					
Berkeley, (FEMA Docket No.: B–2117).	Town of Moncks Corner, (20–04–4527P).	The Honorable Michael Lockliear, Mayor, Town of Moncks Corner, 118 Carolina Avenue, Moncks Corner, SC 29461.	Town Hall, 118 Carolina Avenue, Moncks Corner, SC 29461.	Jun. 10, 2021	450031
Berkeley, (FEMA Docket No.: B–2117).	Unincorporated areas of Berkeley County, (20–04–4527P).	Mr. John Cribb, Berkeley County Supervisor, 1003 Highway 52, Moncks Corner, SC 29461.	Berkeley County Administration Building, 1003 Highway 52, Moncks Corner, SC 29461.	Jun. 10, 2021	450029
Charleston, (FEMA Docket No.: B–2117).	Unincorporated areas of Charleston County, (21–04–0473P).	The Honorable Teddie E. Pryor, Sr., Chairman, Charleston County Council, 2700 Crestline Drive, North Charleston, SC 29405.	Charleston County Building Inspections Department, 4045 Bridge View Drive, North Charleston, SC 29405.	Jun. 14, 2021	455413
Texas:					
Bexar, (FEMA Docket No.: B–2125).	Unincorporated areas of Bexar County, (20–06–2261P).	The Honorable Nelson W. Wolff, Bexar County Judge, 101 West Nueva Street, 10th Floor, San Antonio, TX 78205.	Bexar County Public Works Department, 1948 Probandt Street, San Antonio, TX 78214.	Jun. 7, 2021	480035
Collin, (FEMA Docket No.: B–2119).	City of Plano, (20–06–3373P).	The Honorable Harry LaRosiliere, Mayor, City of Plano, 1520 K Avenue, Plano, TX 75074.	Engineering Department, 1520 K Avenue, Plano, TX 75074.	Jun. 14, 2021	480140
Collin, (FEMA Docket No.: B–2117).	City of Sachse, (20–06–2901P).	Ms. Gina Nash, City of Sachse Manager, 3815 Sachse Road, Building B, Sachse, TX 75048.	Engineering Department, 3815 Sachse Road, Building B, Sachse, TX 75048.	Jun. 4, 2021	480186
Collin, (FEMA Docket No.: B–2117).	City of Wylie, (20–06–2901P).	The Honorable Matthew Porter, Mayor, City of Wylie, 300 Country Club Road, Building 100, Wylie, TX 75098.	Engineering Department, 300 Country Club Road, Building 100, Wylie, TX 75098.	Jun. 4, 2021	480759
Collin and Denton, (FEMA Docket No.: B–2117).	Town of Prosper, (20–06–1821P).	The Honorable Ray Smith, Mayor, Town of Prosper, P.O. Box 307, Prosper, TX 75078.	Engineering Services Department, 250 West 1st Street, Prosper, TX 75078.	May 24, 2021	480141

State and county	Location and case No.	Chief executive officer of community	Community map repository	Date of modification	Community No.
Comal, (FEMA Docket No.: B–2117).	Unincorporated areas of Comal County, (20–06–1966P).	The Honorable Sherman Krause, Comal County Judge, 100 Main Plaza, New Braunfels, TX 78130.	Comal County Engineering Department, 195 David Jonas Drive, New Braunfels, TX 78132.	May 20, 2021	485463
Dallas, (FEMA Docket No.: B–2125).	City of Dallas, (20–06–2951P).	The Honorable Eric Johnson, Mayor, City of Dallas, 1500 Marilla Street, Suite 5EN, Dallas, TX 75201.	Floodplain Management Department, 320 East Jefferson Boulevard, Room 312, Dallas, TX 75203.	Jun. 7, 2021	480171
Denton, (FEMA Docket No.: B–2117).	Unincorporated areas of Denton County, (20–06–1821P).	The Honorable Andy Eads, Denton County Judge, 110 West Hickory Street, 2nd Floor, Denton, TX 76201.	Denton County Development Services Department, 3900 Morse Street, Denton, TX 76208.	May 24, 2021	480774
Harris, (FEMA Docket No.: B–2119).	Unincorporated areas of Harris County, (20–06–2933P).	The Honorable Lina Hidalgo, Harris County Judge, 1001 Preston Street, Suite 911, Houston, TX 77064.	Harris County Permit Office, 10555 Northwest Freeway, Suite 120, Houston, TX 77002.	May 17, 2021	480287
Lubbock, (FEMA Docket No.: B–2117).	City of Lubbock, (20–06–2140P).	The Honorable Dan Pope, Mayor, City of Lubbock, P.O. Box 2000, Lubbock, TX 79457.	Engineering Department, 1314 Avenue K, 7th Floor, Lubbock, TX 79401.	Jun. 10, 2021	480452
Lubbock, (FEMA Docket No.: B–2117).	Unincorporated areas of Lubbock County, (20–06–2140P).	The Honorable Curtis Parrish, Lubbock County Judge, 904 Broadway Street, Suite 101, Lubbock, TX 79401.	Lubbock County Public Works Department, 904 Broadway Street, Lubbock, TX 79401.	Jun. 10, 2021	480915
Tarrant, (FEMA Docket No.: B–2119).	City of Fort Worth, (20–06–3150P).	The Honorable Betsy Price, Mayor, City of Fort Worth, 200 Texas Street, Fort Worth, TX 76102.	Transportation and Public Works Department, Engineering Vault, 200 Texas Street, Fort Worth, TX 76102.	Jun. 14, 2021	480596
Utah:					
Sanpete, (FEMA Docket No.: B–2119).	City of Ephraim, (20–08–0461P).	The Honorable John Scott, Mayor, City of Ephraim, 5 South Main Street, Ephraim, UT 84627.	City Hall, 5 South Main Street, Ephraim, UT 84627.	May 14, 2021	490112
Sanpete, (FEMA Docket No.: B–2119).	Unincorporated areas of Sanpete County, (20–08–0461P).	The Honorable Scott Bartholomew, Chairman, Sanpete County Commission, 160 North Main Street, Suite 101, Manti, UT 84642.	Sanpete County Zoning and Building Department, 160 North Main Street, Suite 203, Manti, UT 84642.	May 14, 2021	490111
Virginia: Loudoun, (FEMA Docket No.: B–2117).	Unincorporated areas of Loudoun County, (20–03–1253P).	Mr. Tim Hemstreet, Loudoun County Administrator, P.O. Box 7000, Leesburg, VA 20177.	Loudoun County Mapping and Geographic Information (GIS) Department, 1 Harrison Street Southeast, Leesburg, VA 20177.	Jun. 14, 2021	510090

[FR Doc. 2021–13838 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–12–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Docket ID FEMA–2021–0002; Internal Agency Docket No. FEMA–B–2142]

Proposed Flood Hazard Determinations

AGENCY: Federal Emergency Management Agency, Department of Homeland Security.

ACTION: Notice.

SUMMARY: Comments are requested on proposed flood hazard determinations, which may include additions or modifications of any Base Flood Elevation (BFE), base flood depth, Special Flood Hazard Area (SFHA) boundary or zone designation, or regulatory floodway on the Flood Insurance Rate Maps (FIRMs), and where applicable, in the supporting Flood Insurance Study (FIS) reports for the communities listed in the table below. The purpose of this notice is to seek general information and comment regarding the preliminary FIRM, and where applicable, the FIS report that the

Federal Emergency Management Agency (FEMA) has provided to the affected communities. The FIRM and FIS report are the basis of the floodplain management measures that the community is required either to adopt or to show evidence of having in effect in order to qualify or remain qualified for participation in the National Flood Insurance Program (NFIP). In addition, the FIRM and FIS report, once effective, will be used by insurance agents and others to calculate appropriate flood insurance premium rates for new buildings and the contents of those buildings.

DATES: Comments are to be submitted on or before September 27, 2021.

ADDRESSES: The Preliminary FIRM, and where applicable, the FIS report for each community are available for inspection at both the online location *https://hazards.fema.gov/femaportal/prelimdownload* and the respective Community Map Repository address listed in the tables below. Additionally, the current effective FIRM and FIS report for each community are accessible online through the FEMA Map Service Center at *https://msc.fema.gov* for comparison.

You may submit comments, identified by Docket No. FEMA–B–2142, to Rick Sacbibit, Chief, Engineering Services Branch, Federal Insurance and Mitigation Administration, FEMA, 400 C Street SW, Washington, DC 20472, (202) 646–7659, or (email) *patrick.sacbibit@fema.dhs.gov.*

FOR FURTHER INFORMATION CONTACT: Rick Sacbibit, Chief, Engineering Services Branch, Federal Insurance and Mitigation Administration, FEMA, 400 C Street SW, Washington, DC 20472, (202) 646–7659, or (email) *patrick.sacbibit@fema.dhs.gov;* or visit the FEMA Mapping and Insurance eXchange (FMIX) online at *https://www.floodmaps.fema.gov/fhm/fmx_main.html.*

SUPPLEMENTARY INFORMATION: FEMA proposes to make flood hazard determinations for each community listed below, in accordance with section 110 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4104, and 44 CFR 67.4(a).

These proposed flood hazard determinations, together with the floodplain management criteria required by 44 CFR 60.3, are the minimum that are required. They should not be construed to mean that the community must change any existing ordinances that are more stringent in their floodplain management requirements. The community may at any time enact stricter requirements of its own or pursuant to policies established by other Federal, State, or regional entities. These flood hazard determinations are used to meet the floodplain management requirements of the NFIP and are used to calculate the appropriate flood insurance premium rates for new buildings built after the FIRM and FIS report become effective.

The communities affected by the flood hazard determinations are provided in the tables below. Any request for reconsideration of the revised flood hazard information shown on the Preliminary FIRM and FIS report that satisfies the data requirements outlined in 44 CFR 67.6(b) is considered an appeal. Comments unrelated to the flood hazard determinations also will be considered before the FIRM and FIS report become effective.

Use of a Scientific Resolution Panel (SRP) is available to communities in support of the appeal resolution process. SRPs are independent panels of experts in hydrology, hydraulics, and other pertinent sciences established to review conflicting scientific and technical data and provide recommendations for resolution. Use of the SRP only may be exercised after FEMA and local communities have been engaged in a collaborative consultation process for at least 60 days without a mutually acceptable resolution of an appeal. Additional information regarding the SRP process can be found online at *https://www.floodsrp.org/pdfs/srp_overview.pdf.*

The watersheds and/or communities affected are listed in the tables below. The Preliminary FIRM, and where applicable, FIS report for each community are available for inspection at both the online location *https://hazards.fema.gov/femaportal/prelimdownload* and the respective Community Map Repository address listed in the tables. For communities with multiple ongoing Preliminary studies, the studies can be identified by the unique project number and Preliminary FIRM date listed in the tables. Additionally, the current effective FIRM and FIS report for each community are accessible online through the FEMA Map Service Center at *https://msc.fema.gov* for comparison.

(Catalog of Federal Domestic Assistance No. 97.022, ''Flood Insurance.'')

Michael M. Grimm,

Assistant Administrator for Risk Management, Department of Homeland Security, Federal Emergency Management Agency.

Community	Community map repository address
Collin County, Texas and Incorporated Areas Project: 20–06–0102S Preliminary Date: February 5, 2021	
City of Dallas	Dallas Water Utilities, Stormwater Operations, 320 East Jefferson Boulevard, Room 312, Dallas, TX 75203.

[FR Doc. 2021–13865 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–12–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Docket ID FEMA–2021–0002; Internal Agency Docket No. FEMA–B–2138]

Proposed Flood Hazard Determinations

AGENCY: Federal Emergency Management Agency, Department of Homeland Security.

ACTION: Notice.

SUMMARY: Comments are requested on proposed flood hazard determinations, which may include additions or modifications of any Base Flood Elevation (BFE), base flood depth, Special Flood Hazard Area (SFHA) boundary or zone designation, or regulatory floodway on the Flood Insurance Rate Maps (FIRMs), and where applicable, in the supporting Flood Insurance Study (FIS) reports for the communities listed in the table

below. The purpose of this notice is to seek general information and comment regarding the preliminary FIRM, and where applicable, the FIS report that the Federal Emergency Management Agency (FEMA) has provided to the affected communities. The FIRM and FIS report are the basis of the floodplain management measures that the community is required either to adopt or to show evidence of having in effect in order to qualify or remain qualified for participation in the National Flood Insurance Program (NFIP). In addition, the FIRM and FIS report, once effective, will be used by insurance agents and others to calculate appropriate flood insurance premium rates for new buildings and the contents of those buildings.

DATES: Comments are to be submitted on or before September 27, 2021.

ADDRESSES: The Preliminary FIRM, and where applicable, the FIS report for each community are available for inspection at both the online location *https://hazards.fema.gov/femaportal/prelimdownload* and the respective Community Map Repository address listed in the tables below. Additionally, the current effective FIRM and FIS report for each community are accessible online through the FEMA Map Service Center at *https://msc.fema.gov* for comparison.

You may submit comments, identified by Docket No. FEMA–B–2138, to Rick Sacbibit, Chief, Engineering Services Branch, Federal Insurance and Mitigation Administration, FEMA, 400 C Street SW, Washington, DC 20472, (202) 646–7659, or (email) *patrick.sacbibit@fema.dhs.gov.*

FOR FURTHER INFORMATION CONTACT: Rick Sacbibit, Chief, Engineering Services Branch, Federal Insurance and Mitigation Administration, FEMA, 400 C Street SW, Washington, DC 20472, (202) 646–7659, or (email) *patrick.sacbibit@fema.dhs.gov;* or visit the FEMA Mapping and Insurance eXchange (FMIX) online at *https://www.floodmaps.fema.gov/fhm/fmx_main.html.*

SUPPLEMENTARY INFORMATION: FEMA proposes to make flood hazard determinations for each community listed below, in accordance with section 110 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4104, and 44 CFR 67.4(a).

These proposed flood hazard determinations, together with the floodplain management criteria required by 44 CFR 60.3, are the minimum that are required. They should not be construed to mean that the community must change any existing ordinances that are more stringent in their floodplain management requirements. The community may at any time enact stricter requirements of its own or pursuant to policies established by other Federal, State, or regional entities. These flood hazard determinations are used to meet the floodplain management requirements of the NFIP and are used to calculate the appropriate flood insurance premium rates for new buildings built after the FIRM and FIS report become effective.

The communities affected by the flood hazard determinations are provided in the tables below. Any request for reconsideration of the revised flood hazard information shown on the Preliminary FIRM and FIS report that satisfies the data requirements outlined in 44 CFR 67.6(b) is considered an appeal. Comments unrelated to the flood hazard determinations also will be considered before the FIRM and FIS report become effective.

Use of a Scientific Resolution Panel (SRP) is available to communities in support of the appeal resolution process. SRPs are independent panels of experts in hydrology, hydraulics, and other pertinent sciences established to review conflicting scientific and technical data and provide recommendations for resolution. Use of the SRP only may be exercised after FEMA and local communities have been engaged in a collaborative consultation process for at least 60 days without a mutually acceptable resolution of an appeal. Additional information regarding the SRP process can be found online at *https://www.floodsrp.org/pdfs/srp_overview.pdf.*

The watersheds and/or communities affected are listed in the tables below. The Preliminary FIRM, and where applicable, FIS report for each community are available for inspection at both the online location *https://hazards.fema.gov/femaportal/prelimdownload* and the respective Community Map Repository address listed in the tables. For communities with multiple ongoing Preliminary studies, the studies can be identified by the unique project number and Preliminary FIRM date listed in the tables. Additionally, the current effective FIRM and FIS report for each community are accessible online through the FEMA Map Service Center at *https://msc.fema.gov* for comparison.

(Catalog of Federal Domestic Assistance No. 97.022, ''Flood Insurance.'')

Michael M. Grimm,

Assistant Administrator for Risk Management, Department of Homeland Security, Federal Emergency Management Agency.

Community	Community map repository address
Buena Vista County, Iowa and Incorporated Areas Project: 16–07–2138S Preliminary Date: August 16, 2019	
City of Storm Lake	City Hall, 620 Erie Street, Storm Lake, IA 50588.
Clayton County, Iowa and Incorporated Areas Project: 19–07–0015S Preliminary Date: December 16, 2020	
City of Elkader	City Hall, 207 North Main Street, Elkader, IA 52043.
Unincorporated Areas of Clayton County	Clayton County Courthouse, 111 High Street Northeast, Elkader, IA 52043.
Kent County, Michigan (All Jurisdictions) Project: 12–05–2853S Preliminary Date: November 16, 2020	
Charter Township of Caledonia	Township Hall, 8196 Broadmoor Avenue Southeast, Caledonia, MI 49316.
Charter Township of Cascade	Cascade Charter Township Office, 5920 Tahoe Drive Southeast, Grand Rapids, MI 49546.
Charter Township of Gaines	Gaines Charter Township Office, 8555 Kalamazoo Avenue Southeast, Caledonia, MI 49316.

Community	Community map repository address
Charter Township of Grand Rapids	Township Hall, 1836 East Beltline Avenue Northeast, Grand Rapids, MI 49525.
Charter Township of Lowell	Township Hall, 2910 Alden Nash Avenue Southeast, Lowell, MI 49331.
Charter Township of Plainfield	Plainfield Charter Township Hall, 6161 Belmont Avenue Northeast, Belmont, MI 49306.
City of Cedar Springs	City Hall, 66 South Main Street, Cedar Springs, MI 49319.
City of East Grand Rapids	Community Center, 750 Lakeside Drive Southeast, East Grand Rapids, MI 49506.
City of Grand Rapids	City Hall, 300 Monroe Avenue Northwest, Grand Rapids, MI 49503.
City of Grandville	City Hall, 3195 Wilson Avenue Southwest, Grandville, MI 49418.
City of Kentwood	City Hall Engineering Department, 4900 Breton Avenue Southeast, Kentwood, MI 49508.
City of Lowell	City Hall, 301 East Main Street, Lowell, MI 49331.
City of Rockford	City Hall, 7 South Monroe Street, Rockford, MI 49341.
City of Walker	Engineering Department City Hall, 4243 Remembrance Road Northwest, Walker, MI 49534.
City of Wyoming	City Hall, 1155 28th Street Southwest, Wyoming, MI 49509.
Township of Ada	Township Hall, 7330 Thornapple River Drive, Ada, MI 49301.
Township of Algoma	Algoma Township Office, 10531 Algoma Avenue Northeast, Rockford, MI 49341.
Township of Alpine	Alpine Township Hall, 5255 Alpine Avenue Northwest, Comstock Park, MI 49321.
Township of Byron	Byron Township Hall, 8085 Byron Center Avenue Southwest, Byron Center, MI 49315.
Township of Cannon	Cannon Township Center, 6878 Belding Road, Rockford, MI 49341.
Township of Solon	Solon Township Offices, 15185 Algoma Avenue Northeast, Cedar Springs, MI 49319.
Township of Sparta	Township Hall, 160 East Division Street, Sparta, MI 49345.
Township of Tyrone	Tyrone Township Hall, 28 East Muskegon Street, Kent City, MI 49330.
Township of Vergennes	Vergennes Township Hall, 10381 Bailey Drive Northeast, Lowell, MI 49331.
Village of Casnovia	Village Hall, 141 North Main Street, Casnovia, MI 49318.
Village of Kent City	Village Office, 83 Spring Street, Kent City, MI 49330.
Village of Sparta	Village Hall, 156 East Division Street, Sparta, MI 49345.
Florence County, Wisconsin and Incorporated Areas Project: 18–05–0013S Preliminary Date: November 16, 2020	
Unincorporated Areas of Florence County	Florence County Courthouse, 501 Lake Avenue, Florence, WI 54121.

[FR Doc. 2021–13863 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–12–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Docket ID FEMA–2021–0002; Internal Agency Docket No. FEMA–B–2114]

Proposed Flood Hazard Determinations for Dickinson County, Kansas and Incorporated Areas

AGENCY: Federal Emergency Management Agency, Department of Homeland Security.

ACTION: Notice; withdrawal.

SUMMARY: The Federal Emergency Management Agency (FEMA) is withdrawing its proposed notice concerning proposed flood hazard determinations, which may include the addition or modification of any Base Flood Elevation, base flood depth, Special Flood Hazard Area boundary or zone designation, or regulatory floodway (herein after referred to as proposed flood hazard determinations) on the Flood Insurance Rate Maps and, where applicable, in the supporting Flood Insurance Study reports for Dickinson County, Kansas and Incorporated Areas.

DATES: This withdrawal is effective June 29, 2021.

ADDRESSES: You may submit comments, identified by Docket No. FEMA–B–2114 to Rick Sacbibit, Chief, Engineering Services Branch, Federal Insurance and Mitigation Administration, FEMA, 400 C Street SW, Washington, DC 20472, (202) 646–7659, or (email) *patrick.sacbibit@fema.dhs.gov.*

FOR FURTHER INFORMATION CONTACT: Rick Sacbibit, Chief, Engineering Services Branch, Federal Insurance and Mitigation Administration, FEMA, 400 C Street SW, Washington, DC 20472, (202) 646–7659, or (email) *patrick.sacbibit@fema.dhs.gov;*

SUPPLEMENTARY INFORMATION: On April 12, 2021, FEMA published a proposed notice at 86 FR 18998, proposing flood hazard determinations for Dickinson County, Kansas, and Incorporated Areas. FEMA is withdrawing the proposed notice.

Michael M. Grimm,

Assistant Administrator for Risk Management, Department of Homeland Security, Federal Emergency Management Agency.

[FR Doc. 2021–13840 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–12–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Docket ID FEMA–2021–0002]

Final Flood Hazard Determinations

AGENCY: Federal Emergency Management Agency, Department of Homeland Security.

ACTION: Notice.

SUMMARY: Flood hazard determinations, which may include additions or

modifications of Base Flood Elevations (BFEs), base flood depths, Special Flood Hazard Area (SFHA) boundaries or zone designations, or regulatory floodways on the Flood Insurance Rate Maps (FIRMs) and where applicable, in the supporting Flood Insurance Study (FIS) reports have been made final for the communities listed in the table below. The FIRM and FIS report are the basis of the floodplain management measures that a community is required either to adopt or to show evidence of having in effect in order to qualify or remain qualified for participation in the Federal Emergency Management Agency's (FEMA's) National Flood Insurance Program (NFIP). In addition, the FIRM and FIS report are used by insurance agents and others to calculate appropriate flood insurance premium rates for buildings and the contents of those buildings.

DATES: The date of October 7, 2021 has been established for the FIRM and, where applicable, the supporting FIS report showing the new or modified flood hazard information for each community.

ADDRESSES: The FIRM, and if applicable, the FIS report containing the final flood hazard information for each community is available for inspection at the respective Community Map Repository address listed in the tables below and will be available online through the FEMA Map Service Center at *https://msc.fema.gov* by the date indicated above.

FOR FURTHER INFORMATION CONTACT: Rick Sacbibit, Chief, Engineering Services Branch, Federal Insurance and Mitigation Administration, FEMA, 400 C Street SW, Washington, DC 20472, (202) 646–7659, or (email) *patrick.sacbibit@fema.dhs.gov;* or visit the FEMA Mapping and Insurance eXchange (FMIX) online at *https://www.floodmaps.fema.gov/fhm/fmx_main.html.*

SUPPLEMENTARY INFORMATION: The Federal Emergency Management Agency (FEMA) makes the final determinations listed below for the new or modified flood hazard information for each community listed. Notification of these changes has been published in newspapers of local circulation and 90 days have elapsed since that publication. The Deputy Associate Administrator for Insurance and Mitigation has resolved any appeals resulting from this notification.

This final notice is issued in accordance with section 110 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4104, and 44 CFR part 67. FEMA has developed criteria for floodplain management in floodprone areas in accordance with 44 CFR part 60.

Interested lessees and owners of real property are encouraged to review the new or revised FIRM and FIS report available at the address cited below for each community or online through the FEMA Map Service Center at *https://msc.fema.gov.*

The flood hazard determinations are made final in the watersheds and/or communities listed in the table below.

(Catalog of Federal Domestic Assistance No. 97.022, ''Flood Insurance.'')

Michael M. Grimm,

Assistant Administrator for Risk Management, Department of Homeland Security, Federal Emergency Management Agency.

Community	Community map repository address
DeSoto County, Florida and Incorporated Areas Docket No.: FEMA–B–2032	
Unincorporated Areas of DeSoto County	DeSoto County Planning Department, 201 East Oak Street, Arcadia, FL 34266.
Hillsborough County, Florida and Incorporated Areas Docket No.: FEMA–B–1950	
City of Tampa	Construction Services Center, 1400 North Boulevard, Tampa, FL 33607.
Unincorporated Areas of Hillsborough County	Hillsborough County Public Works Department, 601 East Kennedy Boulevard, 22nd Floor, Tampa, FL 33602.
Turner County, South Dakota and Incorporated Areas Docket No.: FEMA–B–2004	
City of Centerville	City Hall, 741 Main Street, Centerville, SD 57014.
City of Hurley	City Hall, 701 Burns Place , Hurley, SD 57036.
City of Marion	City Hall, 398 North Broadway Avenue, Marion, SD 57043.
City of Parker	City Shops, 279 West 5th Street, Parker, SD 57053.
Town of Davis	Map Repository, 261 East 4th Street, Davis, SD 57021.
Town of Monroe	Map Repository, 300 3rd Street, Monroe, SD 57047.
Unincorporated Areas of Turner County	Turner County Planning and Zoning Office, 400 South Main Street, Parker, SD 57053.
Amelia County, Virginia (All Jurisdictions) Docket No.: FEMA–B–2013	
Unincorporated Areas of Amelia County	Amelia County Courthouse, 16360 Dunn Street, Amelia, VA 23002.
Summers County, West Virginia and Incorporated Areas Docket No.: FEMA–B–2032	
City of Hinton	City Hall, 322 Summers Street, Hinton, WV 25951.
Unincorporated Areas of Summers County	Summers County Courthouse, 120 Ballengee Street, Suite 203, Hinton, WV 25951.

[FR Doc. 2021–13867 Filed 6–28–21; 8:45 am]
BILLING CODE 9110–12–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Docket ID FEMA–2021–0002]

Final Flood Hazard Determinations

AGENCY: Federal Emergency Management Agency, Department of Homeland Security.

ACTION: Notice.

SUMMARY: Flood hazard determinations, which may include additions or modifications of Base Flood Elevations (BFEs), base flood depths, Special Flood Hazard Area (SFHA) boundaries or zone designations, or regulatory floodways on the Flood Insurance Rate Maps (FIRMs) and where applicable, in the supporting Flood Insurance Study (FIS) reports have been made final for the communities listed in the table below. The FIRM and FIS report are the basis of the floodplain management measures that a community is required either to adopt or to show evidence of having in effect in order to qualify or remain qualified for participation in the Federal Emergency Management Agency's (FEMA's) National Flood Insurance Program (NFIP). In addition, the FIRM and FIS report are used by insurance agents and others to calculate appropriate flood insurance premium rates for buildings and the contents of those buildings.

DATES: The date of September 24, 2021 has been established for the FIRM and, where applicable, the supporting FIS report showing the new or modified flood hazard information for each community.

ADDRESSES: The FIRM, and if applicable, the FIS report containing the final flood hazard information for each community is available for inspection at the respective Community Map Repository address listed in the tables below and will be available online through the FEMA Map Service Center at *https://msc.fema.gov* by the date indicated above.

FOR FURTHER INFORMATION CONTACT: Rick Sacbibit, Chief, Engineering Services Branch, Federal Insurance and Mitigation Administration, FEMA, 400 C Street SW, Washington, DC 20472, (202) 646–7659, or (email) *patrick.sacbibit@fema.dhs.gov;* or visit the FEMA Mapping and Insurance eXchange (FMIX) online at *https://www.floodmaps.fema.gov/fhm/fmx_main.html.*

SUPPLEMENTARY INFORMATION: The Federal Emergency Management Agency (FEMA) makes the final determinations listed below for the new or modified flood hazard information for each community listed. Notification of these changes has been published in newspapers of local circulation and 90 days have elapsed since that publication. The Deputy Associate Administrator for Insurance and Mitigation has resolved any appeals resulting from this notification.

This final notice is issued in accordance with section 110 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4104, and 44 CFR part 67. FEMA has developed criteria for floodplain management in floodprone areas in accordance with 44 CFR part 60.

Interested lessees and owners of real property are encouraged to review the new or revised FIRM and FIS report available at the address cited below for each community or online through the FEMA Map Service Center at *https://msc.fema.gov.*

The flood hazard determinations are made final in the watersheds and/or communities listed in the table below.

(Catalog of Federal Domestic Assistance No. 97.022, ''Flood Insurance.'')

Michael M. Grimm,

Assistant Administrator for Risk Management, Department of Homeland Security, Federal Emergency Management Agency.

Community	Community map repository address
Jefferson County, Alabama and Incorporated Areas Docket No.: FEMA–B–1860	
City of Argo	Argo City Hall, 100 Blackjack Road, Trussville, AL 35173.
City of Bessemer	City Hall, 1700 3rd Avenue North, Bessemer, AL 35020.
City of Birmingham	Department of Planning, Engineering, and Permits, 710 20th Street North, Room 210, Birmingham, AL 35203.
City of Clay	Clay City Hall, 2441 Old Springville Road, Birmingham, AL 35215.
City of Helena	Municipal Building, 816 Highway 52 East, Helena, AL 35080.
City of Homewood	City Hall, 2850 19th Street South, Homewood, AL 35209.
City of Hoover	City Hall, 100 Municipal Lane, Hoover, AL 35216.
City of Irondale	City Hall, 101 20th Street South, Irondale, AL 35210.
City of Leeds	Development Services, 1404 9th Street, Leeds, AL 35094.
City of Mountain Brook	City Hall, 56 Church Street, Mountain Brook, AL 35213.
City of Trussville	City Hall, 131 Main Street, Trussville, AL 35173.
City of Vestavia Hills	City Hall, 1032 Montgomery Highway, Vestavia Hills, AL 35216.
Unincorporated Areas of Jefferson County	Jefferson County Department of Development Services, 716 Richard Arrington Jr. Boulevard North, Suite B200, Birmingham, AL 35203.
Shelby County, Alabama and Incorporated Areas Docket Nos.: FEMA–B–1860 and B–2027	
City of Birmingham	Department of Planning, Engineering, and Permits, 710 North 20th Street, Room 210, Birmingham, AL 35203.
City of Helena	Municipal Building, 816 Highway 52 East, Helena, AL 35080.
City of Hoover	City Hall, 100 Municipal Lane, Hoover, AL 35216.
City of Vestavia Hills	City Hall, 1032, Montgomery Highway, Vestavia Hills, AL 35216.
Unincorporated Areas of Shelby County	Shelby County Engineer's Office, 506 Highway 70, Columbiana, AL 35051.

Community	Community map repository address
St. Clair County, Alabama and Incorporated Areas Docket No.: FEMA–B–1860	
City of Leeds	Development Services, 1404 9th Street, Leeds, AL 35094.
City of Moody	City Hall, 670 Park Avenue, Moody, AL 35004.
City of Trussville	City Hall, 131 Main Street, Trussville, AL 35173.
Unincorporated Areas of St. Clair County	St. Clair County Road Department, 31588 U.S. Highway 231, Ashville, AL 35953.
Alachua County, Florida and Incorporated Areas Docket No.: FEMA–B–1823	
City of Gainesville	Public Works Department, 405 North West 39th Avenue, Gainesville, FL 32609.
Unincorporated Areas of Alachua County	Alachua County Public Works Department, 5620 North West 120th Lane, Gainesville, FL 32653.
Orange County, Florida and Incorporated Areas Docket No.: FEMA–B–1966	
City of Apopka	City Engineer's Office, 120 East Main Street, Apopka, FL 32703.
City of Ocoee	Building and Zoning Department, 150 North Lakeshore Drive, Ocoee, FL 34761.
City of Winter Garden	Engineering Division, 300 West Plant Street, Winter Garden, FL 34787.
Town of Oakland	Town Hall, 220 North Tubb Street, Oakland, FL 34760.
Unincorporated Areas of Orange County	Orange County Stormwater Management Division, 4200 South John Young Parkway, Orlando, FL 32839.
Nicholas County, West Virginia and Incorporated Areas Docket No.: FEMA–B–2032	
City of Richwood	J.H. Meadows Municipal Complex, 6 White Avenue, Richwood, WV 26261.
Unincorporated Areas of Nicholas County	Nicholas County Division of Homeland Security and Emergency Management, 511 Church Street, LO2, Summersville, WV 26651.

[FR Doc. 2021–13866 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–12–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Docket ID FEMA–2021–0002; Internal Agency Docket No. FEMA–B–2145]

Proposed Flood Hazard Determinations

AGENCY: Federal Emergency Management Agency, Department of Homeland Security.

ACTION: Notice.

SUMMARY: Comments are requested on proposed flood hazard determinations, which may include additions or modifications of any Base Flood Elevation (BFE), base flood depth, Special Flood Hazard Area (SFHA) boundary or zone designation, or regulatory floodway on the Flood Insurance Rate Maps (FIRMs), and where applicable, in the supporting Flood Insurance Study (FIS) reports for the communities listed in the table below. The purpose of this notice is to seek general information and comment regarding the preliminary FIRM, and where applicable, the FIS report that the Federal Emergency Management Agency (FEMA) has provided to the affected communities. The FIRM and FIS report are the basis of the floodplain management measures that the community is required either to adopt or to show evidence of having in effect in order to qualify or remain qualified for participation in the National Flood Insurance Program (NFIP). In addition, the FIRM and FIS report, once effective, will be used by insurance agents and others to calculate appropriate flood insurance premium rates for new buildings and the contents of those buildings.

DATES: Comments are to be submitted on or before September 27, 2021.

ADDRESSES: The Preliminary FIRM, and where applicable, the FIS report for each community are available for inspection at both the online location *https://hazards.fema.gov/femaportal/prelimdownload* and the respective Community Map Repository address listed in the tables below. Additionally, the current effective FIRM and FIS report for each community are accessible online through the FEMA Map Service Center at *https://msc.fema.gov* for comparison.

You may submit comments, identified by Docket No. FEMA–B–2145, to Rick Sacbibit, Chief, Engineering Services Branch, Federal Insurance and Mitigation Administration, FEMA, 400 C Street SW, Washington, DC 20472, (202) 646–7659, or (email) *patrick.sacbibit@fema.dhs.gov*.

FOR FURTHER INFORMATION CONTACT: Rick Sacbibit, Chief, Engineering Services Branch, Federal Insurance and Mitigation Administration, FEMA, 400 C Street SW, Washington, DC 20472, (202) 646–7659, or (email) *patrick.sacbibit@fema.dhs.gov;* or visit the FEMA Mapping and Insurance eXchange (FMIX) online at *https://www.floodmaps.fema.gov/fhm/fmx_main.html*.

SUPPLEMENTARY INFORMATION: FEMA proposes to make flood hazard determinations for each community listed below, in accordance with section 110 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4104, and 44 CFR 67.4(a).

These proposed flood hazard determinations, together with the floodplain management criteria required by 44 CFR 60.3, are the minimum that

are required. They should not be construed to mean that the community must change any existing ordinances that are more stringent in their floodplain management requirements. The community may at any time enact stricter requirements of its own or pursuant to policies established by other Federal, State, or regional entities. These flood hazard determinations are used to meet the floodplain management requirements of the NFIP and are used to calculate the appropriate flood insurance premium rates for new buildings built after the FIRM and FIS report become effective.

The communities affected by the flood hazard determinations are provided in the tables below. Any request for reconsideration of the revised flood hazard information shown on the Preliminary FIRM and FIS report that satisfies the data requirements outlined in 44 CFR 67.6(b) is considered an appeal. Comments unrelated to the flood hazard determinations also will be considered before the FIRM and FIS report become effective.

Use of a Scientific Resolution Panel (SRP) is available to communities in support of the appeal resolution process. SRPs are independent panels of experts in hydrology, hydraulics, and other pertinent sciences established to review conflicting scientific and technical data and provide recommendations for resolution. Use of the SRP only may be exercised after FEMA and local communities have been engaged in a collaborative consultation process for at least 60 days without a mutually acceptable resolution of an appeal. Additional information regarding the SRP process can be found online at *https://www.floodsrp.org/pdfs/srp_overview.pdf*.

The watersheds and/or communities affected are listed in the tables below. The Preliminary FIRM, and where applicable, FIS report for each community are available for inspection at both the online location *https://hazards.fema.gov/femaportal/prelimdownload* and the respective Community Map Repository address listed in the tables. For communities with multiple ongoing Preliminary studies, the studies can be identified by the unique project number and Preliminary FIRM date listed in the tables. Additionally, the current effective FIRM and FIS report for each community are accessible online through the FEMA Map Service Center at *https://msc.fema.gov* for comparison.

(Catalog of Federal Domestic Assistance No. 97.022, ''Flood Insurance.'')

Michael M. Grimm,

Assistant Administrator for Risk Management, Department of Homeland Security, Federal Emergency Management Agency.

Community	Community map repository address
Black Hawk County, Iowa and Incorporated Areas Project: 17–07–0295S Preliminary Date: January 12, 2021	
City of Cedar Falls	City Hall, 220 Clay Street, Cedar Falls, IA 50613.
City of Waterloo	City Hall, Planning and Zoning Department, 715 Mulberry Street, Waterloo, IA 50703.
Dickinson County, Iowa and Incorporated Areas Project: 16–07–2213S Preliminary Date: February 10, 2021	
City of Okoboji	City Hall, 1322 Highway 71 North, Okoboji, IA 51355.
City of Orleans	City of Orleans, Dickinson County Courthouse, 1802 Hill Avenue, Suite 2101, Spirit Lake, IA 51360.
City of Spirit Lake	City Hall, 1803 Hill Avenue, Spirit Lake, IA 51360.
Unincorporated Areas of Dickinson County	Dickinson County Courthouse, 1802 Hill Avenue, Suite 2101, Spirit Lake, IA 51360.
Fayette County, Iowa and Incorporated Areas Project: 19–07–0018S Preliminary Date: December 7, 2020	
City of Elgin	City Hall, 212 Main Street, Elgin, IA 52141.
City of Oelwein	City Hall, 20 2nd Avenue Southwest, Oelwein, IA 50662.
Unincorporated Areas of Fayette County	Fayette County Courthouse, 114 North Vine Street, West Union, IA 52175.
Hancock County, Iowa and Incorporated Areas Project: 19–07–0019S Preliminary Date: December 3, 2020	
City of Forest City	City Hall, 305 North Clark Street, Forest City, IA 50436.
Unincorporated Areas of Hancock County	Hancock County Courthouse, 855 State Street, Garner, IA 50438.
Winnebago County, Iowa and Incorporated Areas Project: 19–07–0030S Preliminary Date: January 7, 2021	
City of Leland	City Hall, 316 Walnut Street, Leland, IA 50453.
Unincorporated Areas of Winnebago County	Winnebago County Courthouse, 126 South Clark Street, Forest City, IA 50436.
Woodbury County, Iowa and Incorporated Areas Project: 18–07–0015S Preliminary Date: October 21, 2020	
City of Anthon	City Hall, 301 East Main Street, Anthon, IA 51004.
City of Bronson	City Hall, 100 East 1st Street, Bronson, IA 51007.
City of Correctionville	City Hall, 312 Driftwood Street, Correctionville, IA 51016.
City of Cushing	City Hall, 200 Main Street, Cushing, IA 51018.
City of Danbury	City Hall, 207 1st Street, Danbury, IA 51019.
City of Hornick	City Hall, 400 Main Street, Hornick, IA 51026.
City of Lawton	City Hall, 101 East Maple Street, Lawton, IA 51030.
City of Moville	City Hall, 21 Main Street, Moville, IA 51039.

City of Oto	City Hall, 27 Washington Street, Oto, IA 51044.
City of Pierson	City Hall, 201 Main Street, Pierson, IA 51048.
City of Salix	City Hall, 317 Tipton Street, Salix, IA 51052.
City of Sergeant Bluff	City Hall, 401 4th Street, Sergeant Bluff, IA 51054.
City of Sioux City	City Hall, Planning Division, 405 6th Street, Sioux City, IA 51102.
City of Sloan	City Hall, 428 Evans Street, Sloan, IA 51055.
City of Smithland	City Hall, 110 West Jackson Street, Smithland, IA 51056.
Unincorporated Areas of Woodbury County	Woodbury County Courthouse, Office of Planning and Zoning, 620 Douglas Street, Sioux City, IA 51101.
Winnebago Indian Tribe	Blackhawk Center, Administrative Offices, 100 Bluff Street, Winnebago, NE 68071.

Nemaha County, Kansas and Incorporated Areas
Project: 19–07–0010S Preliminary Date: November 10, 2020

City of Centralia	City Hall, 517 4th Street, Centralia, KS 66415.
City of Goff	Nemaha County Courthouse, 607 Nemaha Street, Seneca, KS 66538.
City of Oneida	Nemaha County Courthouse, 607 Nemaha Street, Seneca, KS 66538.
City of Sabetha	City Hall, 805 Main Street, Sabetha, KS 66534.
City of Seneca	City Hall, 531 Main Street, Seneca, KS 66538.
City of Wetmore	City Hall, 335 2nd Street, Wetmore, KS 66550.
Unincorporated Areas of Nemaha County	Nemaha County Courthouse, 607 Nemaha Street, Seneca, KS 66538.

Koochiching County, Minnesota and Incorporated Areas
Project: 17–05–1794S Preliminary Date: July 9, 2020

City of Big Falls	City Office, 410 2nd Street Northwest, Big Falls, MN 56627.
City of International Falls	Municipal Building, City Administrator's Office, 600 4th Street, International Falls, MN 56649.
City of Littlefork	City Hall, 901 Main Street, Littlefork, MN 56653.
City of Ranier	Community Building, 2099 Spruce Street, Ranier, MN 56668.
Red Lake Band of Chippewa Tribe	Red Lake Nation Government Center, 15484 Migizi Drive, Red Lake, MN 56671.
Unincorporated Areas of Koochiching County	Koochiching County Environmental Services Department, 715 4th Street, International Falls, MN 56649.

Nicollet County, Minnesota and Incorporated Areas
Project: 06–05–B980S Preliminary Dates: February 12, 2018 and February 28, 2020

City of Courtland	City Office, 300 Railroad Street, Courtland, MN 56021.
City of Mankato	Intergovernmental Center, 10 Civic Center Plaza, Mankato, MN 56001.
City of North Mankato	City Hall, 1001 Belgrade Avenue, North Mankato, MN 56003.
City of Saint Peter	Department of Public Works, 405 Saint Julian Street, Saint Peter, MN 56082.
Unincorporated Areas of Nicollet County	Nicollet County Government Center, 501 South Minnesota Avenue, Saint Peter, MN 56082–2543.

Allen County, Ohio and Incorporated Areas
Project: 14–05–4448S Preliminary Date: December 14, 2020

City of Delphos	Municipal Building, 608 North Canal Street, Delphos, OH 45833.
City of Lima	Municipal Center, 50 Town Square, Lima, OH 45801.
Unincorporated Areas of Allen County	Allen County Board of Elections, 204 North Main Street, Suite 301, Lima, OH 45801.
Village of Elida	Town Hall, 406 East Main Street, Elida, OH 45807.
Village of Lafayette	Community Building, 225 East Sugar Street, Lafayette, OH 45854.

Ottawa County, Ohio and Incorporated Areas
Project: 13–05–1802S Preliminary Date: December 8, 2020

City of Port Clinton	City Hall, 1868 East Perry Street, Port Clinton, OH 43452.
Unincorporated Areas of Ottawa County	Ottawa County Regional Planning Office, 315 Madison Street, Room 107, Port Clinton, OH 43452.
Village of Marblehead	Village Hall, 513 West Main Street, Marblehead, OH 43440.
Village of Put-in-Bay	Village Hall, 157 Concord Avenue, Put-in-Bay, OH 43456.

[FR Doc. 2021–13839 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–12–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Docket ID FEMA–2021–0002; Internal Agency Docket No. FEMA–B–2143]

Changes in Flood Hazard Determinations

AGENCY: Federal Emergency Management Agency, Department of Homeland Security.

ACTION: Notice.

SUMMARY: This notice lists communities where the addition or modification of Base Flood Elevations (BFEs), base flood depths, Special Flood Hazard Area (SFHA) boundaries or zone designations, or the regulatory floodway (hereinafter referred to as flood hazard determinations), as shown on the Flood Insurance Rate Maps (FIRMs), and where applicable, in the supporting Flood Insurance Study (FIS) reports, prepared by the Federal Emergency Management Agency (FEMA) for each community, is appropriate because of new scientific or technical data. The FIRM, and where applicable, portions of the FIS report, have been revised to reflect these flood hazard determinations through issuance of a Letter of Map Revision (LOMR), in accordance with Federal Regulations. The LOMR will be used by insurance agents and others to calculate appropriate flood insurance premium rates for new buildings and the contents of those buildings. For rating purposes, the currently effective community number is shown in the table below and must be used for all new policies and renewals.

DATES: These flood hazard determinations will be finalized on the dates listed in the table below and revise the FIRM panels and FIS report in effect prior to this determination for the listed communities.

From the date of the second publication of notification of these changes in a newspaper of local circulation, any person has 90 days in which to request through the community that the Deputy Associate Administrator for Insurance and Mitigation reconsider the changes. The flood hazard determination information may be changed during the 90-day period.

ADDRESSES: The affected communities are listed in the table below. Revised flood hazard information for each community is available for inspection at both the online location and the respective community map repository address listed in the table below. Additionally, the current effective FIRM and FIS report for each community are accessible online through the FEMA Map Service Center at *https://msc.fema.gov* for comparison.

Submit comments and/or appeals to the Chief Executive Officer of the community as listed in the table below.

FOR FURTHER INFORMATION CONTACT: Rick Sacbibit, Chief, Engineering Services Branch, Federal Insurance and Mitigation Administration, FEMA, 400 C Street SW, Washington, DC 20472, (202) 646–7659, or (email) *patrick.sacbibit@fema.dhs.gov;* or visit the FEMA Mapping and Insurance eXchange (FMIX) online at *https://www.floodmaps.fema.gov/fhm/fmx_main.html.*

SUPPLEMENTARY INFORMATION: The specific flood hazard determinations are not described for each community in this notice. However, the online location and local community map repository address where the flood hazard determination information is available for inspection is provided.

Any request for reconsideration of flood hazard determinations must be submitted to the Chief Executive Officer of the community as listed in the table below.

The modifications are made pursuant to section 201 of the Flood Disaster Protection Act of 1973, 42 U.S.C. 4105, and are in accordance with the National Flood Insurance Act of 1968, 42 U.S.C. 4001 *et seq.,* and with 44 CFR part 65.

The FIRM and FIS report are the basis of the floodplain management measures that the community is required either to adopt or to show evidence of having in effect in order to qualify or remain qualified for participation in the National Flood Insurance Program (NFIP).

These flood hazard determinations, together with the floodplain management criteria required by 44 CFR 60.3, are the minimum that are required. They should not be construed to mean that the community must change any existing ordinances that are more stringent in their floodplain management requirements. The community may at any time enact stricter requirements of its own or pursuant to policies established by other Federal, State, or regional entities. The flood hazard determinations are in accordance with 44 CFR 65.4.

The affected communities are listed in the following table. Flood hazard determination information for each community is available for inspection at both the online location and the respective community map repository address listed in the table below. Additionally, the current effective FIRM and FIS report for each community are accessible online through the FEMA Map Service Center at *https://msc.fema.gov* for comparison.

(Catalog of Federal Domestic Assistance No. 97.022, ''Flood Insurance.'')

Michael M. Grimm,

Assistant Administrator for Risk Management, Department of Homeland Security, Federal Emergency Management Agency.

State and county	Location and case No.	Chief executive officer of community	Community map repository	Online location of letter of map revision	Date of modification	Community No.
Colorado:						
Eagle	Unincorporated areas of Eagle County (20–08–0688P).	Mr. Jeff Schroll, Eagle County Manager, P.O. Box 850, Eagle, CO 81631.	Eagle County Engineering Department, 500 Broadway Street, Eagle, CO 81631.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 17, 2021	080051
Teller	City of Cripple Creek (20–08–0744P).	The Honorable Milford Ashworth, Mayor, City of Cripple Creek, P.O. Box 430, Cripple Creek, CO 80813.	City Hall, 337 East Bennett Avenue, Cripple Creek, CO 80813.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 23, 2021	080174
Teller	Unincorporated areas of Teller County (20–08–0744P).	The Honorable Bob Campbell, Chairman, Teller County Board of County Commissioners, P.O. Box 959, Cripple Creek, CO 80813.	Teller County Planning Department, 800 Research Drive, Woodland Park, CO 80863.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 23, 2021	080173
Florida:						

State and county	Location and case No.	Chief executive officer of community	Community map repository	Online location of letter of map revision	Date of modification	Community No.
Alachua	Unincorporated areas of Alachua County (20–04–4498P).	Ms. Michele L. Lieberman, Alachua County Manager, 12 Southeast 1st Street, Gainesville, FL 32601.	Alachua County Public Works Department, 5620 Northwest 120th Lane, Gainesville, FL 32653.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 17, 2021	120001
Broward	City of Oakland Park (21–04–0055P).	The Honorable Jane F. Bolin, Mayor, City of Oakland Park, 3650 Northeast 12th Avenue, Oakland Park, FL 33334.	City Hall, 3650 Northeast 12th Avenue, Oakland Park, FL 33334.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 27, 2021	120050
Broward	City of Tamarac (21–04–0055P).	The Honorable Michelle J. Gomez, Mayor, City of Tamarac, 7525 Northwest 88th Avenue, Tamarac, FL 33321.	City Hall, 7525 Northwest 88th Avenue, Tamarac, FL 33321.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 27, 2021	120058
Charlotte	Unincorporated areas of Charlotte County (20–04–5508P).	The Honorable Bill Truex, Chairman, Charlotte County Board of Commissioners, 18500 Murdock Circle, Suite 536, Port Charlotte, FL 33948.	Charlotte County Community Development Department, 18500 Murdock Circle, Port Charlotte, FL 33948.	*https://msc.fema.gov/portal/advanceSearch.*	Oct. 6, 2021	120061
Hillsborough	City of Plant City, (21–04–0113P).	The Honorable Rick Lott, Mayor, City of Plant City, 302 West Reynolds Street, Plant City, FL 33563.	City Hall, 302 West Reynolds Street, Plant City, FL 33563.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 13, 2021	120113
Monroe	Unincorporated areas of Monroe County (21–04–1248P).	The Honorable Michelle Coldiron, Mayor, Monroe County Board of Commissioners, 25 Ships Way, Big Pine Key, FL 33043.	Monroe County Building Department, 2798 Overseas Highway, Suite 300, Marathon, FL 33050.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 13, 2021	125129
Palm Beach	Village of Royal Palm Beach, (20–04–0685P).	The Honorable Fred Pinto, Mayor, Village of Royal Palm Beach, 1050 Royal Palm Beach Boulevard, Royal Palm Beach, FL 33411.	Village Hall, 1050 Royal Palm Beach Boulevard, Royal Palm Beach, FL 33411.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 17, 2021	120225
Polk	Unincorporated areas of Polk County (20–04–6127P).	Mr. Bill Beasley, Polk County Manager, 330 West Church Street, Bartow, FL 33831.	Polk County Floodplain Management Department, 330 West Church Street, Bartow, FL 33831.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 30, 2021	120261
Georgia:						
Cobb	City of Smyrna (20–04–5692P).	The Honorable Derek Norton, Mayor, City of Smyrna, 2800 King Street, Smyrna, GA 30080.	Public Works Department, 2190 Atlanta Road, Smyrna, GA 30080.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 7, 2021	130057
Cobb	Unincorporated areas of Cobb County (20–04–5692P).	The Honorable Lisa Cupid, Chair, Cobb County Board of Commissioners, 100 Cherokee Street, Suite 300, Marietta, GA 30090.	Cobb County Stormwater Management Division, 660 South Cobb Drive, Marietta, GA 30060.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 7, 2021	130052
Fulton	City of Atlanta, (20–04–5692P).	The Honorable Keisha Lance Bottoms, Mayor, City of Atlanta, 55 Trinity Avenue, Suite 2500, Atlanta, GA 30303.	City Hall, 72 Marietta Street Northwest, Atlanta, GA 30303.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 7, 2021	135157
North Dakota: Burleigh.	City of Bismarck (21–08–0028P).	The Honorable Steven Bakken, Mayor, City of Bismarck, P.O. Box 5503, Bismarck, ND 58506.	Community Development Department, 221 North 5th Street, Bismarck, ND 58501.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 23, 2021	380149
Texas:						
Denton	Town of Northlake (20–06–3532P).	The Honorable David Rettig, Mayor, Town of Northlake, 1500 Commons Circle, Suite 300, Northlake, TX 76226.	Public Works Department, 1400 F.M. 407, Northlake, TX 76247.	*https://msc.fema.gov/portal/advanceSearch.*	Oct. 4, 2021	480782
Travis	City of Pflugerville (21–06–0412P).	The Honorable Victor Gonzales, Mayor, City of Pflugerville, P.O. Box 589, Pflugerville, TX 78691.	Planning and Development Services Center, 201–B East Pecan Street, Pflugerville, TX 78691.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 27, 2021	481028

State and county	Location and case No.	Chief executive officer of community	Community map repository	Online location of letter of map revision	Date of modification	Community No.
Travis	Unincorporated areas of Travis County (21–06–0412P).	The Honorable Andy Brown, Travis County Judge, P.O. Box 1748, Austin, TX 78767.	Travis County Transportation and Natural Resources Department, 700 Lavaca Street, 5th Floor, Austin, TX 78701.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 16, 2021	481026
Virginia: King and Queen.	Unincorporated areas of King and Queen County (21–03–0727P).	Mr. Thomas J. Swartzwelder, Administrator, King and Queen County, P.O. Box 177, King and Queen C.H., VA 23085.	King and Queen County Administrator's Office, 242 Allens Circle, Suite L, King and Queen C.H., VA 23085.	*https://msc.fema.gov/portal/advanceSearch.*	Sep. 23, 2021	510082

[FR Doc. 2021–13862 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–12–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Docket ID FEMA–2014–0022]

Technical Mapping Advisory Council

AGENCY: Federal Emergency Management Agency, Department of Homeland Security.

ACTION: Request for applicants for appointment to the Federal Emergency Management Agency's Technical Mapping Advisory Council.

SUMMARY: The Federal Emergency Management Agency (FEMA) is requesting qualified individuals interested in serving on the Technical Mapping Advisory Council (TMAC) to apply for appointment. As provided for in the *Biggert-Waters Flood Insurance Reform Act of 2012,* the TMAC makes recommendations to the FEMA Administrator on how to improve, in a cost-effective manner, the accuracy, general quality, ease of use, and distribution and dissemination of Flood Insurance Rate Maps (FIRMs) and risk data; and performance metrics and milestones required to effectively and efficiently map flood risk areas in the United States. The appointments are for 3 years each and applicants will be considered for appointment for the five vacancies on the TMAC.

DATES: Applications will be accepted until 11:59 p.m. ET on July 30, 2021.

ADDRESSES: Applications for membership should be submitted by one of the following methods:

- *Email: FEMA-TMAC@fema.dhs.gov.*
- *Mail:* FEMA, Federal Insurance and Mitigation Administration, Risk Management Directorate, Attn: Brian Koper, 400 C Street SW, Suite 6NW–1412, Washington, DC 20472–3020.

FOR FURTHER INFORMATION CONTACT: Brian Koper, Designated Federal Officer for the TMAC, FEMA, Federal Insurance and Mitigation Administration, Risk Management Directorate, 400 C Street SW, Suite 6NW–1412, Washington, DC 20472–3020, (202) 733–7859, *FEMA-TMAC@fema.dhs.gov.* The TMAC website is: *http://www.fema.gov/TMAC.*

SUPPLEMENTARY INFORMATION: The TMAC is an advisory committee that was established by the *Biggert-Waters Flood Insurance Reform Act of 2012,* 42 U.S.C. 4101a, and in accordance with provisions of the Federal Advisory Committee Act (FACA), 5 U.S.C. App. (Pub. L. 92–463). The TMAC is required to make recommendations to FEMA on mapping-related issues and activities, including mapping standards and guidelines, performance metrics and milestones, map maintenance, interagency and intergovernmental coordination, map accuracy, and funding strategies. In addition, the TMAC is required to submit an annual report to the FEMA Administrator that contains: (1) A description of the activities of the Council; (2) an evaluation of the status and performance of FIRMs and mapping activities to revise and update FIRMs; and (3) a summary of recommendations made by the Council to the FEMA Administrator.

Members of the TMAC will be appointed based on their demonstrated knowledge and competence in areas such as surveying, cartography, remote sensing, geographic information systems, or the technical aspects of preparing and using FIRMs. To the maximum extent practicable, FEMA will ensure that membership of the TMAC has a balance of Federal, State, local, Tribal, and private members, and includes geographic diversity.

FEMA is requesting qualified individuals who are interested in serving on the TMAC to apply for appointment. Applicants will be considered for appointment for five vacancies on the TMAC, the terms of which start in late March 2022. Certain members of the TMAC, as described below, will be appointed to serve as Special Government Employees (SGE) as defined in title 18 U.S.C. 202(a). Candidates selected for appointment will be subject to the Federal conflict of interest laws and standard of conduct regulations and required to file a New Entrant Confidential Disclosure Report (OGE 450). This form can be obtained by visiting the website of the Office of Government Ethics (*http://www.oge.gov*). Please do not submit this form with your application. Qualified applicants will be considered for one or more of the following membership categories with vacancies:

(a) One representative of a State government agency that has entered into cooperating technical partnerships with the Administrator and has demonstrated the capability to produce FIRMs;

(b) One representative of a local government agency that has entered into cooperating technical partnerships with the Administrator and has demonstrated the capability to produce FIRMs;

(c) One member of a recognized professional surveying association or organization;

(d) One member of a recognized regional flood and storm water management organization; and

(e) One member of a recognized risk management association or organization.

Members of the TMAC serve terms of office for 3 years. There is no application form. However, applications must include the following information:

- The applicant's full name;
- home and business phone numbers;
- preferred email address;
- home and business mailing addresses;
- current position title and organization;
- resume or curriculum vitae; and
- the membership category of interest (*e.g.,* member of a recognized professional association or organization representing flood hazard determination firms).

The TMAC shall meet as often as needed to fulfill its mission, but not less than twice a year. Members may be reimbursed for travel and per diem incurred in the performance of their

duties as members of the TMAC. All travel for TMAC business must be approved in advance by the Designated Federal Officer.

The Department of Homeland Security (DHS) does not discriminate in employment on the basis of race, color, religion, sex, national origin, political affiliation, sexual orientation, gender identity, marital status, disability and genetic information, age, membership in an employee organization, or other non-merit factor. DHS strives to achieve a widely diverse candidate pool for all its recruitment actions. Current DHS and FEMA employees will not be considered for membership. Federally registered lobbyists will not be considered for SGE appointments.

David I. Maurstad,

Deputy Associate Administrator, Federal Insurance and Mitigation Administration.

[FR Doc. 2021–13843 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–12–P

DEPARTMENT OF HOMELAND SECURITY

Federal Emergency Management Agency

[Docket ID: FEMA–2021–0018; OMB No. 1660–NW132]

Agency Information Collection Activities: Proposed Collection; Comment Request; FEMA-Administered Disaster Case Management Intake Form

AGENCY: Federal Emergency Management Agency, Department of Homeland Security.

ACTION: 60-Day notice of new collection and request for comments.

SUMMARY: The Federal Emergency Management Agency (FEMA), as part of its continuing effort to reduce paperwork and respondent burden, invites the general public to take this opportunity to comment on a new information collection. In accordance with the Paperwork Reduction Act of 1995, this notice seeks comments concerning information collected during the intake process for a FEMA-administered Disaster Case Management (DCM) program implemented following a major disaster declaration.

DATES: Comments must be submitted on or before August 30, 2021.

ADDRESSES: Submit comments at *www.regulations.gov* under Docket ID FEMA–2021–0018. Follow the instructions for submitting comments.

All submissions received must include the agency name and Docket ID, and will be posted, without change, to the Federal eRulemaking Portal at *http://www.regulations.gov,* and will include any personal information you provide. Therefore, submitting this information makes it public. You may wish to read the Privacy and Security Notice that is available via a link on the homepage of *www.regulations.gov.*

FOR FURTHER INFORMATION CONTACT: Rebekah Kennedy, Team Lead, Community Services Section, Individual Assistance Division, *rebekah.kennedy@fema.dhs.gov* or (202) 212–1175. You may contact the Information Management Division for copies of the proposed collection of information at email address: *FEMA-Information-Collections-Management@fema.dhs.gov.*

SUPPLEMENTARY INFORMATION: Pursuant to Executive Order (E.O.) 12148, as amended by E.O. 12673 and E.O. 13286, the President of the United States has delegated to the Department of Homeland Security (DHS), including FEMA, the authority to provide case management services as stated in the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act), 42 U.S.C. 5189d. Under the Stafford Act, FEMA may provide DCM services directly to survivors through financial assistance to state, tribal, or local government agencies or qualified private organizations. DCM services include identifying and addressing disaster-caused unmet needs of survivors through identification of, and referrals to, available resources. A disaster-caused unmet need is an un-resourced item, support, or assistance that has been assessed and verified as necessary for a survivor to recover from a disaster. This may include food, clothing, shelter, first aid, emotional and spiritual care, household items, home repair, or rebuilding.

When a case manager speaks to a survivor, they will ask the survivor to provide information through a series of questions (data elements), as outlined within the intake form. This will allow the case manager to better understand the survivor's disaster-caused unmet needs and to then assist them with obtaining the resources needed. The information gathered within this collection tool is used to determine the survivor's disaster-caused unmet needs, to identify what types of referrals the case manager may provide, and to decide whether there is a need to meet again to address continuing disaster-caused unmet needs. Case managers then type the responses to the data elements into their proprietary electronic secured case management database.

Collection of Information

Title: FEMA-Administered Disaster Case Management Intake Form.

Type of Information Collection: New information collection.

OMB Number: 1660–NW132.

FEMA Forms: FF–104–FY–21–146 and FF–104–FY–21–147.

Abstract: This collection tool will primarily be used as a guide to support FEMA-administered DCM case managers by outlining the allowable data elements they can collect from survivors on behalf of FEMA. While there will be a paper collection tool, the case managers will primarily be using the tool as a reference of data elements they can collect, and using their own case management database systems to guide the order in which the elements are collected. The elements within the tool are used to assess, screen, and refer disaster survivors to available resources that address their specific disaster-related unmet needs. Case managers then take the information from the intake form and manually upload the data into their secured case management database.

Prior to any data collection, survivors will complete and sign a FEMA-administered DCM Consent Form, authorizing FEMA, or its agent, to collect data from the survivor in order to effectively provide case management services.

Affected Public: Survivors of Presidentially declared major disasters where a FEMA-administered Disaster Case Management program is implemented.

Estimated Number of Respondents: 75,000.

Estimated Number of Responses: 75,000.

Estimated Total Annual Burden Hours: 48,000 burden hours.

Estimated Total Annual Respondent Cost: $1,746,240.

Estimated Respondents' Operation and Maintenance Costs: $0.

Estimated Respondents' Capital and Start-Up Costs: $0.

Estimated Total Annual Cost to the Federal Government: $51,640,374.

Comments

Comments may be submitted as indicated in the **ADDRESS** caption above. Comments are solicited to (a) evaluate whether the proposed data collection is necessary for the proper performance of the agency, including whether the information shall have practical utility; (b) evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and

assumptions used; (c) enhance the quality, utility, and clarity of the information to be collected; and (d) minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, *e.g.,* permitting electronic submission of responses.

Millicent L. Brown,

Senior Manager, Records Management Branch, Office of the Chief Administrative Officer, Mission Support, Federal Emergency Management Agency, Department of Homeland Security.

[FR Doc. 2021–13869 Filed 6–28–21; 8:45 am]

BILLING CODE 9111–24–P

DEPARTMENT OF HOMELAND SECURITY

[Docket No. CISA–2021–0003]

Correction to Notice of Request for Revision of a Currently Approved Information Collection 1670–0014 for the Chemical Facility Anti-Terrorism Standards (CFATS)

AGENCY: Cybersecurity and Infrastructure Security Agency, DHS.

ACTION: Correction; extension of comment period.

SUMMARY: On June 23, 2021, the Cybersecurity and Infrastructure Security Agency (CISA) published a 30-day notice and requested comments to revise Information Collection Request (ICR) 1670–0014 in the **Federal Register**. This notice revises the instructions on how to submit public comments; provides an updated phone number for the point of contact; and updates the comment period for this notice.

DATES: Comments are due by July 29, 2021.

ADDRESSES: Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to *www.reginfo.gov/public/do/PRAMain.* Find this particular information collection by selecting ''Currently under 30-day Review—Open for Public Comments'' or by using the search function.

Comments submitted in response to this notice may be made available to the public through relevant public websites. For this reason, please do not include in your comments information of a confidential nature, such as sensitive personal information or proprietary information. Please note that responses to this public comment request containing any routine notice about the confidentiality of the communication will be treated as public comments that may be made available to the public notwithstanding the inclusion of the routine notice. Comments that include protected information such as trade secrets, confidential commercial or financial information, Chemical-terrorism Vulnerability Information (CVI),[1] Sensitive Security Information (SSI),[2] or Protected Critical Infrastructure Information (PCII) [3] should not be submitted to the public docket. Comments containing protected information should be appropriately marked and packaged in accordance with all applicable requirements and submission must be coordinated with the point of contact for this notice provided in **FOR FURTHER INFORMATION CONTACT** section. CISA will forward all comments containing protected information that are received before the submission deadline to the OMB Desk Officer.

FOR FURTHER INFORMATION CONTACT: Lona Saccomando, 202–579–0590, *CISARegulations@cisa.dhs.gov*.

SUPPLEMENTARY INFORMATION: CISA published the required 30-day notice for ICR 1670–0014 in the **Federal Register** on June 23, 2021. See 86 FR 32953. The June 23, 2021 notice incorrectly instructed the public to submit comments using the Federal eRulemaking Portal. The correct instructions are provided in the **ADDRESSES** section of this notice. Any comments that are submitted using the Federal eRulemaking Portal will be forwarded to the OMB Desk Officer by CISA. The June 23, 2021 notice provided a nonworking phone number for the point of contact; therefore, an updated phone number has been provided in the **FOR FURTHER INFORMATION CONTACT** section. The June 23, 2021 notice also indicated that the comment period would be open for 60 days, instead of 30 days. The comment period has been updated in the **DATES** section of this notice. Public comments will be accepted for 30 days after the publication date of this corrective notice. Finally, CISA clarifies that it received one nongermane comment in response to the 60-day notice for ICR 1670–0014.[4]

Authority: 6 U.S.C. 621–629.

Samuel Vazquez,

Acting Chief Information Officer, Department of Homeland Security, Cybersecurity and Infrastructure Security Agency.

[FR Doc. 2021–13852 Filed 6–28–21; 8:45 am]

BILLING CODE 9110–9P–P

[1] For more information about CVI see 6 CFR 27.400 and the CVI Procedural Manual at *www.dhs.gov/publication/safeguarding-cvi-manual.*

[2] For more information about SSI see 49 CFR part 1520 and the SSI Program web page at *www.tsa.gov/for-industry/sensitive-security-information.*

[3] For more information about PCII see 6 CFR part 29 and the PCII Program web page at*www.dhs.gov/pcii-program.*

[4] The nongermane comment may be viewed at *https://www.regulations.gov/comment/CISA-2021-0003-0002.*

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR–7034–N–32]

30-Day Notice of Proposed Information Collection: Semi-Annual Labor Standards Enforcement Report, Local Contracting Agencies (HUD Programs), OMB Control No.: 2501–0019

AGENCY: Office of the Chief Information Officer, HUD.

ACTION: Notice.

SUMMARY: HUD is seeking approval from the Office of Management and Budget (OMB) for the information collection described below. In accordance with the Paperwork Reduction Act, HUD is requesting comment from all interested parties on the proposed collection of information. The purpose of this notice is to allow for 30 days of public comment.

DATES: *Comments Due Date:* July 29, 2021.

ADDRESSES: Interested persons are invited to submit comments regarding this proposal. Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to *OIRA_submission@omb.eop.gov* or *www.reginfo.gov/public/do/PRAMain.* Find this particular information collection by selecting ''Currently under 30-day Review—Open for Public Comments'' or by using the search function.

FOR FURTHER INFORMATION CONTACT: Anna P. Guido, Reports Management Officer, QMAC, Department of Housing and Urban Development, 451 7th Street SW, Washington, DC 20410; email her at *Anna.P.Guido@hud.gov* or telephone 202–402–5535. This is not a toll-free number. Person with hearing or speech impairments may access this number through TTY by calling the toll-free Federal Relay Service at (800) 877–8339. Copies of available documents submitted to OMB may be obtained from Ms. Guido.

SUPPLEMENTARY INFORMATION: This notice informs the public that HUD is seeking approval from OMB for the information collection described in Section A. The **Federal Register** notice that solicited public comment on the information collection for a period of 60 days was published on March 19, 2021 at 86 FR 14952.

A. Overview of Information Collection

Title of Information Collection: Semi-Annual Labor Standards Enforcement Report Local Contracting agencies (HUD Programs).

OMB Approval Number: 2501–0019.

Type of Request: Reinstatement with change of a currently approved collection.

Form Number: HUD FORM 4710, 4710i.

Description of the need for the information and proposed use:

The Department of Labor (DOL) Regulations 29 CFR 5.7(b), requires Federal agencies administering programs subject to Davis-Bacon and Related Act (DBRA) and Contract Work Hours and Safety Standards Act (CWHSSA) labor standards to furnish a Semi-Annual Labor Standards Enforcement Report to the Administrator of the Wage and Hour Division. Some HUD programs are administered by state and local agencies for the labor standards compliance. HUD must collect information from such agencies in order to capture enforcement activities for all HUD programs in its reports to DOL.

Information collection	Number of respondents	Frequency of response	Responses per annum	Burden hour per response	Annual burden hours	Hourly cost per response	Annual cost
HUD 4710 Semi-annual Labor Standards Enforcement Report—Local Contracting Agencies	4,870	2	9,740	2.5	24,350	$37.34	$909,229
HUD 4710i Instruction to fill out the above form	0	0	0	0	0	0	0
Total	4,870	2	9,740	2.5	24,350	37.34	909,229

B. Solicitation of Public Comment

This notice is soliciting comments from members of the public and affected parties concerning the collection of information described in Section A on the following:

(1) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(2) If the information will be processed and used in a timely manner;

(3) The accuracy of the agency's estimate of the burden of the proposed collection of information;

(4) Ways to enhance the quality, utility, and clarity of the information to be collected; and

(5) Ways to minimize the burden of the collection of information on those who are to respond; including through the use of appropriate automated collection techniques or other forms of information technology, *e.g.,* permitting electronic submission of responses.

HUD encourages interested parties to submit comment in response to these questions.

C. Authority

Section 3507 of the Paperwork Reduction Act of 1995, 44 U.S.C. chapter 35.

Anna P. Guido,

Department Reports Management Officer, Office of the Chief Information Officer.

[FR Doc. 2021–13769 Filed 6–28–21; 8:45 am]

BILLING CODE 4210–67–P

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR–7034–N–33]

30-Day Notice of Proposed Information Collection: Budget-Based Rent Adjustment Requests and Appeals, OMB Control No.: 2502–0324

AGENCY: Office of the Chief Information Officer, HUD.

ACTION: Notice.

SUMMARY: HUD has submitted the proposed information collection requirement described below to the Office of Management and Budget (OMB) for review, in accordance with the Paperwork Reduction Act. The purpose of this notice is to allow for an additional 30 days of public comment.

DATES: *Comments Due Date:* August 30, 2021.

ADDRESSES: Interested persons are invited to submit comments regarding this proposal. Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to *www.reginfo.gov/public/do/Start* Printed Page 15501PRAMain. Find this particular information collection by selecting ''Currently under 30-day Review—Open for Public Comments'' or by using the search function.

FOR FURTHER INFORMATION CONTACT: Colette Pollard, Reports Management Officer, QDAM, Department of Housing and Urban Development, 451 7th Street SW, Washington, DC 20410; email Colette Pollard at *Colette.Pollard@hud.gov* or telephone 202–402–3400. This is not a toll-free number. Persons with hearing or speech impairments may access this number through TTY by calling the toll-free Federal Relay Service at (800) 877–8339.

Copies of available documents submitted to OMB may be obtained from Ms. Pollard.

SUPPLEMENTARY INFORMATION: This notice informs the public that HUD has submitted to OMB a request for approval of the information collection described in Section A. The **Federal Register** notice that solicited public comment on the information collection for a period of 60 days was published on February 25, 2020 at 85 FR 10710.

A. Overview of Information Collection

Title of Information Collection: Budget Based Rent Adjustment Request and Appeals.

OMB Approval Number: 2502–0324.

OMB Expiration Date: 6/30/21.

Type of Request: Revision of currently approved collection.

Form Number: HUD–92457-a.

Description of the need for the information and proposed use: Budget worksheet will be used by HUD Field staff, along with other information submitted by owners, as a tool for determining the reasonableness of rent increases. The purposes of the worksheet and the collection of budgetary information are to allow owners to plan for expected increases in expenditures. Owners are able to appeal

denial decisions of their requests. The updated burden hours include the time for owners to prepare and submit appeal requests to the field staff.

Respondents: Not-for-profit institutions; Owners and project managers of HUD subsidized properties.

Estimated Number of Respondents: 974.

Estimated Number of Responses: 1,074.

Frequency of Response: Annual.

Average Hours per Response: 3 hours 40 minutes.

Total Estimated Burden: 5346.75.

B. Solicitation of Public Comment

This notice is soliciting comments from members of the public and affected parties concerning the collection of information described in Section A on the following:

(1) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(2) The accuracy of the agency's estimate of the burden of the proposed collection of information;

(3) Ways to enhance the quality, utility, and clarity of the information to be collected; and

(4) Ways to minimize the burden of the collection of information on those who are to respond; including through the use of appropriate automated collection techniques or other forms of information technology, *e.g.,* permitting electronic submission of responses.

(5) Ways to minimize the burden of the collection of information on those who are to respond, including the use of automated collection techniques or other forms of information technology.

HUD encourages interested parties to submit comment in response to these questions.

C. Authority

Section 3507 of the Paperwork Reduction Act of 1995, 44 U.S.C. chapter 35.

Colette Pollard,

Department Reports Management Officer, Office of the Chief Information.

[FR Doc. 2021–13777 Filed 6–28–21; 8:45 am]

BILLING CODE 4210–67–P

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

[Docket No. FR–7034–N–34]

30-Day Notice of Proposed Information Collection: Requirements for Single Family Mortgage Instruments, OMB Control No.: 2502–0404

AGENCY: Office of the Chief Information Officer, HUD.

ACTION: Notice.

SUMMARY: HUD has submitted the proposed information collection requirement described below to the Office of Management and Budget (OMB) for review, in accordance with the Paperwork Reduction Act. The purpose of this notice is to allow for an additional 30 days of public comment.

DATES: *Comments Due Date:* July 29, 2021.

ADDRESSES: Interested persons are invited to submit comments regarding this proposal. Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to *www.reginfo.gov/public/do/Start* Printed Page 15501PRAMain. Find this particular information collection by selecting ''Currently under 30-day Review—Open for Public Comments'' or by using the search function.

FOR FURTHER INFORMATION CONTACT: Colette Pollard, Reports Management Officer, QDAM, Department of Housing and Urban Development, 451 7th Street SW, Room 4176, Washington, DC 20410–5000; telephone 202–402–3400 (this is not a toll-free number) or email at *Colette.Pollard@hud.gov.* Copies of available documents submitted to OMB may be obtained.

SUPPLEMENTARY INFORMATION: This notice informs the public that HUD has submitted to OMB a request for approval of the information collection described in Section A. The **Federal Register** notice that solicited public comment on the information collection for a period of 60 days was published on October 9, 2020 at 85 FR 64154.

A. Overview of Information Collection

Title of Information Collection: Requirements for Single Family Mortgage Instruments.

OMB Approval Number: 2502–0404.

Type of Request: Extension.

Form Number: None.

Description of the need for the information and proposed use: This information is used to verify that a mortgage has been properly recorded and is eligible for FHA insurance.

Respondents: Individuals or household.

Estimated Number of Respondents: 2,312.

Estimated Number of Responses: 1,119,696.

Frequency of Response: 484.30.

Average Hours per Response: 0.08.

Total Estimated Burdens: 93,271.

B. Solicitation of Public Comment

This notice is soliciting comments from members of the public and affected parties concerning the collection of information described in Section A on the following:

(1) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

(2) The accuracy of the agency's estimate of the burden of the proposed collection of information;

(3) Ways to enhance the quality, utility, and clarity of the information to be collected; and

(4) Ways to minimize the burden of the collection of information on those who are to respond,; including through the use of appropriate automated collection techniques or other forms of information technology, *e.g.,* permitting electronic submission of responses.

(5) ways to minimize the burden of the collection of information on those who are to respond, including the use of automated collection techniques or other forms of information technology.

HUD encourages interested parties to submit comments in response to these questions.

C. Authority

Section 2 of the Paperwork Reduction Act of 1995, 44 U.S.C. 3507.

Colette Pollard,

Department Reports Management Officer, Office of the Chief Information Officer.

[FR Doc. 2021–13776 Filed 6–28–21; 8:45 am]

BILLING CODE 4210–67–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS–R1–ES–2020–N133; FXES11130100000–201–FF01E00000]

Endangered and Threatened Wildlife and Plants; Draft Recovery Plan for Four Subspecies of Mazama Pocket Gopher

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of availability; request for review and public comment.

SUMMARY: We, the U.S. Fish and Wildlife Service, announce the

availability of the Draft Recovery Plan for Four Subspecies of Mazama Pocket Gopher. The four subspecies, listed as threatened under the Endangered Species Act, are endemic to Thurston and Pierce Counties, Washington. We request review and comment on this draft recovery plan from Federal, State, and local agencies; Native American Tribes; and the public.

DATES: To ensure consideration, comments on the draft recovery plan must be received on or before August 30, 2021. However, we will accept information about any species at any time.

ADDRESSES: *Document availability:* Obtain the recovery plan by any of the following methods.

- *Internet: http://www.fws.gov/endangered/species/recovery-plans.html* or *http://www.fws.gov/pacific/ecoservices/endangered/recovery/plans.html.*
- *U.S. mail:* Tom McDowell, U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office, 510 Desmond Drive SE, Suite 102, Lacey, WA 98503; or
- *Telephone:* 360–753–9440.

Comment submission: You may submit written comments and materials by one of the following methods:

- *U.S. mail:* Tom McDowell, Washington Fish and Wildlife Office, at the above U.S. mail address.
- *Fax:* 360–753–9405.
- *Email: WFWO_LR@fws.gov.*

FOR FURTHER INFORMATION CONTACT: Brad Thompson, State Supervisor, U.S. Fish and Wildlife Service, Washington Fish and Wildlife Office, at the above U.S. mail address; telephone 360–753–4652. If you use a telecommunications device for the deaf, call the Federal Relay Service at 1–800–877–8339.

SUPPLEMENTARY INFORMATION: We, the U.S. Fish and Wildlife Service (Service), announce the availability of the Draft Recovery Plan for Four Subspecies of Mazama Pocket Gopher. The four subspecies, listed as threatened under the Endangered Species Act of 1973, as amended, are burrowing mammals endemic to Thurston and Pierce Counties, Washington. The draft recovery plan includes specific goals, objectives, and criteria that should be met to consider removing the species from the Federal List of Endangered and Threatened Wildlife. We request review and comment on this draft recovery plan from Federal, State, and local agencies; Native American Tribes; and the public.

Background

The Mazama pocket gopher is a fossorial (burrowing) mammal. In April 2014, the following four subspecies of Mazama pocket gopher, found in glacial outwash prairie habitats in the south Puget Sound region of western Washington State, were listed as threatened species pursuant to the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.;* Act) (79 FR 19760; April 9, 2014). The draft recovery plan covers these four subspecies.

Common name	Scientific name	Location
Roy Prairie pocket gopher	*Thomomys mazama glacialis*	Pierce County, Washington.
Olympia pocket gopher	*Thomomys mazama pugetensis*	Thurston County, Washington.
Tenino pocket gopher	*Thomomys mazama tumuli*	Thurston County, Washington.
Yelm pocket gopher	*Thomomys mazama yelmensis*	Thurston County, Washington.

Recovery Planning Process

Recovery of endangered and threatened animals and plants is a primary goal of our endangered species program. To help guide the recovery effort, we prepare recovery plans for most listed species. Recovery plans describe actions considered necessary for conservation of the species, establish criteria for downlisting or delisting, and estimate time and cost for implementing recovery measures.

Recovery Planning and Implementation

The Service has recently revised its approach to recovery planning, and is now using a new process termed Recovery Planning and Implementation (RPI) (see *https://www.fws.gov/endangered/esa-library/pdf/RPI.pdf*). The RPI approach is intended to reduce the time needed to develop and implement recovery plans, increase recovery plan relevancy over a longer timeframe, and add flexibility to recovery plans so they can be adjusted to new information or circumstances. Under RPI, a recovery plan includes the statutorily-required elements under section 4(f) of the Act (objective and measurable recovery criteria, site-specific management actions, and estimates of time and costs), along with a concise introduction and our strategy for how we plan to achieve species recovery. The RPI recovery plan is supported by two supplementary documents: A Species Status Assessment or Biological Report, which describes the best available scientific information related to the biological needs of the species and assessment of threats; and the Recovery Implementation Strategy, which details the particular near-term activities needed to implement the recovery actions identified in the recovery plan. Under this approach new information on species biology or details of recovery implementation may be incorporated by updating these supplementary documents without concurrent revision of the entire recovery plan, unless changes to statutorily required elements are necessary.

Recovery Plan Components

The Draft Recovery Plan for Four Subspecies of Mazama Pocket Gopher is supported by the Recovery Implementation Strategy, which is available at *https://www.fws.gov/wafwo/articles.cfm?id=149489725.*

The primary recovery strategy for the four Mazama pocket gopher subspecies is to conserve, restore, and properly manage the quantity, quality, and connectivity (or configuration) of their habitats to address habitat fragmentation, degradation, or loss, as well as to address other known threats, to ensure the long-term persistence and viability of each subspecies across its range. We may initiate an assessment of whether recovery has been achieved and delisting is warranted when the recovery criteria have been met, including establishment of protected Reserves managed over the long term for Mazama pocket gophers in each subspecies' range, with populations of at least 1,000 individuals and approximately 250 to 500 acres of medium- or high-quality habitat in each Reserve. Minimum numbers of Reserves required for each subspecies are as follows: At least three Reserves for the Roy Prairie pocket gopher; at least three Reserves for the Olympia pocket gopher; at least two Reserves for the Tenino pocket gopher; and at least seven Reserves for the Yelm pocket gopher. Locations of Reserves are described in detail in the draft recovery plan.

Request for Public Comments

Section 4(f) of the Act requires us to provide public notice and an

opportunity for public review and comment during recovery plan development. It is also our policy to request peer review of recovery plans (59 FR 34270; July 1, 1994). In an appendix to the approved final recovery plan, we will summarize and respond to the issues raised during public comment and peer review. Substantive comments may or may not result in changes to the recovery plan. Comments regarding recovery plan implementation will be forwarded as appropriate to Federal or other entities so that they can be taken into account during the course of implementing recovery actions.

We will consider all comments we receive by the date specified in **DATES** prior to final approval of the plan.

Public Availability of Comments

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Authority

The authority for this action is section 4(f) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Robyn Thorson,

Regional Director, U.S. Fish and Wildlife Service.

[FR Doc. 2021–13872 Filed 6–28–21; 8:45 am]

BILLING CODE 4333–15–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

[FWS–R6–ES–2020–N131; FXES11140600000]

Endangered and Threatened Wildlife and Plants; Draft Recovery Plan for Pagosa Skyrocket

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of document availability for review and comment.

SUMMARY: We, the U.S. Fish and Wildlife Service, announce the availability of a draft recovery plan for Pagosa skyrocket, a plant listed as endangered under the Endangered Species Act. We are requesting review and comment from the public on this draft plan.

DATES: We must receive any comments on the draft recovery plan on or before August 30, 2021.

ADDRESSES:

Document availability: Copies of the draft recovery plan are available at *http://www.fws.gov/endangered/species/recovery-plans.html.* Alternatively, you may request a copy by U.S. mail from the Western Colorado Field Office; 445 W. Gunnison Ave. #240; Grand Junction, CO 81501; or by telephone at 970–243–2778. Persons who use a telecommunications device for the deaf may call the Federal Relay Service at 800–877–8339.

Submitting comments: If you wish to comment on the draft recovery plan, you may submit your comments in writing by email to Ann Timberman, at *ann_timberman@fws.gov,* or by U.S. mail to Ann Timberman, Western Slope Field Supervisor, at the above U.S. mail address.

FOR FURTHER INFORMATION CONTACT: Ann Timberman, Western Slope Field Supervisor, at the above U.S. mail address or by telephone at 970–243–2778. Persons who use a telecommunications device for the deaf may call the Federal Relay Service at 800–877–8339.

SUPPLEMENTARY INFORMATION: We, the U.S. Fish and Wildlife Service (Service), announce the availability of a draft recovery plan for Pagosa skyrocket (*Ipomopsis polyantha*), a plant listed as endangered under the Endangered Species Act, as amended (Act; 16 U.S.C. 1531 *et seq.*). The draft recovery plan includes objective, measurable criteria, and site-specific management actions as may be necessary to remove the species from the Federal List of Endangered and Threatened Plants. We are requesting review and comment from the public on this draft recovery plan.

Species Information

On August 26, 2011, we listed Pagosa skyrocket as an endangered plant (July 27, 2011; 76 FR 45054). On August 13, 2012, we designated approximately 9,641 acres (ac) (3,902 hectares (ha)) of critical habitat (77 FR 48368).

Pagosa skyrocket is a narrow endemic plant, occurring only on soils of the Mancos shale formation in Archuleta County, Colorado. It occurs at between 6,400 to 8,100 feet (ft) (1,951–2,469 meters (m)) in elevation and typically grows on infrequently disturbed lightly vegetated sites or at the edge of ponderosa pine (*Pinus ponderosa*) forest (Anderson 2004, p. 20). Pagosa skyrocket appears able to self-pollinate when stressed, but reproduction is more successful when outcrossed (Anderson 2004, p. 23).

Pagosa skyrocket typically spends more than a year in a vegetative state before flowering and dying (monocarpic perennial). However, if conditions are ideal, it behaves as a biennial. It is a member of the Polemoniaceae (phlox) family and is regarded as a distinct species (Anderson 2004, p. 10).

We do not know the historical distribution of Pagosa skyrocket. Currently, we know of two populations––Pagosa Springs/Mill Creek and Dyke––occupying approximately 462 ac (187 ha) and located 13 miles (mi) (21 kilometers (km)) apart. Approximately 3.5 ac (1.4 ha) of occupied habitat occurs on Bureau of Land Management (BLM) land. The remainder of occupied habitat is located on private land, land owned by the Town of Pagosa Springs, highway rights of way (ROWs), and an 88-ac (36-ha) parcel owned and managed by Colorado Parks and Wildlife (CPW). The CPW parcel contains more than 90 percent of all known Pagosa skyrocket plants and is managed with the primary goal of conserving Pagosa skyrocket. All known occupied habitat for the species occurs within designated critical habitat.

The primary threat to Pagosa skyrocket, both at the time of listing and currently, is commercial, residential, agricultural, and municipal development. We have documented losses from development of habitat and individual plants for both populations. Without additional protections, we anticipate an increase in the magnitude of this threat affecting the species' future resiliency, redundancy, and representation. Overgrazing, invasive plants, and climate change may exacerbate the threat from development.

Several conservation actions have been initiated since listing in 2011 as follows:

(1) CPW acquired 88 ac (36 ha) of occupied Pagosa skyrocket critical habitat that had been slated for development. The primary management goal of this parcel is conservation of Pagosa skyrocket.

(2) Archuleta County incorporated Pagosa skyrocket preservation into the Archuleta County Community Plan to assist in recovering the species.

(3) The Town of Pagosa Springs Master Plan identified a goal to ''Strive to protect and celebrate the Pagosa skyrocket.''

(4) Volunteers and the Geothermal Greenhouse Partnership initiated greenhouse experiments to grow and transplant Pagosa skyrocket individuals.

Draft Recovery Plan

Below, we summarize components from our draft recovery plan. Please reference the draft recovery plan for full details.

The draft recovery plan describes the recovery goal as the conservation and survival of Pagosa skyrocket. For recovery, the species needs at least three (redundant) persistent (resilient) populations across the species' range, where recruitment over time equals or exceeds loss of individuals and ecological and genetic diversity are maintained (representation). The three populations would include the two currently known populations (Pagosa Springs/Mill Creek and Dyke), as well as a third population that may be newly discovered or introduced. These three resilient populations would provide sufficient representation and redundancy across the species' range.

The draft recovery plan includes recovery criteria for both downlisting and delisting. Downlisting criteria include:

(1) Maintaining stable or increasing population growth rates in three populations, with or without augmentation;

(2) Maintaining a minimum population of 4,824 individual plants in the Pagosa Springs/Mill Creek and Dyke populations, and a minimum population of 1,500 individual plants in the third newly discovered or introduced population;

(3) Each of the three populations have regulatory mechanisms or conservation plans in place that address habitat loss and degradation from development, thus helping meet population trend and abundance targets identified in the first two criteria; and

(4) Both known populations are represented in an off-site seed collection to preserve the genetic diversity of Pagosa skyrocket and provide added protection from potential stochastic events.

Delisting criteria are the same as for downlisting, with the exception that all three populations must meet the first two criteria without further augmentation. To help meet these criteria, the draft recovery plan identifies recovery actions for each criteria.

Recovery Planning Process

Restoring an endangered or threatened animal or plant to the point where it is again a secure, self-sustaining member of its ecosystem is a primary goal of the Service's endangered species program. Recovery means improving the status of a listed species to the point at which listing is no longer necessary according to the criteria specified under section 4(a)(1) of the Act. The Act requires recovery plans for listed species unless such a plan would not promote the conservation of a particular species. To help guide recovery efforts, we prepare recovery plans to promote the conservation of the species.

The purpose of a recovery plan is to provide a recommended framework for the recovery of a species so that protection of the Act is no longer necessary. Pursuant to section 4(f) of the Act, a recovery plan must, to the maximum extent possible, include:

(1) A description of site-specific management actions as may be necessary to achieve the plan's goal for the conservation and survival of the species;

(2) Objective, measurable criteria which, when met, would support a determination under section 4(a)(1) of the Act that the species should be removed from the List of Endangered and Threatened Species; and

(3) Estimates of time and costs required to carry out those measures needed to achieve the plan's goal and to achieve intermediate steps toward that goal.

We used our new recovery planning and implementation (RPI) process to develop the draft recovery plan for Pagosa skyrocket. The RPI process helps reduce the time needed to develop and implement recovery plans, increases the relevancy of the recovery plan over longer timeframes, and adds flexibility so that the recovery plan can be more easily adjusted to new information and circumstances. Under our RPI process, a recovery plan will include the three statutorily required elements for recovery plans—objective and measurable criteria, site-specific management actions, and estimates of time and cost—along with a concise introduction and our strategy for how we plan to achieve species recovery. The RPI recovery plan is supported by a separate species status assessment for the Pagosa skyrocket (SSA; Service 2020). The SSA is an in-depth, but not exhaustive, review of the species' biology and threats, an evaluation of its biological status, and an assessment of the resources and conditions needed to maintain long-term viability. The SSA provides the scientific background and threats assessment for Pagosa skyrocket, which are key to the development of the recovery plan. A third, separate working document, called the recovery implementation strategy (RIS), steps down the more general descriptions of actions in the recovery plan to detail the specifics needed to implement the recovery plan, which improves the flexibility of the recovery plan. The RIS will be adaptable, with new information on actions incorporated, as needed, without requiring a concurrent revision to the recovery plan, unless changes to the three statutory elements are required.

Peer Review

In accordance with our July 1, 1994, peer review policy (59 FR 34270; July 1, 1994); our August 22, 2016, Director's Memo on the Peer Review Process; and the Office of Management and Budget's December 16, 2004, Final Information Quality Bulletin for Peer Review (revised June 2012), we solicited independent scientific reviews of the information contained in the SSA report. Results of this structured peer review process can be found at *https://www.fws.gov/mountain-prairie/science/peerReview.php.* We also submitted our SSA report to our Federal and State partners for their scientific review. There is no overlap of occupied habitat or critical habitat with Tribal lands. We incorporated the results of the peer and partner review in the SSA report, as appropriate. The SSA report is the scientific foundation for the draft recovery plan.

Request for Public Comments

All comments we receive by the date specified (see **DATES**) will be considered prior to approval of the recovery plan. Written comments and materials regarding the recovery plan should be sent via one of the means in the **ADDRESSES** section.

We will consider all information we receive during the public comment period, and particularly look for comments that provide scientific rationale or factual background. The Service and other Federal agencies and partners will take these comments into consideration in the course of implementing an approved final recovery plan. We are specifically seeking comments and suggestions on the following questions:

- Understanding that the time and cost presented in the draft recovery plan will be fine-tuned when localized recovery implementation strategies are developed, do you think that the estimated time and cost to recovery are realistic? Is the estimate reflective of the time and cost of actions that may have already been implemented by Federal, State, county, or other agencies? Please provide suggestions or methods for determining a more accurate estimation.
- Do the draft recovery criteria provide clear direction to partners on

what is needed to recover Pagosa skyrocket? How could they be improved for clarity?

- Are the draft recovery criteria both objective and measurable given the information available for Pagosa skyrocket now and into the future? Please provide suggestions.
- Understanding that specific, detailed, and area-specific recovery actions will be developed in the RIS, do you think that the draft recovery actions presented in the draft recovery plan generally cover the types of actions necessary to meet the recovery criteria? If not, what general actions are missing? Are any of the draft recovery actions unnecessary for achieving recovery? Have we prioritized the actions appropriately?

Public Availability of Comments

We will summarize and respond to the issues raised by the public in an appendix to the approved final recovery plan. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. You may request at the top of your comment that we withhold this information from public review; however, we cannot guarantee that we will be able to do so.

Authority

The authority for this action is section 4(f) of the Endangered Species Act, 16 U.S.C. 1533(f).

Matthew Hogan,

Deputy Regional Director, Lakewood, Colorado.

[FR Doc. 2021–13827 Filed 6–28–21; 8:45 am]

BILLING CODE 4333–15–P

DEPARTMENT OF THE INTERIOR

[FWS–R4–ES–2021–N165; FVHC98220410150–XXX–FF04H00000]

Florida Trustee Implementation Group Deepwater Horizon Oil Spill Final Restoration Plan 2 and Environmental Assessment: Habitat Projects on Federally Managed Lands, Sea Turtles, Marine Mammals, Birds, and Provide and Enhance Recreational Opportunities; and Finding of No Significant Impact

AGENCY: Department of the Interior.

ACTION: Notice of availability.

SUMMARY: In accordance with the Oil Pollution Act of 1990 (OPA); the National Environmental Policy Act of 1969 (NEPA); the Final Programmatic Damage Assessment Restoration Plan and Final Programmatic Environmental Impact Statement (Final PDARP/PEIS) and Record of Decision; and the Consent Decree, the Federal and State natural resource trustee agencies for the Florida Trustee Implementation Group (FL TIG) have prepared the *Florida Trustee Implementation Group Final Restoration Plan 2 and Environmental Assessment: Habitat Projects on Federally Managed Lands; Sea Turtles; Marine Mammals; Birds; and Provide and Enhance Recreational Opportunities* (Final RP2/EA), and Finding of No Significant Impact (FONSI). In the Final RP2/EA, the FL TIG analyzed projects to help restore injured habitats, sea turtles, marine mammals, and birds, and to compensate for lost recreational use in the Florida Restoration Area as a result of the *Deepwater Horizon* (DWH) oil spill. The Final RP2/EA describes and, in conjunction with the associated FONSI, selects the preferred restoration projects considered by the FL TIG to partially restore natural resources and ecological services injured or lost as a result of the Deepwater Horizon oil spill. The approximate cost to implement the FL TIG's proposed action is $62,000,000. The purpose of this notice is to inform the public of the availability of the Final RP2/EA and FONSI.

ADDRESSES: *Obtaining Documents:* You may download the Final RP2/EA from either of the following websites:

- *https://www.doi.gov/deepwaterhorizon*
- *https://www.gulfspillrestoration.noaa.gov/restoration-areas/florida*

Alternatively, you may request a CD of the Final RP2/EA (see **FOR FURTHER INFORMATION CONTACT**).

FOR FURTHER INFORMATION CONTACT: Nanciann Regalado, at nanciann_*regalado@fws.gov* or 678–296–6805, or via the Federal Relay Service at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Introduction

On April 20, 2010, the mobile offshore drilling unit *Deepwater Horizon,* which was being used to drill a well for BP Exploration and Production, Inc. (BP), in the Macondo prospect (Mississippi Canyon 252–MC252), experienced a significant explosion, fire, and subsequent sinking in the Gulf of Mexico, resulting in an unprecedented volume of oil and other discharges from the rig and from the wellhead on the seabed. The DWH oil spill is the largest offshore oil spill in U.S. history, discharging millions of barrels of oil over a period of 87 days. In addition, well over 1 million gallons of dispersants were applied to the waters of the spill area in an attempt to disperse the spilled oil. An undetermined amount of natural gas was also released into the environment as a result of the spill.

The Trustees conducted the natural resource damage assessment (NRDA) for the DWH oil spill under the Oil Pollution Act 1990 (OPA; 33 U.S.C. 2701 *et seq.*). Pursuant to OPA, Federal and State agencies act as trustees on behalf of the public to assess natural resource injuries and losses and to determine the actions required to compensate the public for those injuries and losses. The OPA further instructs the designated trustees to develop and implement a plan for the restoration, rehabilitation, replacement, or acquisition of the equivalent of the injured natural resources under their trusteeship to baseline (the resource quality and conditions that would exist if the spill had not occurred). This includes the loss of use and services provided by those resources from the time of injury until the completion of restoration.

The DWH Trustees are:

- U.S. Department of the Interior (DOI), as represented by the National Park Service, U.S. Fish and Wildlife Service, and Bureau of Land Management;
- National Oceanic and Atmospheric Administration (NOAA), on behalf of the U.S. Department of Commerce;
- U.S. Department of Agriculture (USDA);
- U.S. Environmental Protection Agency (EPA);
- State of Louisiana Coastal Protection and Restoration Authority, Oil Spill Coordinator's Office, Department of Environmental Quality, Department of Wildlife and Fisheries, and Department of Natural Resources;
- State of Mississippi Department of Environmental Quality;
- State of Alabama Department of Conservation and Natural Resources and Geological Survey of Alabama;
- State of Florida Department of Environmental Protection and Fish and Wildlife Conservation Commission; and
- State of Texas: Texas Parks and Wildlife Department, Texas General Land Office, and Texas Commission on Environmental Quality.

On April 4, 2016, the United States District Court for the Eastern District of Louisiana entered a Consent Decree resolving civil claims by the Trustees against BP arising from the DWH oil spill: *United States* v. *BPXP et al.,* Civ. No. 10–4536, centralized in MDL 2179,

In re: Oil Spill by the Oil Rig ''Deepwater Horizon'' in the Gulf of Mexico, on April 20, 2010 (E.D. La.) (*http://www.justice.gov/enrd/deepwater-horizon*). Pursuant to the Consent Decree, restoration projects in the Florida Restoration Area are chosen and managed by the FL TIG. The FL TIG is composed of the following Trustees: State of Florida Department of Environmental Protection and Fish and Wildlife Conservation Commission; DOI; NOAA; EPA; and USDA.

Background

On August 20, 2019, the FL TIG posted a public notice at *http://www.gulfspillrestoration.noaa.gov* requesting natural resource restoration project ideas by September 20, 2019, for the Florida Restoration Area. The notice stated that the FL TIG was seeking project ideas for the following restoration types: (1) Habitat Projects on Federally Managed Lands; (2) Sea Turtles; (3) Marine Mammals; (4) Birds; (5) Provide and Enhance Recreational Opportunities; and (6) Oysters. On July 29, 2020, the FL TIG announced that it had initiated drafting of the Final RP2/EA and that it would include a reasonable range of restoration alternatives (projects) for five restoration types. The FL TIG decided not to include Oysters Restoration Type projects in the Draft RP2/EA (see Final RP2/EA for further details).

The FL TIG released the Draft RP2/EA on February 19, 2021, and its notice of availability was published in the **Federal Register** on February 25, 2021 (86 FR 11551). The Draft RP2/EA provided the FL TIG's analysis of alternatives that would meet the Trustees' goals to restore and conserve habitat, replenish and protect living coastal and marine resources, and provide and enhance recreational opportunities under OPA and NEPA, and identified the alternatives that were proposed as preferred for implementation. The public review and comment period ran through March 29, 2021. To facilitate public understanding of the document, the FL TIG held a public webinar on March 11, 2021, and accepted public comments during the webinar. The FL TIG considered the public comments received during the webinar, through direct submittals to its online public comment portal, and by USPS. A summary of comments and the FL TIG's responses to those comments are provided in Chapter 5 of the Final RP2/EA.

Overview of the FL TIG Final RP2/EA

The Final RP2/EA provides the FL TIG's analysis of the reasonable range of alternatives. The alternatives (projects) selected for implementation are presented in the following table under the restoration type from which funds would be allocated in accordance with the DWH Consent Decree. The FL TIG changed REC3, Engineering and Design for Pensacola Beach Park West Fishing Pier and Access Improvements, from a preferred to a non-preferred alternative after reviewing the public comments received on the project and undertaking additional project review and discussion with Escambia County. The total estimated cost for the eighteen selected projects is approximately $62,000,000.

- Restoration Type: Habitat Projects on Federally Managed Lands
  - Johnson Beach Access Management and Habitat Protection
  - Perdido Key Sediment Placement
  - Pensacola Beach Fort Pickens Road Wildlife Lighting Retrofits
- Restoration Type: Sea Turtles
  - Increased Observers and Outreach to Reduce Incidental Hooking of Sea Turtles in Recreational Fisheries along Florida's Gulf Coast
  - Reducing Threats to Sea Turtles through Removal of In-water Marine Debris along Florida's Gulf Coast
  - Assessing Risk and Conducting Public Outreach to Reduce Vessel Strikes on Sea Turtles along Florida's Gulf Coast
- Restoration Type: Marine Mammals
  - Florida Gulf Coast Marine Mammal Stranding Network
- Restoration Type: Birds
  - Gomez Key Oyster Reef Expansion and Breakwaters for American Oystercatchers
  - Egmont Key Vegetation Management and Dune Retention
  - Northeast Florida Coastal Predation Management
  - Florida Shorebird and Seabird Stewardship and Habitat Management—5 Years
- Restoration Type: Provide and Enhance Recreational Opportunities
  - Pensacola Community Maritime Park Public Fishing Marina
  - Baars Park and Sanders Beach Kayak Fishing Trail Access Upgrades
  - Gulf Breeze Parks Boating and Fishing Access Upgrades
  - Lincoln Park Boat Ramp and Dock Improvements
  - Florida Artificial Reef Creation and Restoration—Phase 2
  - Apollo Beach Recreational Sportfish Hatchery Facility
- Restoration Types: Habitat Projects on Federally Managed Lands and Provide and Enhance Recreational Opportunities
  - St. Vincent National Wildlife Refuge Access and Recreational Improvements through Acquisition at Indian Pass

The FL TIG also evaluated the No Action alternative and six action alternatives that were not selected for implementation. Restoration planning for the FL Restoration Area will continue.

Administrative Record

The documents comprising the Administrative Record for Final RP2/EA can be viewed electronically at *https://www.doi.gov/deepwaterhorizon/adminrecord.*

Authority

The authority for this action is the Oil Pollution Act of 1990 (33 U.S.C. 2701 *et seq.*), its implementing NRDA regulations found at 15 CFR 990, and the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*) and its implementing regulations found at 40 CFR 1500–1508.

Mary Josie Blanchard,

Department of the Interior, Director of Gulf of Mexico Restoration.

[FR Doc. 2021–13876 Filed 6–28–21; 8:45 am]

BILLING CODE 4333–15–P

DEPARTMENT OF THE INTERIOR

Office of the Secretary

[211D0102DR. DS62400000. DL1000000.000000. DR.62452.21NPS100; OMB Control Number 1084–0034]

Agency Information Collection Activities; Documenting, Managing and Preserving Department of the Interior Museum Collections Housed in Non-Federal Repositories

AGENCY: Office of Acquisition and Property Management, Interior.

ACTION: Notice of information collection; request for comment.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, we, the Office of Acquisition and Property Management, Office of the Secretary, Department of the Interior are proposing to renew an information collection.

DATES: Interested persons are invited to submit comments on or before July 29, 2021.

ADDRESSES: Send written comments on this information collection request (ICR) to the Office of Management and Budget's Desk Officer for the Department of the Interior by email at *OIRA_Submission@omb.eop.gov;* or via facsimile to (202) 395–5806. Please

provide a copy of your comments to Emily Palus, Office of Acquisition and Property Management, U.S. Department of the Interior, 1849 C Street NW, MS 4262–MIB, Washington, DC 20240; or by email to *Emily_Palus@ios.doi.gov.* Please reference OMB Control Number 1084–0034 in the subject line of your comments.

FOR FURTHER INFORMATION CONTACT: To request additional information about this ICR, contact Emily Palus by email at *Emily_Palus@ios.doi.gov,* or by telephone at 202–513–7563. You may also view the ICR at *http://www.reginfo.gov/public/do/PRAMain.*

SUPPLEMENTARY INFORMATION: In accordance with the Paperwork Reduction Act of 1995 and 5 CFR 1320.8(d)(1), all information collections require approval. We may not conduct or sponsor and you are not required to respond to a collection of information unless it displays a currently valid OMB control number.

As part of our continuing effort to reduce paperwork and respondent burdens, we invite the public and other Federal agencies to comment on new, proposed, revised, and continuing collections of information. This helps us assess the impact of our information collection requirements and minimize the public's reporting burden. It also helps the public understand our information collection requirements and provide the requested data in the desired format.

A **Federal Register** notice with a 60-day public comment period soliciting comments on this collection of information was published on January 14, 2021 (86 FR 3176). One comment was received from a Federally recognized Indian tribe, Colorado River Indian Tribes. The Colorado River Indian Tribes do not hold DOI museum collections. The comment requested that DOI share information obtained from non-Federal repositories about certain DOI museum collections with affiliated tribes. The comment did not include reference to cost or hour burden. Although the comment did not address the information collection directly the Program is willing to share this information with the Tribe as appropriate.

We are again soliciting comments on the proposed ICR that is described below. We are especially interested in public comment addressing the following issues: (1) Whether the collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; (2) The accuracy of our estimate of the burden for this collection of information, including the validity of the methodology and assumptions used; (3) Ways to enhance the quality, utility, and clarity of the information to be collected; and (4) How might the agency minimize the burden of this collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology (*e.g.,* permitting electronic submission of response).

Comments that you submit in response to this notice are a matter of public record. Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Abstract: The information collection regarding Documenting, Managing and Preserving Department of the Interior Museum Collections Housed in Non-Federal Repositories is crucial to the work the Department of the Interior (DOI) does to manage an estimated 74 million museum objects and over 91 thousand linear feet of archives in trust for the American public. This diverse collection consists of archaeological artifacts, archives, biological specimens, ethnographic objects, fine arts, geological specimens, historic objects, and paleontological specimens that are owned and managed by the Department's bureaus and offices (bureaus). This information collection request is directed to non-Federal repositories that house DOI museum collections. The information that DOI obtains, on a voluntary basis, concerns DOI museum collections held at non-Federal repositories. Receipt of this information supports the Department's management of its museum collections for public benefit, including preservation, protection, access, and use, as well as where applicable, compliance with the Native American Graves Protection and Repatriation Act (NAGPRA).

The information that DOI seeks consists of the following:

A. Accession Records and associated files regarding acquisition;

B. Catalog Records and associated files describing the objects and their use;

C. Facility Checklist for Spaces Housing DOI Museum Property (Checklist), which addresses the environmental, security, and other management controls in place to document and safeguard the collections;

D. Inventory of Museum Collections (Inventory) documenting presence and condition of objects and records; and

E. Input on Collections from Lands Administered by the U.S. Department of the Interior that are Located at Non-Federal Facilities (Input Form) to query a limited range of information about the repository, the scope and types of DOI collections in repositories, with which bureaus and offices those collections are associated and the nature of any agreements, the status of documentation and NAGPRA compliance, and availability for research and use.

Although the majority of DOI's documented collections are housed in bureau facilities across the nation, at least 10 percent are located at approximately 970 non-Federal repositories, primarily state, tribal, and local museums and university departments. Most of the DOI museum artifacts, specimens, and archives housed in non-Federal repositories resulted from projects on Federal lands, and include collections from the disciplines of archaeology, biology, geology, and paleontology, as well as associated project documentation.

DOI museum objects cared for in non-Federal repositories are those artifacts, specimens, and archives that are established as Federal property under Federal law. Common law also confers rights to landowners, including the Federal government, such as ownership of property, resources, and other tangible assets existing on or originating from those lands, unless those rights were previously relinquished, sold, awarded, or otherwise reassigned. Also, permits and other agreements for the collection of artifacts and specimens from public lands managed at the time by the Department further affirm Federal ownership. In order to maintain accountability of and facilitate access to DOI museum objects, the objects must be documented in the Interior Collection Management System (ICMS), its successor, the Museum Collection Management System (MCMS), or in another collection management database from which the necessary data can be imported into ICMS or MCMS.

Federal regulations and DOI policy require that all permittees conducting authorized scientific research and authorized individuals performing compliance activities on DOI-managed lands must ensure that any retained museum specimens or objects collected

during a project are: (1) Accessioned and cataloged in ICMS/MCMS, according to DOI standards; and (2) housed in an appropriate museum repository that meets DOI museum standards. These requirements ensure the collections' long-term preservation, protection, and accessibility for access and use.

Title of Collection: Documenting, Managing and Preserving Department of the Interior Museum Collections Housed in Non-Federal Repositories.

OMB Control Number: 1084–0034.

Form Number: None.

Type of Review: Extension of a currently approved collection.

Respondents/Affected Public: Museums; academic, cultural, and research institutions; and, state or local agencies and institutions.

Total Estimated Number of Annual Respondents: 900.

Total Estimated Number of Annual Responses: 900.

Estimated Completion Time per Response: Varies from less than 1 hour to 80 hours, depending on activity.

Total Estimated Number of Annual Burden Hours: 4,155 Hours.

Respondent's Obligation: Voluntary.

Frequency of Collection: Maximum of once per year per collection instrument, and likely less frequently.

Total Estimated Annual Nonhour Burden Cost: None.

An agency may not conduct or sponsor and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number.

The authority for this action is the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*).

Megan Olsen,

Director, Office of Acquisition and Property Management.

[FR Doc. 2021–13875 Filed 6–28–21; 8:45 am]

BILLING CODE 4334–63–P

DEPARTMENT OF THE INTERIOR

National Park Service

[NPS–WASO–NRNHL–DTS#–32184; PPWOCRADI0, PCU00RP14.R50000]

National Register of Historic Places; Notification of Pending Nominations and Related Actions

AGENCY: National Park Service, Interior.

ACTION: Notice.

SUMMARY: The National Park Service is soliciting electronic comments on the significance of properties nominated before June 19, 2021, for listing or related actions in the National Register of Historic Places.

DATES: Comments should be submitted electronically by July 14, 2021.

ADDRESSES: Comments are encouraged to be submitted electronically to *National_Register_Submissions@nps.gov* with the subject line ''Public Comment on <property or proposed district name, (County) State>.'' If you have no access to email you may send them via U.S. Postal Service and all other carriers to the National Register of Historic Places, National Park Service, 1849 C Street NW, MS 7228, Washington, DC 20240.

FOR FURTHER INFORMATION CONTACT: Sherry A. Frear, Chief, National Register of Historic Places/National Historic Landmarks Program, 1849 C Street NW, MS 7228, Washington, DC 20240, *sherry_frear@nps.gov,* 202–913–3763.

SUPPLEMENTARY INFORMATION: The properties listed in this notice are being considered for listing or related actions in the National Register of Historic Places. Nominations for their consideration were received by the National Park Service before June 19, 2021. Pursuant to Section 60.13 of 36 CFR part 60, comments are being accepted concerning the significance of the nominated properties under the National Register criteria for evaluation.

Before including your address, phone number, email address, or other personal identifying information in your comment, you should be aware that your entire comment—including your personal identifying information—may be made publicly available at any time. While you can ask us in your comment to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

Nominations submitted by State or Tribal Historic Preservation Officers:

COLORADO

Mineral County

Bachelor-Commodore Mine Complex (Mining Industry in Colorado, MPS), Cty. Rd. 503, Creede vicinity, MP100006753

FLORIDA

Bay County

Panama City Publishing Company Building, 1134 Beck Ave., Panama City, SG100006752

Jefferson County

Old Howard Academy, (Florida's Historic Black Public Schools MPS), 835 Mamie Scott Dr., Monticello, MP100006751

St. Johns County

St. Augustine Public Burying Ground, South Castillo Dr., St. Augustine, SG100006756

Walton County

Eden Mansion, 181 Eden Gardens Rd., Santa Rosa Beach vicinity, SG100006749

Lakeside Hospital, 1290 Circle Dr., DeFuniak Springs, SG100006750

KANSAS

Shawnee County

Fool Chief's Village (Kanza People (Kaáⁿze níkashiⁿga) of Kansas MPS), Address Restricted, Menoken vicinity, MP100006772

MICHIGAN

Leelanau County

Fishtown Historic District, West River St., West Cedar St., West Avenue A, Leland Township, SG100006765

NEW MEXICO

Santa Fe County

Hyde Memorial State Park (New Deal in New Mexico MPS), 740 Hyde Park Rd. (NM 475), Santa Fe vicinity, MP100006766

La Cieneguilla Petroglyphs (Ancestral Puebloan and Spanish Colonial Landscapes in the Greater Galisteo Basin MPS), Address Restricted, La Cieneguilla vicinity, MP100006767

Burnt Corn Pueblo Archaeological District (Ancestral Puebloan and Spanish Colonial Landscapes in the Greater Galisteo Basin MPS), Address Restricted, Cerrillos vicinity, MP100006768

NEW YORK

Bronx County

St. Stephen's Mission Church Complex, 4331 Vireo Ave., 435 and 439 East 238th St., Bronx, SG100006758

Columbia County

Gallatin Reformed Church & Cemetery, 234 Cty. Rd. 7, Gallatinville, SG100006759

Van Alstyne, Peter Sander, House, 2221 US 9, Kinderhook, SG100006760

Erie County

Bank of East Aurora, 649 Main St., East Aurora, SG100006757

Genesee County

St. Mark's Episcopal Church & Cemetery, 1 East Main St., LeRoy, SG100006761

Kings County

Chevra Torah Anshei Radishkowitz, 139 Amboy St., Brooklyn, SG100006762

Onondaga County

Upsilon Alpha Chapter, Chi Omega House, 300 Waverly Ave., Syracuse, SG100006764

Suffolk County

Point O'Woods Historic District, Point O'Woods, Bay, and Ridge Aves., Church St., Point O'Woods, SG100006763

Westchester County

Fleischmann, Gustav and Marion, House, 1425 Riverview Ave., Peekskill, SG100006769

TEXAS

Harris County

Hollyfield Laundry and Cleaners, 1731 Westheimer Rd., Houston, SG100006770

Nomination submitted by Federal Preservation Officer:

The State Historic Preservation Officer reviewed the following nomination and responded to the Federal Preservation Officer within 45 days of receipt of the nomination and supports listing the property in the National Register of Historic Places.

MISSOURI

Jackson County

Federal Office Building, 601 East 12th St., Kansas City, SG100006773

Authority: Section 60.13 of 36 CFR part 60.

Dated: June 23, 2021.

Sherry A. Frear,

Chief, National Register of Historic Places/ National Historic Landmarks Program.

[FR Doc. 2021–13825 Filed 6–28–21; 8:45 am]

BILLING CODE 4312–52–P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 337–TA–1268]

Certain Capacitive Touch Sensing Systems, Capacitive Touch Sensing Controllers, Microcontrollers With Capacitive Touch Sensing Functionality, and Components Thereof; Institution of Investigation

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that a complaint was filed with the U.S. International Trade Commission on May 24, 2021, under section 337 of the Tariff Act of 1930, as amended, on behalf of Neodron Ltd. of Ireland. The complaint alleges violations of section 337 based upon the importation into the United States, the sale for importation, and/or the sale within the United States after importation of certain capacitive touch sensing systems, capacitive touch sensing controllers, and microcontrollers with capacitive touch sensing functionality, and components thereof by reason of infringement of certain claims of U.S. Patent No. 8,432,173 (''the '173 patent''); U.S. Patent No. 8,749,251 (''the '251 patent''); U.S. Patent No. 9,372,580 (''the '580 patent''); and U.S. Patent No. 9,024,790 (''the '790 patent''). The complaint further alleges that an industry in the United States exists as required by the applicable Federal Statute. The complainant requests that the Commission institute an investigation and, after the investigation, issue a limited exclusion order and cease and desist orders.

ADDRESSES: The complaint, except for any confidential information contained therein, may be viewed on the Commission's electronic docket (EDIS) at *https://edis.usitc.gov*. For help accessing EDIS, please email *EDIS3Help@usitc.gov*. Hearing impaired individuals are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on (202) 205–1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at (202) 205–2000. General information concerning the Commission may also be obtained by accessing its internet server at *https://www.usitc.gov*.

FOR FURTHER INFORMATION CONTACT: Pathenia M. Proctor, The Office of Unfair Import Investigations, U.S. International Trade Commission, telephone (202) 205–2560.

SUPPLEMENTARY INFORMATION:

Authority: The authority for institution of this investigation is contained in section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. 1337, and in section 210.10 of the Commission's Rules of Practice and Procedure, 19 CFR 210.10 (2020).

Scope of Investigation: Having considered the complaint, the U.S. International Trade Commission, on June 23, 2021, *Ordered that*—

(1) Pursuant to subsection (b) of section 337 of the Tariff Act of 1930, as amended, an investigation be instituted to determine whether there is a violation of subsection (a)(1)(B) of section 337 in the importation into the United States, the sale for importation, or the sale within the United States after importation of certain products identified in paragraph (2) by reason of infringement of one or more of claims 1–19 of the '173 patent; claims 1–20 of the '251 patent; claims 1, 2, 4–6, 8–10, and 12 of the '580 patent; and claims 1, 4–8, 10–14, and 16–24 of the '790 patent, and whether an industry in the United States exists as required by subsection (a)(2) of section 337;

(2) Pursuant to section 210.10(b)(1) of the Commission's Rules of Practice and Procedure, 19 CFR 210.10(b)(1), the plain language description of the accused products or category of accused products, which defines the scope of the investigation, is ''capacitive touch sensing systems, capacitive touch sensing controllers, microcontrollers with capacitive touch sensing functionality and components thereof'';

(3) Pursuant to Commission Rule 210.50(b)(l), 19 CFR 210.50(b)(1), the presiding administrative law judge shall take evidence or other information and hear arguments from the parties or other interested persons with respect to the public interest in this investigation, as appropriate, and provide the Commission with findings of fact and a recommended determination on this issue, which shall be limited to the statutory public interest factors set forth in 19 U.S.C. l337(d)(l), (f)(1), (g)(1);

(4) For the purpose of the investigation so instituted, the following are hereby named as parties upon which this notice of investigation shall be served:

(a) The complainant is: Neodron Ltd., Unit 4–5, Burton Hall Road, Sandyford, Dublin 18, D18A094, Ireland.

(b) The respondents are the following entities alleged to be in violation of section 337, and are the parties upon which the complaint is to be served:

STMicroelectronics N.V., 39 Chemin du Champ-des-Filles, Plan-Les-Ouates, Geneva, CH 1228, Switzerland

STMicroelectronics, Inc., 39 Chemin du Champ-des-Filles, Plan-Les-Ouates, Geneva, CH 1228, Switzerland

STMicroelectronics (North America), Holding, Inc., 39 Chemin du Champ-des-Filles, Plan-Les-Ouates, Geneva, CH 1228, Switzerland

Cypress Semiconductor Corp., 198 Champion Court, San Jose, California 95134

Renesas Electronics Corp., Toyosu Foresia, 3–2–24 Toyosu, Koto-ku, Tokyo 135–0061, Japan

Renesas Electronics America Inc., 1001 Murphy Ranch Road, Milpitas, CA 95035

Renesas Technology America, Inc., 1001 Murphy Ranch Road, Milpitas, CA 95035

(c) The Office of Unfair Import Investigations, U.S. International Trade Commission, 500 E Street SW, Suite 401, Washington, DC 20436; and

(5) For the investigation so instituted, the Chief Administrative Law Judge, U.S. International Trade Commission, shall designate the presiding Administrative Law Judge.

Responses to the complaint and the notice of investigation must be submitted by the named respondents in accordance with section 210.13 of the Commission's Rules of Practice and Procedure, 19 CFR 210.13. Pursuant to 19 CFR 201.16(e) and 210.13(a), as amended in 85 FR 15798 (March 19, 2020), such responses will be

considered by the Commission if received not later than 20 days after the date of service of the complaint and the notice of investigation. Extensions of time for submitting responses to the complaint and the notice of investigation will not be granted unless good cause therefor is shown.

Failure of a respondent to file a timely response to each allegation in the complaint and in this notice may be deemed to constitute a waiver of the right to appear and contest the allegations of the complaint and this notice, and to authorize the administrative law judge and the Commission, without further notice to the respondent, to find the facts to be as alleged in the complaint and this notice and to enter an initial determination and a final determination containing such findings, and may result in the issuance of an exclusion order or a cease and desist order or both directed against the respondent.

By order of the Commission.

Issued: June 23, 2021.

Lisa Barton,

Secretary to the Commission.

[FR Doc. 2021–13789 Filed 6–28–21; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 337–TA–1175]

Certain Bone Cements and Bone Cement Accessories; Notice of Commission Determination Finding No Violation of Section 337; Termination of the Investigation

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission (''Commission'') has determined to affirm a final initial determination (''FID'') issued by the presiding administrative law judge (''ALJ'') finding that no violation of section 337 has occurred. The investigation is terminated.

FOR FURTHER INFORMATION CONTACT: Lynde Herzbach, Office of the General Counsel, U.S. International Trade Commission, 500 E Street SW, Washington, DC 20436, telephone (202) 205–3228. Copies of non-confidential documents filed in connection with this investigation may be viewed on the Commission's electronic docket (EDIS) at *https://edis.usitc.gov.* For help accessing EDIS, please email *EDIS3Help@usitc.gov.* General information concerning the Commission may also be obtained by accessing its internet server at *https://www.usitc.gov.* Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal, telephone (202) 205–1810.

SUPPLEMENTARY INFORMATION: On September 23, 2019, the Commission instituted this investigation based on a complaint filed on behalf of Zimmer, Inc. and Zimmer US, Inc. both of Warsaw, Indiana (collectively, ''Complainants''). 84 FR 49764 (Sept. 23, 2019). The complaint alleges violations of section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. 1337 (''section 337''), based on the importation or the sale within the United States of certain bone cements and bone cement accessories by reason of the misappropriation of trade secrets, false advertising, and tortious interference, the threat or effect of which is to destroy or substantially injure an industry in the United States. The complaint also alleges the existence of a domestic industry. The Commission's notice of investigation names the following as respondents: Heraeus Medical GmbH of Wehrheim, Germany and Heraeus Medical LLC of Yardley, Pennsylvania (collectively, ''Respondents''). *Id.* The Office of Unfair Import Investigations (''OUII'') is named as a party in this investigation. *Id.*

On February 11, 2021, the ALJ issued the FID finding no violation of section 337. More particularly, the FID finds, *inter alia,* that: (1) The Commission has subject matter and personal jurisdiction; (2) Respondents imported or sold within the United States accused bone cements and bone cement accessories; (3) a domestic industry exists under section 337(a)(1)(A)(i) (19 U.S.C. 1337(a)(1)(A)(i)); (4) Complainants own the asserted trade secrets; (5) trade secrets (''TS'') 10, 15, and 28 are protectable, but TS 11 is not protectable; (6) Respondents did not misappropriate any asserted TS; (7) Respondents did not engage in false advertising; (8) Respondents did not tortiously interfere with Complainants' contracts or prospective business relationships; and (9) Complainants failed to show a substantial injury or threat of injury to their domestic industry.

On February 23, 2021, Complainants filed a petition for review seeking review of most of the FID's findings. On March 3, 2021, Respondents and OUII filed responses to Complainants' petition.

On March 15, 2021, Respondents filed a submission on the public interest pursuant to Commission Rule 210.50(a)(4) (19 CFR 210.50(a)(4)). Complainants and OUII did not file a statement on the public interest. The Commission received no submissions in response to its **Federal Register** notice calling for public interest comments. *See* 86 FR 12029–30 (Mar. 1, 2021).

On April 12, 2021, the Commission determined to review the FID in part and requested briefing from the parties on certain issues under review. 86 FR 20200–02 (Apr. 16, 2021). Specifically, the Commission determined to review the FID's findings and conclusions as to: (1) The alleged misappropriation of TS 10, 15, and 28, including the finding that Respondents independently developed their own data compilation; (2) Respondents' alleged tortious interference with Complainants' prospective business advantages; and (3) domestic industry and injury. *Id.* The Commission also sought briefing from the parties, interested government agencies, and any other interested parties on remedy, bonding, and the public interest.

Having examined the record of this investigation, including the FID, Complainants' petition for review, the responses thereto, and the written submissions in response to the Commission's request for briefing, the Commission finds that no violation of section 337 has occurred. Specifically, the Commission affirms, with modified reasoning, the FID's findings that Respondents did not misappropriate any trade secret, did not engage in false advertising, and did not tortiously interfere with Complainants' prospective business relationships. The Commission has also determined to take no position regarding the FID's domestic industry and injury findings. The investigation is hereby terminated.

The Commission vote for this determination took place on June 23, 2021.

The authority for the Commission's determination is contained in Section 337 of the Tariff Act of 1930, as amended (19 U.S.C. 1337), and in Part 210 of the Commission's Rules of Practice and Procedure (19 CFR part 210).

By order of the Commission.

Issued: June 23, 2021.

Lisa Barton,

Secretary to the Commission.

[FR Doc. 2021–13791 Filed 6–28–21; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 337–TA–1118 (Advisory Opinion Proceeding)]

Certain Movable Barrier Operator Systems and Components Thereof; Notice of a Commission Determination To Adopt in Part an Advisory Opinion; Termination of Advisory Opinion Proceeding

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission (the ''Commission'') has determined to adopt in part an initial advisory opinion (''IAO'') (Order No. 44, as corrected) issued by the presiding administrative law judge (''ALJ''). The Commission has determined to adopt the IAO's finding of non-infringement of claims 1 and 21 of U.S. Patent Nos. 7,755,223. The Commission has determined not to adopt the portions of the IAO recommending rescission of the remedial orders and discussing grant of a motion for summary determination of non-infringement. The advisory opinion proceeding is hereby terminated.

FOR FURTHER INFORMATION CONTACT: Carl P. Bretscher, Office of the General Counsel, U.S. International Trade Commission, 500 E Street SW, Washington, DC 20436, telephone (202) 205–2382. Copies of non-confidential documents filed in connection with this investigation may be viewed on the Commission's electronic docket system (''EDIS'') at *https://edis.usitc.gov.* For help accessing EDIS, please email *EDIS3Help@usitc.gov.* General information concerning the Commission may also be obtained by accessing its internet server at *https://www.usitc.gov.* Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal, telephone (202) 205–1810.

SUPPLEMENTARY INFORMATION: The Commission instituted the underlying investigation on June 11, 2018, based on a complaint, as supplemented, filed by The Chamberlain Group, Inc. (''CGI'') of Oak Brook, Illinois. 83 FR 27020–21 (June 11, 2018). The complaint alleges that respondents Nortek Security & Control, LLC of Carlsbad, California; Nortek, Inc. of Providence, Rhode Island; and GTO Access Systems, LLC of Tallahassee, Florida (collectively, ''Nortek'') violated section 337 of the Tariff Act, as amended, 19 U.S.C. 1337 (''Section 337'') by importing, selling for importation, or selling in the United States after importation garage door openers (''GDOs'') and other movable barrier operator systems that allegedly infringe one or more of the asserted claims of U.S. Patent Nos. 7,755,223 (''the '223 patent''), 8,587,404 (''the '404 patent''), and 6,741,052 (''the '052 patent''). *Id.* The Office of Unfair Import Investigations was not named as a party to this investigation. *Id.*

On December 3, 2020, the Commission determined that Nortek violated Section 337 by way of infringing claims 1 and 21 of the '223 patent. The Commission issued a limited exclusion order and cease and desist orders against Nortek and imposed a bond in the amount of 100 percent of the entered value of the covered products during the period of Presidential review.

On January 21, 2021, the Commission granted Nortek's opposed request to institute an advisory opinion proceeding, pursuant to Commission Rule 210.79 (19 CFR 210.79). 86 FR 7105 (Jan. 26, 2021); Comm'n Order (Jan. 21, 2021). On January 28, 2021, CGI and Nortek executed a joint stipulation that the subject GDOs do not infringe the '223 patent because they do not have two operating modes at two different energy levels (*i.e.,* they do not have a ''beam off'' or ''sleep mode''). On February 9, 2021, Nortek filed an unopposed motion for summary determination and statement of undisputed facts that the subject GDOs do not infringe the '223 patent.

On May 24, 2021, the presiding ALJ issued an amended IAO finding the subject GDOs do not infringe claims 1 and 21 of the '223 patent. Order No. 44 (May 24, 2021) (as amended). The amended IAO also contains language ostensibly granting Nortek's unopposed motion for summary determination of non-infringement and recommends that the Commission issue an order rescinding the remedial orders. *See id.* at 6.

On June 1, 2021, CGI filed a petition for review of Order No. 44, opposing the portion of the IAO recommending rescission of the remedial orders. CGI did not oppose the IAO's finding that the subject GDOs do not infringe claims 1 and 21 of the '223 patent. Nortek did not file a response to CGI's petition.

The Commission has determined to adopt the portion of the IAO finding that the subject GDOs do not infringe claims 1 and 21 of the '223 patent. The Commission, however, has determined not to adopt the recommendation to rescind the remedial orders, as modification or rescission of remedial orders is governed by Section 337(k) (19 U.S.C. 1337(k)) and Commission Rule 210.76 (19 CFR 210.76). The Commission has also determined not to adopt that portion of the advisory opinion discussing granting Nortek's motion for summary determination of non-infringement.

This advisory opinion proceeding is hereby terminated.

The Commission voted to approve these determinations on June 23, 2021.

The authority for the Commission's determinations is contained in Section 337 of the Tariff Act of 1930, as amended (19 U.S.C. 1337), and in part 210 of the Commission's Rules of Practice and Procedure (19 CFR part 210).

By order of the Commission.

Issued: June 24, 2021.

Lisa Barton,

Secretary to the Commission.

[FR Doc. 2021–13830 Filed 6–28–21; 8:45 am]

BILLING CODE 7020–02–P

DEPARTMENT OF JUSTICE

U.S. Marshals Service

[OMB Number 1105–0105]

Agency Information Collection Activities; Proposed eCollection eComments Requested; Renewal of Collection, No Changes; Comments Requested: Form CSO–005, Preliminary Background Check Form

AGENCY: U.S. Marshals Service, Department of Justice.

ACTION: 60-Day notice.

SUMMARY: The Department of Justice (DOJ), U.S. Marshals Service (USMS), will submit the following information collection request to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act of 1995.

DATES: Comments are encouraged and will be accepted for 60 days until August 30, 2021.

FOR FURTHER INFORMATION CONTACT: If you have additional comments, particularly with respect to the estimated public burden or associated response time, have suggestions, need a copy of the proposed information collection instrument with instructions, or desire any additional information, please contact Nicole Timmons either by mail at CG–3, 10th Floor, Washington, DC 20530–0001, by email at *Nicole.Timmons@usdoj.gov,* or by telephone at 202–236–2646.

SUPPLEMENTARY INFORMATION: Written comments and suggestions from the

public and affected agencies concerning the proposed collection of information are encouraged. Your comments should address one or more of the following four points:

—Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;

—Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

—Evaluate whether and if so how the quality, utility, and clarity of the information to be collected can be enhanced; and

—Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, *e.g.,* permitting electronic submission of responses.

Overview of This Information Collection

1. *Type of Information Collection* (check justification or form 83): Renewal of existing collection, no changes.

2. *The Title of the Form/Collection:* Form CSO–005, Preliminary Background Check Form.

3. *The agency form number, if any, and the applicable component of the Department sponsoring the collection:*

Form number (if applicable): Form CSO–005.

Component: U.S. Marshals Service, U.S. Department of Justice.

4. *Affected public who will be asked or required to respond, as well as a brief abstract:*

Primary: Court Security Officers/Special Security Officer (CSO/SSO) Applicants.

Other (if applicable): [None].

Abstract: The CSO–005 Preliminary Background Check Form is used to collect applicant information for CSO/SSO positions. The applicant information provided to USMS from the Vendor gives information about which District and Facility the applicant will be working, the applicant's personal information, prior employment verification, employment performance and current financial status. The information allows the selecting official to hire applicants with a strong history of employment performance and financial responsibility. The questions on this form have been developed from the OPM, MSPB and DOJ ''Best Practice'' guidelines for reference checking.

5. *An estimate of the total number of respondents and the amount of time estimated for an average respondent to respond:* An estimated 750 respondents will utilize the form, and it will take each respondent approximately 60 minutes to complete the form.

6. *An estimate of the total public burden (in hours) associated with the collection:* The estimated annual public burden associated with this collection is 750 hours, which is equal to (750 (total # of annual responses) * 1 (60 mins).

If additional information is required contact: Melody Braswell, Department Clearance Officer, United States Department of Justice, Justice Management Division, Policy and Planning Staff, Two Constitution Square, 145 N Street NE, 3E.405A, Washington, DC 20530.

Dated: June 24, 2021.

Melody Braswell,

Department Clearance Officer for PRA, U.S. Department of Justice.

[FR Doc. 2021–13848 Filed 6–28–21; 8:45 am]

BILLING CODE 4410–04–P

DEPARTMENT OF LABOR

Office of Workers' Compensation Programs

Advisory Board on Toxic Substances and Worker Health

AGENCY: Office of Workers' Compensation Programs, Department of Labor.

ACTION: Notice of advisory board charter renewal.

SUMMARY: The Secretary of Labor will renew the Charter of the Advisory Board on Toxic Substances and Worker Health (Board) for two years.

FOR FURTHER INFORMATION CONTACT: You may contact Michael Chance, Designated Federal Officer, at *chance.michael@dol.gov,* or Carrie Rhoads, Alternate Designated Federal Officer, at *rhoads.carrie@dol.gov,* U.S. Department of Labor, 200 Constitution Avenue NW, Suite S–3524, Washington, DC 20210, telephone (202) 343–5580. This is not a toll-free number.

SUPPLEMENTARY INFORMATION: In accordance with section 3687 of Public Law 106–398, which was added by section 3141(a) of the National Defense Authorization Act (NDAA) of 2015, Executive Order 13699 (June 26, 2015), and the provisions of the Federal Advisory Committee Act (FACA), as amended (5 U.S.C. app. 2) and its implementing regulations issued by the General Services Administration (GSA), the Advisory Board on Toxic Substances and Worker Health was established on July 2, 2015. The current Charter was signed on June 28, 2019 and expires on June 27, 2021. Pursuant to FACA, Section 14(b)(2), the Secretary of Labor will renew the Charter for two years. The Charter renewal allows the Board to continue its operations. The Board advises the Secretary of Labor (Secretary) with respect to: (1) The Site Exposure Matrices (SEM) of the Department of Labor; (2) medical guidance for claims examiners for claims with the EEOICPA program, with respect to the weighing of the medical evidence of claimants; (3) evidentiary requirements for claims under Part B of EEOICPA related to lung disease; (4) the work of industrial hygienists and staff physicians and consulting physicians of the Department of Labor and reports of such hygienists and physicians to ensure quality, objectivity, and consistency; (5) the claims adjudication process generally, including review of procedure manual changes prior to incorporation into the manual and claims for medical benefits; and (6) such other matters as the Secretary considers appropriate. The Board, when necessary, coordinates exchanges of data and findings with the Department of Health and Human Services' Advisory Board on Radiation and Worker Health.

Membership of the Board currently consists of 12 members appointed by the Secretary, who also appointed a Chair. Public Law 106–398, Section 3687(a)(3). Pursuant to Section 3687(a)(2), membership is balanced and includes members from the scientific, medical and claimant communities. The members serve two-year terms. At the discretion of the Secretary, members may be appointed to successive terms or removed at any time. The Board meets no less than twice per year.

The Board reports to the Secretary of Labor. As specified in Section 3687(i), the Board shall terminate ten (10) years after the date of the enactment of the NDAA, which was December 19, 2014. Thus, the Board shall terminate on December 19, 2024.

Electronic copies of this **Federal Register** notice are available at *http://www.regulations.gov.* This notice, as well as news releases and other relevant information, are also available on the Advisory Board's web page at *http://www.dol.gov/owcp/energy/regs/compliance/AdvisoryBoard.htm.*

Signed at Washington, DC, this 22nd day of June, 2021.

Christopher Godfrey,

Director, Office of Workers' Compensation Programs.

[FR Doc. 2021–13630 Filed 6–28–21; 8:45 am]

BILLING CODE 4510–CR–P

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[Notice: (21–043)]

NASA Astrophysics Advisory Committee; Meeting

AGENCY: National Aeronautics and Space Administration.

ACTION: Notice of meeting cancellation.

SUMMARY: In accordance with the Federal Advisory Committee Act, the National Aeronautics and Space Administration (NASA) announces that the planned meeting on June 29–30, 2021, of the Astrophysics Advisory Committee is cancelled. This meeting was announced in the **Federal Register** on June 14, 2021 (see reference above). The cancellation of this meeting is due to NASA administrative priorities. NASA will announce the new dates for this meeting in a future **Federal Register** notice.

DATES: The meeting announced in the **Federal Register** notice published June 14, 2021, at 86 FR 31538 (Notice: (21–037)), is cancelled.

Patricia Rausch,

Advisory Committee Management Officer, National Aeronautics and Space Administration.

[FR Doc. 2021–13965 Filed 6–25–21; 4:15 pm]

BILLING CODE 7510–13–P

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[NOTICE: 21–042]

Government-Owned Inventions, Available for Licensing

AGENCY: National Aeronautics and Space Administration.

ACTION: Notice of availability of inventions for licensing.

SUMMARY: Patent applications on the inventions listed below assigned to the National Aeronautics and Space Administration have been filed in the United States Patent and Trademark Office under the Patent Cooperation Treaty and are available for licensing as listed in **SUPPLEMENTARY INFORMATION** below.

FOR FURTHER INFORMATION CONTACT: Written applications for licensing of the invention or requests for further information may be submitted to the Licensing Administrator, NASA Johnson Space Center, Technology Transfer Office, Email: *Agency-Patent-Licensing@mail.nasa.gov*. Questions may be directed to Phone: 202–358–7432.

SUPPLEMENTARY INFORMATION: The following application filed in the United States Patent and Trademark Office under the Patent Cooperation Treaty is available for licensing:

NASA Case No.: MSC–26813–1–PCT, Human-Powered Ventilator

The patent rights in this invention has been assigned to the United States of America as represented by the Administrator of the National Aeronautics and Space Administration. Any prospective license will comply with the requirements of 35 U.S.C. 209 and 37 CFR part 404.

Information about other NASA inventions available for licensing can be found online at *http://technology.nasa.gov*.

Helen M. Galus,

Agency Counsel for Intellectual Property.

[FR Doc. 2021–13855 Filed 6–28–21; 8:45 am]

BILLING CODE 7510–13–P

NATIONAL SCIENCE FOUNDATION

Proposal Review Panel for Physics; Notice of Meeting

In accordance with the Federal Advisory Committee Act (Pub. L. 92–463, as amended), the National Science Foundation (NSF) announces the following meeting:

Name and Committee Code: Virtual Site Review of construction progress of the CMS High Luminosity Detector Upgrade (1208).

Date and Time: August 25, 2021; 10:30 a.m.—6:30 p.m. EDT.

Place: Cornell University, 109 Clark Hall, Ithaca, New York 14853–250110027 | Virtual Site Visit via Zoom.

Type of Meeting: Part-Open.

Contact Person: Mark Coles, Program Director, Division of Physics, National Science Foundation, 2415 Eisenhower Avenue., Room 9219, Alexandria, VA 22314; Telephone: (703) 292–4432.

Purpose of Meeting: Virtual site visit to provide an evaluation of the progress of the project at the host site for the Division of Physics at the National Science Foundation.

Agenda: NSF will provide the Zoom coordinates for each meeting (All times are Eastern Daylight Time (EDT)).

August 25, 2021

10:30 a.m.–11:00 a.m. Executive Session (Closed)
11:00 a.m.–5:00 p.m. Presentations on the CMS upgrade (Open)
5:00 p.m.–6:00 p.m. Executive Session (Closed)
6:00 p.m.–6:30 p.m. Closeout presentation by Review Panel (Open)

Reason for Closing: The work being reviewed during closed portions of the virtual site visit include information of a proprietary or confidential nature, including technical information; financial data, such as salaries and personal information concerning individuals associated with the project. These matters are exempt under 5 U.S.C. 552b(c), (4) and (6) of the Government in the Sunshine Act.

Dated: June 24, 2021.

Crystal Robinson,

Committee Management Officer.

[FR Doc. 2021–13858 Filed 6–28–21; 8:45 am]

BILLING CODE 7555–01–P

NATIONAL SCIENCE FOUNDATION

Emergency Request for Approval of an Information Collection for Office of Polar Programs (OPP) United States Antarctic Program (USAP) Sexual Assault and Harassment Prevention and Response (SAHPR) Data Collection Plan

AGENCY: National Science Foundation.

ACTION: Notice and request for comments.

SUMMARY: In compliance with the Paperwork Reduction Act of 1995, the National Science Foundation (NSF) is providing notice that it will submit an information collection request (ICR) to the Office of Management and Budget (OMB) for emergency approval of a proposed information collection. NSF requests that OMB authorize the collection of information on or before 09 July 2021, for 180 days after the date of approval by OMB. Upon receiving the requested six-month emergency approval by OMB, NSF will follow the normal PRA procedures to obtain extended approval for this proposed information collection. The purpose of this collection is to gather data to support the SAHPR Needs Assessment, Implementation Plan and Training Material for the USAP. NSF is requesting emergency approval for this collection to maintain the SAHPR Program Implementation timeline, begin to implement recommendations before the 2021/2022 austral summer, and

honor our commitment to the research and support community to provide a safe and equitable workplace.

DATES: Comments should be submitted as soon as possible upon publication of this notice in the **Federal Register**.

FOR FURTHER INFORMATION CONTACT: Suzanne H. Plimpton, Reports Clearance Officer, National Science Foundation, 2415 Eisenhower Avenue, Room W 18000, Alexandria, Virginia 22314; or send email to *splimpto@nsf.gov.* Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339, which is accessible 24 hours a day, 7 days a week, 365 days a year (including federal holidays).

SUPPLEMENTARY INFORMATION: The Paperwork Reduction Act of 1995 (44 U.S.C. chapter 35; as amended) and 5 CFR part 1320 require each Federal agency to obtain OMB approval to initiate an information collection activity. NSF is seeking OMB approval for the following information collection:

OMB Control Number: 3145–NEW.

Title: Office of Polar Programs (OPP) United States Antarctic Program (USAP) Sexual Assault and Harassment Prevention and Response (SAHPR) Data Collection Plan.

Type of Review: Emergency approval of information collection.

Expected Number of Respondents: 1,000 Survey Respondents; 150 Focus Group Participants; 30 Stakeholder Interviewees.

Frequency: Annual survey. Initial interview and focus groups, with follow on scheduled as needed.

Estimated Average Burden per Response: 10–15 minutes/survey; 120 minutes/focus group; 60 minutes/interview.

Survey. The survey will collect information about organizational and community culture on the ice, perceptions of the issues of sexual assault and harassment, perceptions of leadership support, and the formal and informal interactions between USAP participants on the ice. The surveys will enable the data analysis effort to explore the differences in experience and perceptions based on demographic analysis. The survey will be conducted via an online portal and will not collect any personally identifiable information. The questions will be developed by professionals and will be representative best practices for similar efforts. The target audience will be USAP participants who have deployed to Antarctica within the previous three years.

Focus Groups. The purpose of conducting focus groups is to ascertain an understanding of organizational and community culture on the ice, perceptions of the issues of sexual assault and harassment, perceptions of leadership support, unique needs, and the formal and informal interactions between USAP participants on the ice. The focus groups will be facilitated by our SAHPR contractor and will follow a prescribed script. The groups will be comprised of USAP participants selected for specific groups based on organization, deployment type, work schedule, et cetera.

Stakeholder Interviews. The purpose of the stakeholder interviews is to gain a deeper understanding of current conditions, organizational capacity, and organizational needs that will inform and impact the creation of a realistic and effective USAP SAHPR implementation plan. Interviews will be conducted by our SAHPR contractor with vetted personnel representing various organizations comprising the USAP and will follow scripted questions.

Dated: June 21, 2021.

Suzanne H. Plimpton,

Reports Clearance Officer, National Science Foundation.

[FR Doc. 2021–13799 Filed 6–28–21; 8:45 am]

BILLING CODE 7555–01–P

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50–528, 50–529, and 72–44; NRC–2021–0126]

Palo Verde Nuclear Generating Station, Units 1 and 2 and Independent Spent Fuel Storage Installation; Consideration of Approval of Transfer of Licenses

AGENCY: Nuclear Regulatory Commission.

ACTION: Application for indirect transfer of license; opportunity to comment, request a hearing, and petition for leave to intervene.

SUMMARY: The U.S. Nuclear Regulatory Commission (NRC, the Commission) received and is considering approval of a license transfer application filed by Arizona Public Service Company (APS), on behalf of the Salt River Project Agricultural Improvement and Power District (SRP) and Public Service Company of New Mexico (PNM) on May 19, 2021. The application seeks NRC approval of the transfer of Renewed Facility Operating License Nos. NPF–41 and NPF–51 for Palo Verde Nuclear Generating Station (Palo Verde), Units 1 and 2, respectively, and the general license for the Palo Verde Independent Spent Fuel Storage Installation (ISFSI) as a result of SRP acquiring PNM's 7.9333330 percent share of the undivided interests in Palo Verde, Unit 1, and 0.7933333 percent share of the undivided interests in Palo Verde, Unit 2, whereby SRP would own a total of 25.423333 percent of the shares in Unit 1, and 18.2833333 percent of the shares in Unit 2, and PNM would own a total of 2.266667 percent of the shares in Unit 1, and 9.4066667 percent of the shares in Unit 2.

DATES: Comments must be filed by July 29, 2021. Requests for a hearing or petitions for leave to intervene must be filed by July 19, 2021.

ADDRESSES: You may submit comments by any of the following methods; however, the NRC encourages electronic comment submission through the Federal Rulemaking website:

- *Federal Rulemaking Website:* Go to *https://www.regulations.gov* and search for Docket ID NRC–2021–0126. Address questions about Docket IDs in *Regulations.gov* to Stacy Schumann; telephone: 301–287–0624; email: *Stacy.Schumann@nrc.gov.* For technical questions, contact the individual listed in the **FOR FURTHER INFORMATION CONTACT** section of this document.
- *Email comments to: Hearing.Docket@nrc.gov.* If you do not receive an automatic email reply confirming receipt, then contact us at 301–415–1677.
- *Fax comments to:* Secretary, U.S. Nuclear Regulatory Commission at 301–415–1101.
- *Mail comments to:* Secretary, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, ATTN: Rulemakings and Adjudications Staff.

For additional direction on obtaining information and submitting comments, see ''Obtaining Information and Submitting Comments'' in the **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: Siva P. Lingam, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001; telephone: 301–415–1564, email: *Siva.Lingam@nrc.gov.*

SUPPLEMENTARY INFORMATION:

I. Obtaining Information and Submitting Comments

A. Obtaining Information

Please refer to Docket ID NRC–2021–0126 when contacting the NRC about the availability of information for this action. You may obtain publicly available information related to this action by any of the following methods:

• *Federal Rulemaking Website:* Go to *https://www.regulations.gov* and search for Docket ID NRC–2021–0126.

• *NRC's Agencywide Documents Access and Management System (ADAMS):* You may obtain publicly available documents online in the ADAMS Public Documents collection at *https://www.nrc.gov/reading-rm/adams.html.* To begin the search, select ''Begin Web-based ADAMS Search.'' For problems with ADAMS, please contact the NRC's Public Document Room (PDR) reference staff at 1–800–397–4209, 301–415–4737, or by email to *pdr.resource@nrc.gov.* The application for transfer of licenses dated May 19, 2021, is available in ADAMS under Accession No. ML21139A330.

• *Attention:* The PDR, where you may examine and order copies of public documents, is currently closed. You may submit your request to the PDR via email at *pdr.resource@nrc.gov* or call 1–800–397–4209 or 301–415–4737, between 8:00 a.m. and 4:00 p.m. (ET), Monday through Friday, except Federal holidays.

B. Submitting Comments

The NRC encourages electronic comment submission through the Federal Rulemaking Website (*https://www.regulations.gov*). Please include Docket ID NRC–2021–0126 in your comment submission.

The NRC cautions you not to include identifying or contact information that you do not want to be publicly disclosed in your comment submission. The NRC will post all comment submissions at *https://www.regulations.gov* as well as enter the comment submissions into ADAMS. The NRC does not routinely edit comment submissions to remove identifying or contact information.

If you are requesting or aggregating comments from other persons for submission to the NRC, then you should inform those persons not to include identifying or contact information that they do not want to be publicly disclosed in their comment submission. Your request should state that the NRC does not routinely edit comment submissions to remove such information before making the comment submissions available to the public or entering the comment submissions into ADAMS.

II. Introduction

The NRC is considering the issuance of an order under § 50.80 and § 72.50 of title 10 of the *Code of Federal Regulations* (10 CFR) approving the partial transfer of Renewed Facility Operating License Nos. NPF–41 and NPF–51 for Palo Verde, Units 1 and 2, respectively, and the general license for the Palo Verde ISFSI. The proposed partial license transfer would result from SRP acquiring PNM's 7.9333330 percent share of the undivided interests in Palo Verde, Unit 1, and 0.7933333 percent share of the undivided interests in Palo Verde, Unit 2.

According to the application, PNM currently has a 10.2 percent interest in Palo Verde, Units 1, 2, and 3. While most of this interest is directly owned by PNM, the remainder, specifically the Unit 1 interests and Unit 2 interest, is leased from financial institutions pursuant to sale-leaseback transactions PNM executed in 1985 and 1986 with investment and banking firms. As the lessee, PNM retained all of the leasehold and control rights and responsibility associated therewith. The NRC consented to these sale-leaseback transactions (ADAMS Accession No. ML021680489). Under the terms of these past transactions, the Unit 1 interests and the Unit 2 interest are currently held in trust and leased to PNM pursuant to the NRC's prior orders, license amendments, and creditor regulations in accordance with 10 CFR 50.81. The sale-leaseback transactions were structured so that although the investment and banking firms own the Unit 1 interests and the Unit 2 interest, none has direct or indirect controlling interest in Palo Verde. Instead, under the leases, PNM retains leasehold and control rights and responsibility under the NRC licenses for these interests.

According to the application, PNM entered into a total of 11 sale-leaseback transactions refinancing portions of its interests in Palo Verde, Units 1 and 2. Six leases have since expired, leaving five remaining. This application concerns those remaining five leases, which are approaching their expiration dates and cannot be renewed, with four leases expiring in 2023 and one in 2024. The financial institutions have agreed to sell and transfer these interests to SRP starting from 2021 and SRP has agreed to purchase these interests, provided that SRP and PNM have secured the requisite approval from the NRC for SRP ownership of the incremental interests once the leases expire. After the proposed transfer, SRP would own a total of 25.423333 percent of the shares in Unit 1, and 18.2833333 percent of the shares in Unit 2, and PNM would own a total of 2.266667 percent of the shares in Unit 1, and 9.4066667 percent of the shares in Unit 2. APS owns a 29.1 percent tenant-in-common interest and holds both operating and possession rights in the NRC licenses. Further, APS operates, and would continue to operate, each of the Palo Verde units and the ISFSI pursuant to the operating rights granted to it under the license of each Palo Verde unit. The remaining tenant-in-common co-owners that hold possession-only rights in the NRC licenses are: Southern California Edison Company (15.8 percent); IIF US Holding 2 LP (15.8 percent); Southern California Public Power Authority (5.91 percent); and Los Angeles Department of Water and Power (5.7 percent). Although the ownership interests in Palo Verde would change, significant actions involving operation of the Palo Verde units require unanimity of all owners of Palo Verde. Currently, no entity owns 50 percent or more of the voting interests. The same would be true following the proposed transfer of the leased interests. Accordingly, after the effective date of the transactions, there would be no change in the control of operation of Palo Verde; APS would continue to make all technical decisions that do not require approval from all owners of Palo Verde.

No physical changes to the facilities or operational changes are being proposed in the application.

The NRC's regulations at 10 CFR 50.80 and 10 CFR 72.50 state that no license, or any right thereunder, shall be transferred, either voluntarily or involuntarily, directly or indirectly, through transfer of control of the license, unless the Commission gives its consent in writing. The Commission will approve an application for the transfer of a license if the Commission determines that the proposed transferee is qualified to be the holder of the license, and that the transfer is otherwise consistent with applicable provisions of law, regulations, and orders issued by the Commission.

III. Opportunity to Comment

Within 30 days from the date of publication of this notice, persons may submit written comments regarding the license transfer application, as provided for in 10 CFR 2.1305. The Commission will consider and, if appropriate, respond to these comments, but such comments will not otherwise constitute part of the decisional record. Comments should be submitted as described in the **ADDRESSES** section of this document.

IV. Opportunity To Request a Hearing and Petition for Leave To Intervene

Within 20 days after the date of publication of this notice, any persons (petitioner) whose interest may be affected by this action may file a request for a hearing and petition for leave to intervene (petition) with respect to the

action. Petitions shall be filed in accordance with the Commission's ''Agency Rules of Practice and Procedure'' in 10 CFR part 2. Interested persons should consult a current copy of 10 CFR 2.309. The NRC's regulations are accessible electronically from the NRC Library on the NRC's website at *https://www.nrc.gov/reading-rm/doc-collections/cfr/.* If a petition is filed, the Commission or a presiding officer will rule on the petition and, if appropriate, a notice of a hearing will be issued.

As required by 10 CFR 2.309(d) the petition should specifically explain the reasons why intervention should be permitted with particular reference to the following general requirements for standing: (1) The name, address, and telephone number of the petitioner; (2) the nature of the petitioner's right to be made a party to the proceeding; (3) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (4) the possible effect of any decision or order which may be entered in the proceeding on the petitioner's interest.

In accordance with 10 CFR 2.309(f), the petition must also set forth the specific contentions that the petitioner seeks to have litigated in the proceeding. Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner must provide a brief explanation of the bases for the contention and a concise statement of the alleged facts or expert opinion that support the contention and on which the petitioner intends to rely in proving the contention at the hearing. The petitioner must also provide references to the specific sources and documents on which the petitioner intends to rely to support its position on the issue. The petition must include sufficient information to show that a genuine dispute exists with the applicant or licensee on a material issue of law or fact. Contentions must be limited to matters within the scope of the proceeding. The contention must be one that, if proven, would entitle the petitioner to relief. A petitioner who fails to satisfy the requirements at 10 CFR 2.309(f) with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene. Parties have the opportunity to participate fully in the conduct of the hearing with respect to resolution of that party's admitted contentions, including the opportunity to present evidence, consistent with the NRC's regulations, policies, and procedures.

Petitions must be filed no later than 20 days from the date of publication of this notice. Petitions and motions for leave to file new or amended contentions that are filed after the deadline will not be entertained absent a determination by the presiding officer that the filing demonstrates good cause by satisfying the three factors in 10 CFR 2.309(c)(1)(i) through (iii). The petition must be filed in accordance with the filing instructions in the ''Electronic Submissions (E-Filing)'' section of this document.

A State, local governmental body, Federally recognized Indian Tribe, or agency thereof, may submit a petition to the Commission to participate as a party under 10 CFR 2.309(h)(1). The petition should state the nature and extent of the petitioner's interest in the proceeding. The petition should be submitted to the Commission no later than 20 days from the date of publication of this notice. The petition must be filed in accordance with the filing instructions in the ''Electronic Submissions (E-Filing)'' section of this document, and should meet the requirements for petitions set forth in this section, except that under 10 CFR 2.309(h)(2) a State, local governmental body, Federally recognized Indian Tribe, or agency thereof does not need to address the standing requirements in 10 CFR 2.309(d) if the facility is located within its boundaries. Alternatively, a State, local governmental body, Federally recognized Indian Tribe, or agency thereof may participate as a non-party under 10 CFR 2.315(c).

If a hearing is granted, any person who is not a party to the proceeding and is not affiliated with or represented by a party may, at the discretion of the presiding officer, be permitted to make a limited appearance pursuant to the provisions of 10 CFR 2.315(a). A person making a limited appearance may make an oral or written statement of his or her position on the issues but may not otherwise participate in the proceeding. A limited appearance may be made at any session of the hearing or at any prehearing conference, subject to the limits and conditions as may be imposed by the presiding officer. Details regarding the opportunity to make a limited appearance will be provided by the presiding officer if such sessions are scheduled.

V. Electronic Submissions (E-Filing)

All documents filed in NRC adjudicatory proceedings, including a request for hearing and petition for leave to intervene (petition), any motion or other document filed in the proceeding prior to the submission of a request for hearing or petition to intervene, and documents filed by interested governmental entities that request to participate under 10 CFR 2.315(c), must be filed in accordance with the NRC's E-Filing rule (72 FR 49139; August 28, 2007, as amended at 77 FR 46562, August 3, 2012). The E-Filing process requires participants to submit and serve all adjudicatory documents over the internet, or in some cases to mail copies on electronic storage media. Detailed guidance on making electronic submissions may be found in the Guidance for Electronic Submissions to the NRC and on the NRC website at *https://www.nrc.gov/site-help/e-submittals.html.* Participants may not submit paper copies of their filings unless they seek an exemption in accordance with the procedures described below.

To comply with the procedural requirements of E-Filing, at least 10 days prior to the filing deadline, the participant should contact the Office of the Secretary by email at *hearing.docket@nrc.gov,* or by telephone at 301–415–1677, to (1) request a digital identification (ID) certificate, which allows the participant (or its counsel or representative) to digitally sign submissions and access the E-Filing system for any proceeding in which it is participating; and (2) advise the Secretary that the participant will be submitting a petition or other adjudicatory document (even in instances in which the participant, or its counsel or representative, already holds an NRC-issued digital ID certificate). Based upon this information, the Secretary will establish an electronic docket for the hearing in this proceeding if the Secretary has not already established an electronic docket.

Information about applying for a digital ID certificate is available on the NRC's public website at *https://www.nrc.gov/site-help/e-submittals/getting-started.html.* Once a participant has obtained a digital ID certificate and a docket has been created, the participant can then submit adjudicatory documents. Submissions must be in Portable Document Format (PDF). Additional guidance on PDF submissions is available on the NRC's public website at *https://www.nrc.gov/site-help/electronic-sub-ref-mat.html.* A filing is considered complete at the time the documents are submitted through the NRC's E-Filing system. To be timely, an electronic filing must be submitted to the E-Filing system no later than 11:59 p.m. Eastern Time on the due date. Upon receipt of a transmission, the E-Filing system timestamps the document and sends the submitter an email notice

confirming receipt of the document. The E-Filing system also distributes an email notice that provides access to the document to the NRC's Office of the General Counsel and any others who have advised the Office of the Secretary that they wish to participate in the proceeding, so that the filer need not serve the document on those participants separately. Therefore, applicants and other participants (or their counsel or representative) must apply for and receive a digital ID certificate before adjudicatory documents are filed so that they can obtain access to the documents via the E-Filing system.

A person filing electronically using the NRC's adjudicatory E-Filing system may seek assistance by contacting the NRC's Electronic Filing Help Desk through the ''Contact Us'' link located on the NRC's public website at *https://www.nrc.gov/site-help/e-submittals.html,* by email to *MSHD.Resource@nrc.gov,* or by a toll-free call at 1–866–672–7640. The NRC Electronic Filing Help Desk is available between 9 a.m. and 6 p.m., Eastern Time, Monday through Friday, excluding government holidays.

Participants who believe that they have a good cause for not submitting documents electronically must file an exemption request, in accordance with 10 CFR 2.302(g), with their initial paper filing stating why there is good cause for not filing electronically and requesting authorization to continue to submit documents in paper format. Such filings must be submitted by: (1) First class mail addressed to the Office of the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, Attention: Rulemaking and Adjudications Staff; or (2) courier, express mail, or expedited delivery service to the Office of the Secretary, 11555 Rockville Pike, Rockville, Maryland, 20852, Attention: Rulemaking and Adjudications Staff. Participants filing adjudicatory documents in this manner are responsible for serving the document on all other participants. Filing is considered complete by first-class mail as of the time of deposit in the mail, or by courier, express mail, or expedited delivery service upon depositing the document with the provider of the service. A presiding officer, having granted an exemption request from using E-Filing, may require a participant or party to use E-Filing if the presiding officer subsequently determines that the reason for granting the exemption from use of E-Filing no longer exists.

Documents submitted in adjudicatory proceedings will appear in the NRC's electronic hearing docket which is available to the public at *https://adams.nrc.gov/ehd,* unless excluded pursuant to an order of the Commission or the presiding officer. If you do not have an NRC-issued digital ID certificate as described above, click ''cancel'' when the link requests certificates and you will be automatically directed to the NRC's electronic hearing docket where you will be able to access any publicly available documents in a particular hearing docket. Participants are requested not to include personal privacy information, such as social security numbers, home addresses, or personal phone numbers in their filings, unless an NRC regulation or other law requires submission of such information. For example, in some instances, individuals provide home addresses in order to demonstrate proximity to a facility or site. With respect to copyrighted works, except for limited excerpts that serve the purpose of the adjudicatory filings and would constitute a Fair Use application, participants are requested not to include copyrighted materials in their submission.

The Commission will issue a notice or order granting or denying a hearing request or intervention petition, designating the issues for any hearing that will be held, and designating the Presiding Officer. A notice granting a hearing will be published in the **Federal Register** and served on the parties to the hearing.

For further details with respect to this application, see the application dated May 19, 2021 (ADAMS Accession No. ML21139A330).

Dated: June 23, 2021.

For the Nuclear Regulatory Commission.

Siva P. Lingam,

Project Manager, Plant Licensing Branch IV, Division of Operating Reactor Licensing, Office of Nuclear Reactor Regulation.

[FR Doc. 2021–13778 Filed 6–28–21; 8:45 am]

BILLING CODE 7590–01–P

POSTAL REGULATORY COMMISSION

[Docket No. MC2021–104; Order No. 5926]

Mail Classification Schedule

AGENCY: Postal Regulatory Commission.

ACTION: Notice.

SUMMARY: The Commission is acknowledging a recent Postal Service filing concerning size changes to the Mail Classification Schedule related to presorted First-Class Mail postcards. This document informs the public of the filing, invites public comment, and takes other administrative steps.

DATES: *Comments are due:* July 6, 2021.

ADDRESSES: Submit comments electronically via the Commission's Filing Online system at *http://www.prc.gov.* Those who cannot submit comments electronically should contact the person identified in the **FOR FURTHER INFORMATION CONTACT** section by telephone for advice on filing alternatives.

FOR FURTHER INFORMATION CONTACT: David A. Trissell, General Counsel, at 202–789–6820.

SUPPLEMENTARY INFORMATION:

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I. Introduction

On June 23, 2021, the Postal Service filed a Notice with the Commission pursuant to 39 CFR 3040.211 to change the size limitations for presorted First-Class Mail postcards in Section 1110 in the Market Dominant Product List in the Mail Classification Schedule (MCS).[1] In addition to its Notice, the Postal Service filed the following document:

- Attachment 1 to the Notice—Revisions to Mail Classification Schedule of applicable parts of Section 1110 Presorted Letters/Postcards of the MCS language.

The Postal Service proposed to ''update the maximum size limit for presorted [First-Class Mail] FCM postcards, so that it would be 9 inches length by 6 inches height, instead of the current 6 inches length by 4¼ inches height.'' Notice at 2. The Postal Service describes the proposed changes as a result of the Postal Service's outreach to mailers, who indicated that ''postcards are an effective engagement and information tool, and the larger presorted postcard size would allow commercial mailers to capitalize on recipients' attention for promotion and information purposes,'' increasing the overall utility of postcards to mailers. *Id.* at 3.

The Postal Service describes the impact of the proposed changes on the users of First-Class Mail postcards as an expansion of the options available to commercial mailers, and that it would not restrict current options in any manner, as current customers could either choose to send the larger First-Class Mail postcards or continue to send

[1] Notice of the United States Postal Service of Update to the Maximum Size Limit for Presorted First-Class Mail Postcards, June 23, 2021, at 1 (Notice).

their current size postcards. *Id.* The Postal Service expects to have no more than a negligible impact on its competitors. *Id.*

II. Commission Action

The Commission establishes Docket No. MC2021–104 to consider the Postal Service's proposal described in its Notice. Interested persons may submit comments on whether the Notice is consistent with the policies of 39 CFR 3040.211. Comments are due by July 6, 2021.

The Notice and related filings are available on the Commission's website (*http://www.prc.gov*). The Commission encourages interested persons to review the Notice for further details.

The Commission appoints Richard A. Oliver to serve as Public Representative in this proceeding.

III. Ordering Paragraphs

It is ordered:

1. The Commission establishes Docket No. MC2021–104 for consideration of the matters raised by the Notice of the United States Postal Service of Update to the Maximum Size Limit for Presorted First-Class Mail Postcards, filed June 23, 2021.

2. Pursuant to 39 U.S.C. 505, Richard A. Oliver is appointed to serve as an officer of the Commission (Public Representative) to represent the interests of the general public in this proceeding.

3. Comments by interested persons are due by July 6, 2021.

4. The Secretary shall arrange for publication of this order in the **Federal Register**.

By the Commission.

Mallory Smith,

Federal Register Liaison.

[FR Doc. 2021–13864 Filed 6–28–21; 8:45 am]

BILLING CODE 7710–FW–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–92242; File No. SR–NASDAQ–2021–051]

Self-Regulatory Organizations; The Nasdaq Stock Market LLC; Notice of Filing and Immediate Effectiveness of Proposed Rule Change To Amend General 9, Section 18, Payments for Market Making

June 23, 2021.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on June 14, 2021, The Nasdaq Stock Market LLC (''Nasdaq'' or ''Exchange'') filed with the Securities and Exchange Commission (''SEC'' or ''Commission'') the proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to amend General 9, Section 18, Payments for Market Making. The text of the proposed rule change is available on the Exchange's website at *https://listingcenter.nasdaq.com/rulebook/nasdaq/rules,* at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to amend General 9, Section 18, Payments for Market Making to align General 9, Section 18 with FINRA Rule 5250, Payments for Market Making. Specifically, the Exchange proposes to replace General 9, Section 18 with rule text incorporating FINRA Rule 5250 by reference.[3] The Exchange also proposes to incorporate by reference the definition ''affiliate'' and the related definitions within FINRA Rule 5121 for purposes of FINRA Rule 5250.

By way of background, General 9, Section 18 and FINRA Rule 5250 explicitly prohibit any payment by issuers or issuers' affiliates and promoters, directly or indirectly, to a member or person associated with a member for publishing a quotation, acting as a market maker, or submitting an application in connection therewith. The respective rules are intended, among other things, to prohibit members from receiving compensation or other payments from an issuer for quoting or making a market in the issuer's securities and to assure that members act in an independent capacity when publishing a quotation or making a market in an issuer's securities.

Today, there are several differences between current General 9, Section 18 and FINRA Rule 5250. The Exchange's proposal to replace General 9, Section 18 with an incorporation by reference to FINRA Rule 5250 will align Nasdaq's rule to FINRA's rule. The Exchange explains the differences below.

First, by incorporating FINRA Rule 5250, the Exchange would incorporate FINRA's rule which states that members are not precluded from accepting ''any payment expressly provided for under the rules of a national securities exchange that are effective after being filed with, or filed with and approved by, the SEC pursuant to the requirements of the Exchange Act.'' General 9, Section 18 currently does not include this exception. FINRA previously amended Rule 5250[4] to account for cases where a market maker payment is provided for under the rules of an exchange that are effective after being filed with, or filed with and approved by, the Commission pursuant to the requirements of the Act. FINRA noted in its 2013 Rule Change that comity should be afforded to such exchange rulemaking and the payment should not be prohibited under Rule 5250.[5] The 2013 Rule Change cited to Nasdaq's Market Quality Program as an example of such exchange rulemaking.[6] Incorporating this exception from

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] The Exchange will separately request an exemption from the rule filing requirements of Section 19(b) of the Act in requesting to incorporate FINRA Rule 5250 and the definition of ''affiliate'' and the related definitions within FINRA Rule 5121 to the extent General 9, Section 18 is affected solely by virtue of a change to FINRA Rule 5250 or to such definitions within FINRA Rule 5121. The Exchange's proposed rule change will not become operative unless and until the Commission grants this exemption request.

[4] *See* Securities Exchange Act Release No. 69398 (April 18, 2013), 78 FR 24261 (April 24, 2013) (SR–FINRA–2013–020) (Notice of Filing and Immediate Effectiveness of a Proposed Rule Change Relating to FINRA Rule 5250 (Payments for Market Making) (''2013 Rule Change'').

[5] *Id.*

[6] *See* 2013 Rule Change (citing to Securities Exchange Act Release No. 69195). *See also* Securities Exchange Act Release No. 69195 (March 20, 2013), 78 FR 18393 (March 26, 2013) (SR–NASDAQ–2012–137) (Order Granting Approval of a Proposed Rule Change, as Modified by Amendment Nos. 1 and 3 Thereto, To Establish the Market Quality Program).

FINRA's rule would ensure consistent regulation of joint members of the Exchange and FINRA.

Second, by incorporating FINRA Rule 5250, the Exchange would also incorporate the defined term ''affiliate,'' and the related definitions within FINRA Rule 5121(f),[7] which differ from the definition of ''affiliate'' under current General 9, Section 18(c)(1). FINRA Rule 5250 incorporates the definition of ''affiliate'' within FINRA Rule 5121(f)(1) which provides, ''The term ''affiliate'' means an entity that controls, is controlled by or is under common control with a member.'' The term affiliate refers to ''entity'' which is defined within FINRA Rule 5121(f)(7) which provides,

For purposes of the definitions of affiliate, conflict of interest and control under this Rule, the term ''entity'': (A) Includes a company, corporation, partnership, trust, sole proprietorship, association or organized group of persons; and (B) excludes the following: (i) An investment company registered under the Investment Company Act; (ii) a ''separate account'' as defined in Section 2(a)(37) of the Investment Company Act; (iii) a ''real estate investment trust'' as defined in Section 856 of the Internal Revenue Code; or (iv) a ''direct participation program'' as defined in Rule 2310.

Finally, the term affiliate refers to ''control'' which is defined within FINRA Rule 5121(f)(6) which provides,

The term control means: (i) Beneficial ownership of 10 percent or more of the outstanding common equity of an entity, including any right to receive such securities within 60 days of the member's participation in the public offering; (ii) the right to 10 percent or more of the distributable profits or losses of an entity that is a partnership, including any right to receive an interest in such distributable profits or losses within 60 days of the member's participation in the public offering; (iii) beneficial ownership of 10 percent or more of the outstanding preferred equity of an entity, including any right to receive such preferred equity within 60 days of the member's participation in the public offering; or (iv) the power to direct or cause the direction of the management or policies of an entity. (B) The term ''common control'' means the same natural person or entity controls two or more entities.

In contrast, General 9, Section 18(c)(1) defines affiliate as follows,

(A) The term ''affiliate'' shall mean a company which controls, is controlled by, or is under common control with a member; (B) The term affiliate is presumed to include, but is not limited to, the following for purposes of subparagraph (A), above: (i) A company will be presumed to control a member if the company beneficially owns 10 percent or more of the outstanding voting securities of a member which is a corporation, or beneficially owns a partnership interest in 10 percent or more of the distributable profits or losses of a member which is a partnership; (ii) a member will be presumed to control a company if the member and persons associated with the member beneficially own 10 percent or more of the outstanding voting securities of a company which is a corporation, or beneficially own a partnership interest in 10 percent or more of the distributable profits or losses of a company which is a partnership; (iii) a company will be presumed to be under common control with a member if: a. The same natural person or company controls both the member and company by beneficially owning 10 percent or more of the outstanding voting securities of a member or company which is a corporation, or by beneficially owning a partnership interest in 10 percent or more of the distributable profits or losses of a member or company which is a partnership; or b. A person having the power to direct or cause the direction of the management or policies of the member or the company also has the power to direct or cause the direction of the management or policies of the other entity in question.

Incorporating FINRA's rule would ensure a consistent definition of ''affiliate'' and, therefore, consistent regulation of joint members of the Exchange and FINRA.

Third, by incorporating FINRA Rule 5250, the Exchange would remove General 9, Section 18(c)(1)(C). General 9, Section 18(c)(1)(C) provides,

The provisions of subparagraphs (A) and (B) hereof notwithstanding, none of the following shall be presumed to be an affiliate of a member for purposes of this Rule: (i) An investment company registered with the Commission pursuant to the Investment Company Act of 1940, as amended; (ii) a ''separate account'' as defined in Section 2(a)(37) of the Investment Company Act of 1940, as amended; (iii) a ''real estate investment trust'' as defined in Section 856 of the Internal Revenue Code; (iv) a ''direct participation program'' as defined in Equity 10, Section 1; and (v) a corporation, trust, partnership or other entity issuing financing instrument-backed securities which are rated by a nationally recognized statistical rating organization in one of its four highest generic rating categories.

Unlike General 9, Section 18, FINRA Rule 5121(f)(7) does not by rule exclude a corporation, trust, partnership or other entity issuing financing instrument-backed securities which are rated by a nationally recognized statistical rating organization in one of its four highest generic rating categories from the definition of ''entity.'' Incorporating FINRA's rule, including the applicable definition in FINRA Rule 5121, would ensure consistent definition of ''affiliate'' and consistent regulation of joint members of the Exchange and FINRA.

2. Statutory Basis

The Exchange believes that its proposal is consistent with Section 6(b) of the Act,[8] in general, and furthers the objectives of Section 6(b)(5) of the Act,[9] in particular, in that it is designed to promote just and equitable principles of trade and to protect investors and the public interest. The Exchange's proposal to replace General 9, Section 18 with rule text incorporating by reference FINRA Rule 5250, including the applicable provisions of FINRA Rule 5121 as referenced in FINRA Rule 5250, is consistent with the Act. The Exchange's proposal will align Nasdaq's rule to FINRA's rule and remove differences as between the two rules.

Aligning General 9, Section 18 to FINRA Rule 5250 would ensure consistent regulation of joint members of the Exchange and FINRA.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. The proposed amendments do not impose an undue burden on competition as the proposal will align the Exchange's General 9, Section 18 to FINRA Rule 5250 and ensure consistent regulation of joint members of the Exchange and FINRA.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

No written comments were either solicited or received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the foregoing proposed rule change does not: (i) Significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, it has become effective pursuant to Section 19(b)(3)(A) of the Act [10] and Rule 19b–4(f)(6) thereunder.[11]

[7] FINRA Rule 5250 refers to FINRA Rule 5121 for the definition of ''affiliate.'' FINRA defines the term ''affiliate'' and the terms used with the definition ''affiliate''.

[8] 15 U.S.C. 78f(b).

[9] 15 U.S.C. 78f(b)(5).

[10] 15 U.S.C. 78s(b)(3)(A).

[11] 17 CFR 240.19b-4(f)(6). In addition, Rule 19b–4(f)(6)(iii) requires a self-regulatory organization to give the Commission written notice of its intent to file the proposed rule change, along with a brief description and text of the proposed rule change, at least five business days prior to the date of filing

Continued

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule change should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–NASDAQ–2021–051 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549–1090.

All submissions should refer to File Number SR–NASDAQ–2021–051. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's internet website (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–NASDAQ–2021–051 and should be submitted on or before July 20, 2021.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[12]

J. Matthew DeLesDernier,

Assistant Secretary.

[FR Doc. 2021–13785 Filed 6–28–21; 8:45 am]

BILLING CODE 8011–01–P

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–92243; File No. SR–BX–2021–029]

Self-Regulatory Organizations; Nasdaq BX, Inc.; Notice of Filing and Immediate Effectiveness of Proposed Rule Change To Amend General 9, Section 18, Payments for Market Making

June 23, 2021.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on June 14, 2021, Nasdaq BX, Inc. (''BX'' or ''Exchange'') filed with the Securities and Exchange Commission (''SEC'' or ''Commission'') the proposed rule change as described in Items I and II below, which Items have been prepared by the Exchange. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

The Exchange proposes to amend General 9, Section 18, Payments for Market Making. The text of the proposed rule change is available on the Exchange's website at *https://listingcenter.nasdaq.com/rulebook/bx/rules,* at the principal office of the Exchange, and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to amend General 9, Section 18, Payments for Market Making to align General 9, Section 18 with FINRA Rule 5250, Payments for Market Making. Specifically, the Exchange proposes to replace General 9, Section 18 with rule text incorporating FINRA Rule 5250 by reference.[3] The Exchange also proposes to incorporate by reference the definition ''affiliate'' and the related definitions within FINRA Rule 5121 for purposes of FINRA Rule 5250.

By way of background, General 9, Section 18 and FINRA Rule 5250 explicitly prohibit any payment by issuers or issuers' affiliates and promoters, directly or indirectly, to a member or person associated with a member for publishing a quotation, acting as a market maker, or submitting an application in connection therewith. The respective rules are intended, among other things, to prohibit members from receiving compensation or other payments from an issuer for quoting or making a market in the issuer's securities and to assure that members act in an independent capacity when publishing a quotation or making a market in an issuer's securities.

Today, there are several differences between current General 9, Section 18 and FINRA Rule 5250. The Exchange's proposal to replace General 9, Section 18 with an incorporation by reference to

of the proposed rule change, or such shorter time as designated by the Commission. The Exchange has satisfied this requirement.

[12] 17 CFR 200.30–3(a)(12).

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] The Exchange will separately request an exemption from the rule filing requirements of Section 19(b) of the Act in requesting to incorporate FINRA Rule 5250 and the definition of ''affiliate'' and the related definitions within FINRA Rule 5121 to the extent General 9, Section 18 is affected solely by virtue of a change to FINRA Rule 5250 or to such definitions within FINRA Rule 5121. The Exchange's proposed rule change will not become operative unless and until the Commission grants this exemption request.

FINRA Rule 5250 will align BX's rule to FINRA's rule. The Exchange explains the differences below.

First, by incorporating FINRA Rule 5250, the Exchange would incorporate FINRA's rule which states that members are not precluded from accepting ''any payment expressly provided for under the rules of a national securities exchange that are effective after being filed with, or filed with and approved by, the SEC pursuant to the requirements of the Exchange Act.'' General 9, Section 18 currently does not include this exception. FINRA previously amended Rule 5250[4] to account for cases where a market maker payment is provided for under the rules of an exchange that are effective after being filed with, or filed with and approved by, the Commission pursuant to the requirements of the Act. FINRA noted in its 2013 Rule Change that comity should be afforded to such exchange rulemaking and the payment should not be prohibited under Rule 5250.[5] The 2013 Rule Change cited to Nasdaq's Market Quality Program as an example of such exchange rulemaking.[6] Incorporating this exception from FINRA's rule would ensure consistent regulation of joint members of the Exchange and FINRA.

Second, by incorporating FINRA Rule 5250, the Exchange would also incorporate the defined term ''affiliate,'' and the related definitions within FINRA Rule 5121(f),[7] which differ from the definition of ''affiliate'' under current General 9, Section 18(c)(1). FINRA Rule 5250 incorporates the definition of ''affiliate'' within FINRA Rule 5121(f)(1) which provides, ''The term ''affiliate'' means an entity that controls, is controlled by or is under common control with a member.'' The term affiliate refers to ''entity'' which is defined within FINRA Rule 5121(f)(7) which provides,

For purposes of the definitions of affiliate, conflict of interest and control under this Rule, the term ''entity'': (A) Includes a company, corporation, partnership, trust, sole proprietorship, association or organized group of persons; and (B) excludes the following: (i) An investment company registered under the Investment Company Act; (ii) a ''separate account'' as defined in Section 2(a)(37) of the Investment Company Act; (iii) a ''real estate investment trust'' as defined in Section 856 of the Internal Revenue Code; or (iv) a ''direct participation program'' as defined in Rule 2310.

Finally, the term affiliate refers to ''control'' which is defined within FINRA Rule 5121(f)(6) which provides,

The term control means: (i) Beneficial ownership of 10 percent or more of the outstanding common equity of an entity, including any right to receive such securities within 60 days of the member's participation in the public offering; (ii) the right to 10 percent or more of the distributable profits or losses of an entity that is a partnership, including any right to receive an interest in such distributable profits or losses within 60 days of the member's participation in the public offering; (iii) beneficial ownership of 10 percent or more of the outstanding preferred equity of an entity, including any right to receive such preferred equity within 60 days of the member's participation in the public offering; or (iv) the power to direct or cause the direction of the management or policies of an entity. (B) The term ''common control'' means the same natural person or entity controls two or more entities.

In contrast, General 9, Section 18(c)(1) defines affiliate as follows,

(A) The term ''affiliate'' shall mean a company which controls, is controlled by, or is under common control with a member; (B) The term affiliate is presumed to include, but is not limited to, the following for purposes of subparagraph (A), above: (i) A company will be presumed to control a member if the company beneficially owns 10 percent or more of the outstanding voting securities of a member which is a corporation, or beneficially owns a partnership interest in 10 percent or more of the distributable profits or losses of a member which is a partnership; (ii) a member will be presumed to control a company if the member and persons associated with the member beneficially own 10 percent or more of the outstanding voting securities of a company which is a corporation, or beneficially own a partnership interest in 10 percent or more of the distributable profits or losses of a company which is a partnership; (iii) a company will be presumed to be under common control with a member if: a. The same natural person or company controls both the member and company by beneficially owning 10 percent or more of the outstanding voting securities of a member or company which is a corporation, or by beneficially owning a partnership interest in 10 percent or more of the distributable profits or losses of a member or company which is a partnership; or b. A person having the power to direct or cause the direction of the management or policies of the member or the company also has the power to direct or cause the direction of the management or policies of the other entity in question.

Incorporating FINRA's rule would ensure a consistent definition of ''affiliate'' and, therefore, consistent regulation of joint members of the Exchange and FINRA.

Third, by incorporating FINRA Rule 5250, the Exchange would remove General 9, Section 18(c)(1)(C). General 9, Section 18(c)(1)(C) provides,

The provisions of subparagraphs (A) and (B) hereof notwithstanding, none of the following shall be presumed to be an affiliate of a member for purposes of this Rule: (i) An investment company registered with the Commission pursuant to the Investment Company Act of 1940, as amended; (ii) a ''separate account'' as defined in Section 2(a)(37) of the Investment Company Act of 1940, as amended; (iii) a ''real estate investment trust'' as defined in Section 856 of the Internal Revenue Code; (iv) a ''direct participation program'' as defined in Equity 10, Section 1; and (v) a corporation, trust, partnership or other entity issuing financing instrument-backed securities which are rated by a nationally recognized statistical rating organization in one of its four highest generic rating categories.

Unlike General 9, Section 18, FINRA Rule 5121(f)(7) does not by rule exclude a corporation, trust, partnership or other entity issuing financing instrument-backed securities which are rated by a nationally recognized statistical rating organization in one of its four highest generic rating categories from the definition of ''entity.'' Incorporating FINRA's rule, including the applicable definition in FINRA Rule 5121, would ensure consistent definition of ''affiliate'' and consistent regulation of joint members of the Exchange and FINRA.

2. Statutory Basis

The Exchange believes that its proposal is consistent with Section 6(b) of the Act,[8] in general, and furthers the objectives of Section 6(b)(5) of the Act,[9] in particular, in that it is designed to promote just and equitable principles of trade and to protect investors and the public interest. The Exchange's proposal to replace General 9, Section 18 with rule text incorporating by reference FINRA Rule 5250, including the applicable provisions of FINRA Rule 5121 as referenced in FINRA Rule 5250, is consistent with the Act. The Exchange's proposal will align BX's rule to FINRA's rule and remove differences as between the two rules.

Aligning General 9, Section 18 to FINRA Rule 5250 would ensure consistent regulation of joint members of the Exchange and FINRA.

[4] *See* Securities Exchange Act Release No. 69398 (April 18, 2013), 78 FR 24261 (April 24, 2013) (SR–FINRA–2013–020) (Notice of Filing and Immediate Effectiveness of a Proposed Rule Change Relating to FINRA Rule 5250 (Payments for Market Making) (''2013 Rule Change'').

[5] *Id.*

[6] *See* 2013 Rule Change (citing to Securities Exchange Act Release No. 69195). *See also* Securities Exchange Act Release No. 69195 (March 20, 2013), 78 FR 18393 (March 26, 2013) (SR–NASDAQ–2012–137) (Order Granting Approval of a Proposed Rule Change, as Modified by Amendment Nos. 1 and 3 Thereto, To Establish the Market Quality Program).

[7] FINRA Rule 5250 refers to FINRA Rule 5121 for the definition of ''affiliate.'' FINRA defines the term ''affiliate'' and the terms used with the definition ''affiliate''.

[8] 15 U.S.C. 78f(b).

[9] 15 U.S.C. 78f(b)(5).

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. The proposed amendments do not impose an undue burden on competition as the proposal will align the Exchange's General 9, Section 18 to FINRA Rule 5250 and ensure consistent regulation of joint members of the Exchange and FINRA.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

No written comments were either solicited or received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the foregoing proposed rule change does not: (i) Significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, it has become effective pursuant to Section 19(b)(3)(A) of the Act [10] and Rule 19b–4(f)(6) thereunder.[11]

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule change should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov*. Please include File Number SR–BX–2021–029 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549–1090.

All submissions should refer to File Number SR–BX–2021–029. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's internet website (*http://www.sec.gov/rules/sro.shtml*.) Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549, on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–BX–2021–029 and should be submitted on or before July 20, 2021.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[12]

J. Matthew DeLesDernier,

Assistant Secretary.

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BILLING CODE 8011–01–P

[10] 15 U.S.C. 78s(b)(3)(A).

[11] 17 CFR 240.19b–4(f)(6). In addition, Rule 19b–4(f)(6)(iii) requires a self-regulatory organization to give the Commission written notice of its intent to file the proposed rule change, along with a brief description and text of the proposed rule change, at least five business days prior to the date of filing of the proposed rule change, or such shorter time as designated by the Commission. The Exchange has satisfied this requirement.

[12] 17 CFR 200.30–3(a)(12).

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–92238; File No. SR–BOX–2021–15]

Self-Regulatory Organizations; BOX Exchange LLC; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change To Amend the Fee Schedule on the BOX Options Market LLC Facility

June 23, 2021.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act''),[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on June 10, 2021, BOX Exchange LLC (''Exchange'') filed with the Securities and Exchange Commission (''Commission'') the proposed rule change as described in Items I, II, and III below, which Items have been prepared by the Exchange. The Exchange filed the proposed rule change pursuant to Section 19(b)(3)(A)(ii) of the Act,[3] and Rule 19b–4(f)(2) thereunder,[4] which renders the proposal effective upon filing with the Commission. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of the Substance of the Proposed Rule Change

The Exchange is filing with the Securities and Exchange Commission (''Commission'') a proposed rule change to amend the Fee Schedule on the BOX Options Market LLC (''BOX'') facility. The text of the proposed rule change is available from the principal office of the Exchange, at the Commission's Public Reference Room and also on the Exchange's internet website at *http://boxexchange.com.*

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, the Exchange included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. The Exchange has prepared summaries, set forth in Sections A, B, and C below, of the most significant aspects of such statements.

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] 15 U.S.C. 78s(b)(3)(A)(ii).

[4] 17 CFR 240.19b–4(f)(2).

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

The Exchange proposes to amend Section II (Manual Transaction Fees) on the BOX Fee Schedule. Specifically, the Exchange proposes to amend QOO Order Fees for Market Makers in Section II.A of the Fee Schedule. Currently, Floor Market Makers are charged $0.25 per contract for QOO Orders for Penny and Non-Penny Interval Classes. The Exchange proposes to modify the rates charged for QOO Orders to $0.35 for Market Makers in Penny and Non-Penny Interval Classes. The proposed changes are intended to provide consistency between the Exchange's fees for manual transactions by Floor Market Makers and those charged by other markets.[5] The Exchange notes that the disparity in fees between Floor Market Makers and other Floor Participants on the BOX Trading Floor are similar to disparities that currently exist at other trading floors in the industry.[6]

[5] *See e.g.,* Nasdaq PHLX LLC (''Phlx'') Pricing Schedule, available at: *https://listingcenter.nasdaq.com/rulebook/phlx/rules/Phlx%20Options%207* (providing $0.35 per contract rate for manual transactions by market makers); Cboe Exchange, Inc. (''Cboe'') Fee Schedule, available at: *https://cdn.cboe.com/resources/membership/Cboe_FeeSchedule.pdf* (providing $0.35 per contract rate for manual transactions by market makers). The Exchange notes that Cboe filed to increase the Market Maker manual transaction fee—thereby increasing the fee disparity between Floor Market Makers and all other Floor Participants—in October 2020. *See* Securities Exchange Act Release No. 90232 (October 20, 2020), 85 FR 67782 (SR–CBOE–2020–097).The Exchange also notes that NYSE Arca LLC (''NYSE Arca'') recently filed a proposed change for immediate effectiveness that increased their manual transaction fees for Market Makers to $0.35. In their filing, NYSE Arca stated that the purpose of the change was to better align their fees with other markets in the industry. BOX notes that the purpose of this filing is the same—to align its fees with other exchanges with trading floors. *See* SR–NYSEArca–2021–042 available at *https://www.nyse.com/publicdocs/nyse/markets/nyse-arca/rule-filings/filings/2021/SR-NYSEArca-2021-42.pdf.*

[6] Currently, BOX Floor Brokers are charged $0.25 per contract for manual transactions on the BOX Trading Floor. At Phlx, Cboe, and NYSE American, Floor Brokers are charged $0.25 per contract for manual transactions. As discussed above, Floor Market Makers at Phlx, Cboe, and NYSE American are charged $0.35 per contract for manual transactions. The Exchange also notes that BOX charges Professional Customers $0.10 for manual transactions. The Exchange believes that the disparity between the Professional Customers and the proposed Floor Market Maker fee is reasonable as a similar disparity currently exists at another options exchange with a trading floor. *See* Cboe Fee Schedule. At Cboe, Professional Customers are charged $0.12 for manual transactions and Floor Market Makers are charged $0.35 for manual transactions. Lastly, BOX notes that Public Customers are not charged for manual transactions on the BOX Trading Floor while Floor Market Makers are charged $0.35 for manual transactions. This is consistent with the fee disparities currently in place at the other exchanges with physical trading floors.

2. Statutory Basis

The Exchange believes that the proposal is consistent with the requirements of Section 6(b) of the Act, in general, and Section 6(b)(4) and 6(b)(5)of the Act,[7] in particular, in that it provides for the equitable allocation of reasonable dues, fees, and other charges among BOX Participants and other persons using its facilities and does not unfairly discriminate between customers, issuers, brokers or dealers.

The Exchange believes that the proposed rule change is designed to bring the Exchange's fees for Market Maker manual transactions into alignment with those charged on other markets with trading floors. The Exchange believes it is reasonable to increase certain fees, consistent with fees offered by competing options exchanges for similar transactions.[8] Further, the Exchange believes that the proposed increased charge for manual transactions for Market Makers but not for other market participants is reasonable because the resulting disparity would align the Exchange's fees for manual transactions with the fees charged on other exchanges.[9] In addition, the Exchange believes that other pricing incentives offered by the Exchange would continue to encourage Market Makers to conduct manual transactions on the Exchange.[10] The Exchange thus believes the proposed changes, even though they are increased fees, would not discourage Market Makers from continuing to conduct manual transactions on the Exchange and would continue to attract volume and liquidity to the Exchange generally and would therefore benefit all market participants (including those that do not participate in manual transactions) through increased opportunities to trade.

Further, the Exchange believes the proposed rule change is reasonable and equitable as the proposal is based on the type of business transacted on the Exchange, and Market Makers can opt to participate in manual transactions or not. Finally, to the extent the proposed fees continue to encourage Market Makers to participate in manual transactions on the Exchange, the Exchange believes the proposed changes would continue to improve the Exchange's overall competitiveness and strengthen its market quality for all market participants. In the backdrop of the competitive environment in which the Exchange operates, the proposed rule change is a reasonable attempt by the Exchange to maintain its market share relative to its competitors.

Further, the Exchange believes the proposed change is equitable and not unfairly discriminatory as the proposed modifications would apply to all Floor Market Makers who execute manual transactions on an equal and non-discriminatory basis. The Exchange also believes that increasing fees for manual transactions by Market Makers, but not for other market participants, is not unfairly discriminatory given that the proposed rates (and resulting disparities) are a competitive response to rates charged on options exchanges for manual transactions by Market Makers and because these Participants may avail themselves of other incentives offered by the Exchange. Further, the Exchange believes the proposed change is reasonable, equitable, and not unfairly discriminatory because it is consistent with the manner in which other options exchanges with trading floors currently assess fees for Market Maker manual transactions. As discussed above, the Exchange notes that the disparity in fees between the Floor Market Makers and other Floor Participants on the BOX Trading Floor are similar to disparities that currently exist at other trading floors in the industry.[11]

The Exchange notes that it operates in a highly competitive market. The Commission has repeatedly expressed its preference for competition over regulatory intervention in determining prices, products, and services in the securities markets. In Regulation NMS, the Commission highlighted the importance of market forces in determining prices and SRO revenues and, also, recognized that current regulation of the market system ''has been remarkably successful in promoting market competition in its broader forms that are most important to investors and listed companies.'' [12]

There are currently 16 registered options exchanges competing for order flow. Based on publicly available information, and excluding index-based

[7] 15 U.S.C. 78f(b)(4) and (5).

[8] *See supra* note 5.

[9] *See supra* note 6.

[10] *See* BOX Fee Schedule Section II.A (Strategy QOO Order Fee Cap and Rebate). While the fee cap on Strategy transactions is available to all Participants, the Exchange notes that Floor Market Makers have a time and place advantage by virtue of their presence on the Trading Floor to participate in such transactions and therefore benefit from the fee cap.

[11] *See supra* note 6.

[12] *See* Securities Exchange Act Release No. 51808 (June 9, 2005), 70 FR 37496, 37499 (June 29, 2005) (S7–10–04) (''Reg NMS Adopting Release'').

options, no single exchange has more than 16% of the market share of executed volume of multiply-listed equity and ETF options trades.[13] Therefore, currently no exchange possesses significant pricing power in the execution of multiply-listed equity & ETF options order flow. More specifically, in April 2021, the Exchange had less than 6% market share of executed volume of multiply-listed equity and ETF options trades.[14]

The Exchange believes that the ever-shifting market share among the exchanges from month to month demonstrates that market participants can shift order flow or discontinue or reduce use of certain categories of products, in response to fee changes. Accordingly, competitive forces constrain options exchange transaction fees. Stated otherwise, changes to exchange transaction fees and rebates can have a direct effect on the ability of an exchange to compete for order flow. As such, the Exchange believes that the proposed change is reasonable, equitable, and not unfairly discriminatory as discussed above.

B. Self-Regulatory Organization's Statement on Burden on Competition

The Exchange does not believe that the proposed rule change will impose any burden on competition not necessary or appropriate in furtherance of the purposes of the Act. Instead, as discussed above, the Exchange believes that the proposed changes would be consistent with fees for similar transactions at other markets. As a result, the Exchange believes that the proposed changes further the Commission's goal in adopting Regulation NMS of fostering integrated competition among orders, which promotes ''more efficient pricing of individual stocks for all types of orders, large and small.'' [15]

The Exchange does not believe that the proposed change will impose any burden on intramarket competition that is not necessary or appropriate in furtherance of the purposes of the Act. Particularly, the proposed change will apply uniformly to all Market Makers on the BOX Trading Floor. That is, all Market Makers transacting orders on the BOX Trading Floor will be assessed the proposed fees. The Exchange believes that the proposed increased fees for manual transactions by Market Makers, but not for other market participants, would not impose any burden on intermarket competition that is not necessary or appropriate because the proposed fees (and resulting disparities) are consistent with fees charged for manual transactions by Market Makers on other exchanges and because these Participants may avail themselves to other incentives offered by the Exchange.[16] Further, the Exchange does not believe the proposed rule change will impose any burden on intermarket competition that is not necessary or appropriate in furtherance of the purposes of the Act because, as noted above, competing options exchanges with trading floors have similar fees for identical transactions on their respective trading floors.[17]

Finally, the Exchange notes that it operates in a highly competitive market in which market participants can readily favor competing venues. In such an environment, the Exchange must continually review, and consider adjusting, its fees and credits to remain competitive with other exchanges. For the reasons described above, the Exchange believes that the proposed rule change reflects this competitive environment.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

No written comments were either solicited or received.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

The foregoing rule change has become effective pursuant to Section 19(b)(3)(A)(ii) of the Exchange Act [18] and Rule 19b–4(f)(2) thereunder,[19] because it establishes or changes a due, or fee.

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend the rule change if it appears to the Commission that the action is necessary or appropriate in the public interest, for the protection of investors, or would otherwise further the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–BOX–2021–15 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549–1090.

All submissions should refer to File Number SR–BOX–2021–15. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's internet website (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of such filing also will be available for inspection and copying at the principal office of the Exchange. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–BOX–2021–15, and should be submitted on or before July 20, 2021.

[13] The OCC publishes options and futures volume in a variety of formats, including daily and monthly volume by exchange, available here: *https://www.theocc.com/Market-Data/Market-Data-Reports/Volume-and-OpenInterest/Monthly-Weekly-Volume-Statistics.*

[14] Based on a compilation of OCC data for monthly volume of equity-based options and monthly volume of ETF-based options, *see id.*

[15] *See* Reg NMS Adopting Release, *supra* note 12, at 37499.

[16] *See* supra notes 5, 6, and 10.

[17] *See supra* note 5.

[18] 15 U.S.C. 78s(b)(3)(A)(ii).

[19] 17 CFR 240.19b–4(f)(2).

[20] 17 CFR 200.30–3(a)(12).

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[20]

J. Matthew DeLesDernier,

Assistant Secretary.

[FR Doc. 2021–13783 Filed 6–28–21; 8:45 am]

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SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–92239; File No. SR–FINRA–2021–017]

Self-Regulatory Organizations; Financial Industry Regulatory Authority, Inc.; Notice of Filing and Immediate Effectiveness of a Proposed Rule Change Relating to the Retirement of FINRA's Order Audit Trail System

June 23, 2021.

Pursuant to Section 19(b)(1) of the Securities Exchange Act of 1934 (''Act'')[1] and Rule 19b–4 thereunder,[2] notice is hereby given that on June 17, 2021, the Financial Industry Regulatory Authority, Inc. (''FINRA'') filed with the Securities and Exchange Commission (''SEC'' or ''Commission'') the proposed rule change as described in Items I, II, and III below, which Items have been prepared by FINRA. FINRA has filed the proposal under paragraph (f)(6) of Rule 19b–4 under the Act,[3] which renders the proposal effective upon receipt of this filing by the Commission. The Commission is publishing this notice to solicit comments on the proposed rule change from interested persons.

I. Self-Regulatory Organization's Statement of the Terms of Substance of the Proposed Rule Change

FINRA is filing a proposed rule change setting forth the basis for its determination that the accuracy and reliability of the Consolidated Audit Trail (''CAT'') meet the standards approved by the Commission in SR–FINRA–2020–024 for purposes of eliminating the Order Audit Trail System (''OATS'') rules in the FINRA Rule 7400 Series and FINRA Rule 4554 (Alternative Trading Systems—Recording and Reporting Requirements of Order and Execution Information for NMS Stocks) (collectively referred to herein as the ''OATS Rules''). The proposed rule change also updates cross-references within FINRA rules to reflect the elimination of the OATS Rules.

The text of the proposed rule change is available on FINRA's website at *http://www.finra.org,* at the principal office of FINRA and at the Commission's Public Reference Room.

II. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

In its filing with the Commission, FINRA included statements concerning the purpose of and basis for the proposed rule change and discussed any comments it received on the proposed rule change. The text of these statements may be examined at the places specified in Item IV below. FINRA has prepared summaries, set forth in sections A, B, and C below, of the most significant aspects of such statements.

A. Self-Regulatory Organization's Statement of the Purpose of, and Statutory Basis for, the Proposed Rule Change

1. Purpose

On August 14, 2020, FINRA filed with the Commission a proposed rule change to delete the OATS Rules once members are effectively reporting to the CAT (the ''OATS Retirement Filing'').[4] On October 29, 2020, FINRA filed Amendment No. 1 to the proposed rule change (''Amendment No. 1'') and a response to the comments that were submitted on the original filing (''Response to Comments'').[5] On November 30, 2020, the Commission approved the proposed rule change, as modified by Amendment No. 1, on an accelerated basis.[6]

In the OATS Retirement Filing, FINRA proposed to eliminate the OATS Rules once members are effectively reporting to the CAT and the CAT's accuracy and reliability meet certain standards. Specifically, FINRA proposed that before OATS could be retired, the CAT generally must achieve a sustained error rate for Industry Member[7] reporting in five categories for a period of at least 180 days of 5% or lower on a pre-correction basis, and 2% or lower on a post-correction basis (measured at T+5). In addition to the maximum error rates and matching thresholds, FINRA's use of CAT Data must confirm that (i) there are no material issues that have not been corrected, (ii) the CAT includes all data necessary to allow FINRA to continue to meet its surveillance obligations, and (iii) the Plan Processor is sufficiently meeting its obligations under the CAT NMS Plan relating to the reporting and linkage of Phase 2a Industry Member Data.

In the OATS Retirement Filing, FINRA explained that its review of CAT Data and error rates would be based on data and linkages in the initial phase of reporting (or ''Phase 2a''), which replicate the data in OATS today and thus are most relevant for OATS retirement purposes. Phase 2a Data includes all events and scenarios covered by OATS and applies only to equities. FINRA will not consider options order events or Phase 2c data and validations, which are not in OATS today, for purposes of OATS retirement.

As described below, FINRA has determined that the CAT meets the accuracy and reliability standards approved by the Commission in the OATS Retirement Filing.

(A) Maximum Error Rates

As discussed in the OATS Retirement Filing, FINRA believes that relevant error rates are the primary, but not the sole, metric by which to determine the CAT's accuracy and reliability and will serve as the baseline requirement needed before OATS can be retired. FINRA proposed that, before OATS could be retired, the CAT would generally need to achieve a sustained error rate for Industry Member reporting in five categories for a period of at least 180 days of 5% or lower, measured on a pre-correction or as-submitted basis, and 2% or lower on a post-correction basis (measured at T+5).[8] FINRA proposed to average the error rates across the period, rather than require a 5% pre-correction and 2% post-correction maximum each day for 180

[1] 15 U.S.C. 78s(b)(1).

[2] 17 CFR 240.19b–4.

[3] 17 CFR 240.19b–4(f)(6).

[4] *See* Securities Exchange Act Release No. 89679 (August 26, 2020), 85 FR 54461 (September 1, 2020) (Notice of Filing of File No. SR–FINRA–2020–024).

[5] *See* Letter from Lisa C. Horrigan, Associate General Counsel, FINRA, to Vanessa Countryman, Secretary, Commission, dated October 29, 2020.

[6] *See* Securities Exchange Act Release No. 90535 (November 30, 2020), 85 FR 78395 (December 4, 2020) (Notice of Filing of Amendment No. 1 and Order Granting Accelerated Approval of SR–FINRA–2020–024).

[7] Unless otherwise specified, capitalized terms used in this rule filing are defined as set forth in the CAT Compliance Rule Series or in the National Market System Plan Governing the Consolidated Audit Trail (the ''CAT NMS Plan'' or ''Plan'') that FINRA and the national securities exchanges (collectively, the ''Participants'') filed with the Commission, pursuant to Section 11A of the Exchange Act and Rule 608 of Regulation NMS thereunder. *See* Securities Exchange Act Release No. 79318 (November 15, 2016), 81 FR 84696 (November 23, 2016) (''Approval Order'').

[8] As clarified in the OATS Retirement Filing, although FINRA does not believe that post-correction errors need to be de minimis before OATS can be retired, FINRA was not suggesting, with the proposal, that 2% would meet the ultimate objective of de minimis error rates for CAT. *See* CAT NMS Plan, Appendix C, note 102 (error rates after reprocessing of error corrections are ultimately expected to be de minimis for the CAT).

consecutive days. FINRA also proposed to measure the error rates in the aggregate, rather than on a firm-by-firm basis. Finally, FINRA proposed to measure the error rates separately for each of the five categories, rather than evaluate all categories in the aggregate. As noted above, FINRA's assessment of the error rates for Industry Member reporting is based solely on Phase 2a CAT reporting for equity events since options orders are not included in OATS today.

FINRA measured the error rates in each of the five categories discussed below during the period from October 26, 2020 through April 26, 2021 (the ''applicable period''). FINRA commenced this period on October 26, 2020, which was the date that Industry Members were required to begin correcting all errors for inter-firm linkages and exchange/TRF/ORF match validations. As discussed in the Response to Comments, although the production environment for inter-firm linkage and exchange/TRF/ORF match validations was open for testing as of September 28, 2020, FINRA does not believe it would be appropriate for the 180-day period to commence prior to the October 26, 2020 compliance date.[9]

Rejection Rates and Data Validations. As described in the OATS Retirement Filing, the Plan Processor must perform certain basic data validations,[10] and if a record does not pass these basic data validations, it must be rejected and returned to the CAT Reporter to be corrected and resubmitted. FINRA proposed that over the 180-day period, aggregate rejection rates must be no more than 5% pre-correction or 2% post-correction across all Industry Member Reporters. FINRA has determined that, over the applicable period, aggregate rejection rates across all Industry Member Reporters were 0.03% pre-correction and 0.01% post-correction.

Intra-Firm Linkages. As described in the OATS Retirement Filing, the Plan Processor must be able to link all related order events from all CAT Reporters involved in the lifecycle of an order. At a minimum, this requirement includes the creation of an order lifecycle between all order events handled within an individual CAT Reporter, including orders routed to internal desks or departments with different functions (*e.g.,* an internal ATS). FINRA proposed that aggregate intra-firm linkage rates across all Industry Member Reporters must be at least 95% pre-correction and 98% post-correction. FINRA has determined that, over the applicable period, aggregate intra-firm linkage rates across all Industry Member Reporters were 99.97% pre-correction and 99.99% post-correction.

Inter-Firm Linkages. As described in the OATS Retirement Filing, the Plan Processor must be able to create the lifecycle between orders routed between broker-dealers. FINRA proposed that at least a 95% pre-correction and 98% post-correction aggregate match rate be achieved for orders routed between two Industry Member Reporters. FINRA has determined that during the applicable period there was a 99.08% pre-correction and 99.84% post-correction aggregate match rate for orders routed between two Industry Member Reporters.

Order Linkage Rates. As described in the OATS Retirement Filing, in addition to creating linkages within and between broker-dealers, the Plan Processor must be able to create lifecycles to link various pieces of related orders. For example, the Plan requires linkages of order information to create an order lifecycle from origination or receipt to cancellation or execution. This category essentially combines all of the order-related linkages to capture an overall snapshot of order linkages in the CAT.[11] FINRA proposed that there be at least a 95% pre-correction and 98% post-correction rate for order linkages that are required in Phase 2a. FINRA has determined that during the applicable period there was a 99.66% pre-correction and 99.93% post-correction rate for order linkages required in Phase 2a.[12]

Exchange and TRF/ORF Match Rates. As described in the OATS Retirement Filing, an order lifecycle must be created to link orders routed from broker-dealers to exchanges and executed orders and trade reports. FINRA proposed at least a 95% pre-correction and 98% post-correction aggregate match rate across all equity exchanges[13] for orders routed from Industry Members to an exchange and, for over-the-counter executions, the same match rate for orders linked to trade reports. FINRA has determined that, during the applicable period, there was a 99.51% pre-correction and 99.87% post-correction aggregate match rate across all equity exchanges for orders routed from Industry Members to an exchange and, for over-the-counter executions, there was a 99.34% pre-correction and 99.53% post-correction rate for orders linked to trade reports submitted to the FINRA Trade Reporting Facilities and OTC Reporting Facility.

As set forth above, the error rates for Industry Member reporting over the applicable period were well below the maximum rates established in the OATS Retirement Filing. FINRA also notes that the overall post-correction error rate for Phase 2a Industry Member reporting of 1.01% is comparable to the current overall OATS post-correction error rate, which generally is at or slightly below 1%. Therefore, FINRA has determined that, based on the error rates for Industry Member reporting, the CAT Data meets the accuracy and reliability baseline standards required for OATS retirement.

(B) FINRA's Use of CAT Data

In the OATS Retirement Filing, FINRA stated that while error rates are a key standardized measure in determining whether OATS retirement is appropriate, FINRA's use of the data in the CAT also must confirm that (i) there are no material issues that have not been corrected (*e.g.,* delays in the processing of data, issues with query functions, etc.), (ii) the CAT includes all data necessary to allow FINRA to

[9] *See* FINRA's Response to Comments, *supra* note 5.

[10] Appendix D of the CAT NMS Plan, Section 7.2, for example, requires that certain file validations (*e.g.,* file transmission and receipt are in the correct formats, confirmation of a valid SRO-Assigned Market Participant Identifier, etc.), and syntax and context checks (*e.g.,* format checks, data type checks, consistency checks, etc.) be performed on all submitted records.

[11] *See* FINRA's Response to Comments, *supra* note 5.

[12] FINRA notes that in Phase 2a, linkage is required between the representative street side order and the order being represented when the representative order was originated specifically to represent a single order (received either from a customer or another broker-dealer) and there is: (1) An existing direct electronic link in the firm's system between the order being represented and the representative order, and (2) any resulting executions are immediately and automatically applied to the represented order in the firm's system. As set forth in the OATS Retirement Filing, while such linkages are not required in OATS, FINRA believes that it is appropriate to evaluate them for purposes of retiring OATS because they represent a significant enhancement to the data currently available in OATS and will enhance the quality of the equity audit trail. However, FINRA also explained in the Response to Comments that if all other proposed criteria have been met, FINRA would not anticipate delaying OATS retirement based on Phase 2a representative order linkage error rates alone.

In evaluating whether the standards for OATS retirement have been met, FINRA has determined that the error rates for the Phase 2a representative order linkages did not have a significant negative impact on the overall error rates for order linkages. Accordingly, FINRA did not need to separately evaluate or exclude Phase 2a representative order linkage rates in measuring the error rates over the applicable period. For example, if the intra-firm linkage error rate had been above 5% over the applicable period, FINRA would have evaluated whether the error rate was the result of unlinked representative orders to create an apples-to-apples comparison to OATS.

[13] *See* Amendment No. 1.

continue to meet its surveillance obligations, and (iii) the Plan Processor is sufficiently meeting its obligations under the CAT NMS Plan relating to the reporting and linkage of Phase 2a Data.

FINRA has been planning for OATS retirement for several years and the necessary development work has been underway for some time. FINRA also has been analyzing and testing production CAT Data for purposes of transitioning its automated equity surveillance patterns since the commencement of Phase 2a Industry Member reporting in June 2020 and through subsequent CAT milestone releases. For example, in addition to quantitative reviews, such as the error rate statistics discussed above, FINRA has conducted a series of qualitative reviews of Industry Member CAT Data. Such reviews include, among other things, comparing the count and distribution of Industry Member event reporting through CAT versus OATS (*e.g.,* new order and execution events, and data elements such as buy/sell/sell short codes), and reviewing results of examinations, alert reviews, and investigations relating to the timeliness and accuracy of Industry Member reporting. Based on such qualitative data reviews, FINRA has concluded that Industry Member CAT Data, in the aggregate, is a sufficient replacement for OATS for purposes of FINRA's surveillance program.

Today, FINRA's surveillance patterns rely on the cross-market data model (''CMDM''), which comprises linked OATS data, equity exchange data feeds from each of the exchanges with which FINRA has entered into a regulatory service agreement (''RSA''), and transactions reported to FINRA's equity trade reporting facilities. The CMDM will be retired and replaced by a newly created surveillance data mart, the Pattern Optimized Datamart (''POD''), which incorporates both equities and options data. At that point, FINRA's patterns will rely on CAT Data in POD, *i.e.,* Plan Participant and Industry Member data reported in CAT format and linked by CAT.[14] FINRA notes that the Plan Participants transitioned to reporting via the CAT technical specification as of April 26, 2021, and full Plan Participant equities reporting and linkage validations in accordance with the CAT specification commenced on June 1, 2021.[15] Successful completion of the transition to the CAT specification for Plan Participants is a prerequisite for FINRA to retire the CMDM and leverage CAT Data and linkages in POD for its surveillance patterns. As of the date of this filing, FINRA has completed all planned activities on schedule, including substantially completing the process of integrating CAT Data into POD and successfully running large amounts of production CAT Data for the month of May through POD.[16] FINRA anticipates completing additional activities before the proposed OATS retirement date of September 1, 2021, including, *e.g.,* planned user acceptance testing.[17]

FINRA has performed broad analysis of its equity surveillance patterns and has determined that all of the data required to support the transition is available in CAT. By mapping OATS data to Industry Member CAT Data in POD, FINRA has confirmed that CAT Data has equivalent analogs to all data elements in OATS. In that regard, FINRA notes that, as a Plan Participant, FINRA has been involved in CAT development efforts to ensure that the scope and features of Industry Member data and processed output are sufficient for FINRA's surveillance program. These efforts include, for example, developing and updating the Industry Member Technical Specifications and Reporting Scenarios, conducting OATS–CAT gap analyses and validating that all such gaps have been properly addressed, and performing OATS-to-CAT field-level mappings.

With respect to Plan Participant data, FINRA notes that the test environment for Plan Participant reporting in accordance with the CAT specification opened on February 15, 2021.[18] Plan Participant equity reporting in accordance with the CAT specification in the test environment had a very high compliance rate for data ingestion and validation, and compliance in the production environment is comparable. In addition, starting on April 26, 2021, CAT began linking copies of Industry Member and Plan Participant data reported via the CAT specification in a test environment, and at that point, FINRA began its evaluation of the quality of these linkages. Based on this review and evaluation, FINRA believes that the linkages between Plan Participant data and Industry Member data in CAT are comparable to the linkages between RSA exchange data and OATS data in the CMDM today.[19] FINRA CAT and the Plan Participants have now met the necessary criteria for a full cutover from the RSA specification to the CAT specification, including, *e.g.,* achieving comparable data ingestion validation and inter-venue linkage rates (within a variance of under one percent) between RSA and CAT specification submissions. Accordingly, the Operating Committee approved the cutover from the RSA specification to the CAT specification as the official source of Plan Participant data as of June 1, 2021, and today, all Industry Member and Plan Participant equities data reported via the CAT specification is linked in the CAT production environment.

FINRA continues to evaluate CAT Data quality, and in particular, linkages between Industy Member and Plan Participant data, and to test its surveillance patterns to run on CAT Data in POD. In that regard, FINRA notes that it has followed established and time-tested processes and protocols throughout the development process to ensure that its patterns will perform as expected and produce the necessary output using CAT Data following the retirement of OATS. For example, FINRA's Software Development Lifecycle (''SDLC'') procedures govern systems design, changes, testing and controls. The SDLC procedures are an essential component of FINRA's operations and have been developed to serve FINRA's unique regulatory needs and structure. Additionally, consistent with SEC Regulation SCI, FINRA procedures include a plan of coordination and communication with regulatory staff. By relying on these established processes and protocols, FINRA has confidence that the CAT Data and linkages are reliable and

[14] FINRA's Response to Comments noted this dependency, stating that the process of transitioning FINRA's surveillance patterns to CAT Data necessarily includes, among other things, ingestion of all Industry Member and Plan Participant data and linkages in CAT format. *See* Response to Comments, *supra* note 5, at 4. The Response to Comments further noted that the Plan Participants would be reporting to CAT via another mechanism until April 2021.

[15] For example, according to the CAT Reporting Technical Specification for Plan Participants (version 4.0.0–r4 dated April 20, 2021), additional linkage error feedback for off-exchange trade reports was effective as of June 1, 2021. The Technical Specifications can be found on the CAT NMS Plan website at *www.catnmsplan.com/sites/default/files/2021-04/04.20.2021-CAT-Reporting-Technical-Specifications-for-Participants-4.0.0-r4.pdf.*

[16] FINRA notes that additional POD releases are scheduled; however, these releases introduce minor enhancements to POD, as opposed to significant changes that would impact the way data is ingested or processed in POD.

[17] FINRA notes that user acceptance testing is the final stage of any software development life cycle and enables actual users to test the system to confirm that it is able to carry out the required tasks it was designed to address in real-world situations.

[18] *See, e.g.,* CAT Q1 2021 Quarterly Progress Report dated April 30, 2021, available at *www.catnmsplan.com/sites/default/files/2021-05/CAT-Q1-2021-QPR.pdf.*

[19] FINRA notes that the CAT uses the same code in both the test and production environments. Thus, FINRA believes that linkages in the test environment are reliable indicators of linkages in the production environment.

sufficient to run FINRA's surveillance patterns.

As an added measure, FINRA ran a sample of its pattern portfolio using both OATS and production CAT Data for a short period following implementation of additional Plan Participant linkage validations and compared the pattern outputs. Specifically, FINRA ran several surveillance patterns and processes against legacy-sourced data (OATS/RSA) and against CAT-sourced data. The patterns processed end-to-end with significant alignment and no unexplained anomalous results. Any differences in output between a pattern run with legacy data versus CAT Data were appropriate, given differences in pattern logic as well as enhanced data available through CAT, *e.g.,* representative order linkages. FINRA believes that this sample has provided sufficient evidence that FINRA will be able to integrate all surveillance patterns to run on CAT Data. Based on these results, as well as the results of its quantitative and qualitative reviews of CAT Data and successful efforts integrating CAT Data into POD, FINRA believes that the complete portfolio of equity surveillance patterns will be capable of consuming CAT Data and achieving comparable (or better) output results.

Thus, FINRA proposes to retire OATS in accordance with the schedule set forth herein. FINRA will run its surveillance patterns for review periods through the end of the second quarter of 2021 using OATS data and begin using—and be fully reliant on—CAT Data for its surveillance patterns for review periods beginning in the third quarter of 2021. Following the retirement of OATS, FINRA expects to maintain the current established cadence of its monthly, quarterly and semi-annual surveillance patterns. In addition, FINRA's analytics platforms will have access to CAT Data as soon as such data is made available to regulators. Thus, outside of regularly scheduled surveillance pattern runs, FINRA can perform expedited analytics, as required by market events.

FINRA is finalizing the development and certification of its surveillance patterns to run on CAT Data on a rolling basis and, in accordance with its existing SDLC procedures, will run a month's worth of data and compare the output before certifying each pattern. For those equity patterns that will be subject to certification after OATS retirement, FINRA anticipates that there would be sufficient time to identify and remediate any issues prior to running the patterns in accordance with the current established cadence. FINRA does not anticipate significant issues arising from additional scheduled POD releases or in the final stages of its pattern development and certification efforts. FINRA bases this belief on years of experience with other large technology rollouts that have been executed in accordance with FINRA's SDLC procedures. In such instances, recourse to the legacy system was neither available nor required.

On an ongoing basis following the retirement of OATS, FINRA will conduct regular reviews to ensure confidence in the completeness and accuracy of Industry Member reporting, along with the ability to remediate any issues in a timely manner. Among other things, FINRA has a robust mechanism for detecting data issues, determining which issues are material for purposes of its surveillance program, and requesting resubmission and/or reprocessing of data, as necessary. FINRA also (1) performs a suite of data quality checks against data sourced from CAT to POD and against data processed by POD for use in surveillance patterns; (2) oversees a robust surveillance and examination compliance program that evaluates Industry Member reporting timeliness, data quality, and other issues and trends; (3) reviews CAT compliance program alerts using a rapid remediation process and formal reviews, as necessary; and (4) reviews Industry Member self-reporting and error correction trends. FINRA believes that these practices are sufficient for identification and timely resolution of Industry Member reporting and data issues after OATS has been retired.

Specifically with regard to the additional standards approved in the OATS Retirement Filing, through its use of CAT Data to date, as described above, FINRA believes that these standards have been satisfied. With respect to the first factor, FINRA does not believe that there are any material issues that have not been corrected (or could not be corrected in the course of operation of CAT, as approved by the Operating Committee)[20] that would impact FINRA's ability to incorporate and use CAT Data in FINRA's surveillance program. For example, the Plan requires that raw unprocessed data that has been ingested by the Plan Processor must be available to Participant regulatory staff and the SEC prior to 12:00 p.m. Eastern Time on T+1, and access to all iterations of processed data must be available to Participant regulatory staff and the SEC between 12:00 p.m. Eastern Time on T+1 and T+5.[21] The Plan Processor also must ensure that regulators have access to corrected and linked order data by 8:00 a.m. Eastern Time on T+5.[22] Additionally, after ingestion by the Central Repository, the raw unprocessed data must be transformed into a format appropriate for data querying and regulatory output.[23] The user-defined direct queries and bulk extracts must provide authorized users with the ability to retrieve CAT Data via a query tool or language that allows users to query all available attributes and data sources.[24] FINRA's use of the CAT Data has not uncovered any processing delays or other material issues impacting the availability of, and FINRA's access to, the data.

With respect to the second factor, FINRA believes that the CAT includes all data necessary for FINRA to meet its surveillance obligations after the retirement of OATS. FINRA must ensure that the CAT, as the single source of order and trade data, can enable FINRA to conduct accurate and effective market surveillance in accordance with its regulatory obligations.[25] As noted above, Phase 2a Data includes all events and scenarios covered by OATS and is the most relevant for OATS retirement purposes. FINRA Rule 7440 describes the OATS requirements for recording information, which includes information related to the receipt or origination of orders, order transmittal, and order modifications, cancellations and executions. Large Industry Members and Small Industry Members that currently are reporting to OATS were

[20] FINRA notes that FINRA CAT tracks known issues relating to Industry Member and Plan Participant reporting. *See, e.g., catnmsplan.com/CAT-Transaction-Known-Issues-List.* FINRA regularly reviews and analyzes FINRA CAT's list of current and resolved issues and does not believe that any of these issues would impact its ability to incorporate and use CAT Data in its surveillance program.

[21] *See* CAT NMS Plan, Appendix D, Section 6.2.

[22] *See* CAT NMS Plan, Appendix C, Section A.2(a).

[23] *See* CAT NMS Plan, Appendix C, Section A.1(b).

[24] *See* CAT NMS Plan, Section 6.10(c).

[25] As discussed in the OATS Retirement Filing, OATS was originally proposed to fulfill one of the undertakings contained in an order issued by the Commission relating to the settlement of an enforcement action against FINRA (f/k/a National Association of Securities Dealers, Inc. (''NASD'')) for failure to adequately enforce its rules. *See* Securities Exchange Act Release No. 39729 (March 6, 1998), 63 FR 12559 (March 13, 1998) (Order Approving File No SR–NASD–97–56) (''OATS Approval Order''); *see also* Securities Exchange Act Release No. 37538 (August 8, 1996); Administrative Proceeding File No. 3–9056 (''SEC Order''). In the OATS Approval Order, the Commission concluded that OATS satisfied the conditions of the SEC Order and was consistent with the Exchange Act. *See* 63 FR 12559, 12566–67. FINRA believes that it will continue to be in compliance with the requirements of the SEC Order once the OATS Rules are deleted.

required to submit data to the CAT for these same events and scenarios commencing in Phase 2a. FINRA's testing, analysis and use of the CAT Data (including integration into POD), as described above, has confirmed that the CAT includes all data necessary for FINRA to meet its surveillance obligations and that CAT is a reliable substitute for OATS. In addition, based on its qualitative data reviews, FINRA has concluded that Industry Member CAT Data, in the aggregate, is a sufficient replacement for OATS for purposes of FINRA's surveillance program.

With respect to the third factor, FINRA believes that the Plan Processor is sufficiently meeting its obligations under the CAT NMS Plan relating to the reporting and linkage of Phase 2a Data. As detailed in the Implementation Plan and Quarterly Progress Reports submitted by the Plan Participants, the Plan Processor has met its targeted completion dates for the milestones for Phase 2a, including, for example, production Go-Live for Equities 2a file submission and data integrity validation (Large Industry Members and Small OATS Reporters) on June 22, 2020; Production Go-Live for Equities 2a Intrafirm Linkage validations on July 27, 2020; and production go-live for firm-to-firm linkage validations for equities (Large Industry Members and Small OATS Reporters) and exchange and TRF/ORF linkage validations for equities (Large Industry Members and Small OATS Reporters) on October 26, 2020.[26]

Based on the foregoing, FINRA has determined that the CAT meets the accuracy and reliability standards approved by the Commission in the OATS Retirement Filing for purposes of eliminating the OATS Rules. FINRA has determined to retire OATS effective September 1, 2021. Firms must continue to report to OATS all order events that occur on or prior to August 31, 2021. Reports submitted to OATS for order events that occur after August 31, 2021 will be rejected. In other words, August 31, 2021 will be the last ''OATS Business Day,'' as defined under Rule 7450(b)(3), for which OATS will accept order events and perform routine processing (including incorporation of corrections and repairs of rejections) occurring within the normal OATS timeframe for such activities. OATS will continue to accept reports for order events that occur on or prior to August 31, 2021 (including, but not limited to, late and corrected reports for such order events) through September 16, 2021. Firms must ensure that their OATS reporting is accurate and complete for all order events that occur on or prior to August 31, 2021. The OATS Rules will be deleted from the FINRA rulebook effective September 1, 2021.[27]

Finally, FINRA notes that as requested by the industry, FINRA has provided transparency into the process of retiring OATS. For example, FINRA has provided the industry with monthly status updates[28] on (1) the error rates in the categories discussed above, (2) FINRA's evaluation of the non-error rate factors, (3) a general timeframe for OATS retirement, and (4) steps for Industry Members to consider in preparation for the retirement of OATS. Materials for these events are available on the CAT NMS Plan website.[29]

In light of the foregoing, FINRA believes that retiring OATS as of September 1, 2021 is appropriate, particularly given the potential risks of continuing to run OATS and CAT in parallel for an additional period of time. Such potential risks may include, for example, on an industry-wide basis: (1) Processing and storage capacity issues from operating two systems (particularly in the event of extraordinary market volume); (2) cybersecurity risks from having data flow through two separate systems for a longer time period; (3) systems issues from reporting infrastructure that is near end-of-life; and (4) the expense and burden on CAT Reporters of dual reporting, particularly in the event of systems issues requiring correction and/or resubmission of data and competing resource priorities between OATS and CAT reporting and repair activities.

FINRA has filed the proposed rule change for immediate effectiveness and has determined to retire OATS effective September 1, 2021. The implementation date of SR–FINRA–2020–024, pursuant to which the Commission approved the deletion of the OATS Rules, and of this proposed rule change will be September 1, 2021. FINRA will publish a *Regulatory Notice* announcing this implementation date.

2. Statutory Basis

FINRA believes that the proposed rule change is consistent with the provisions of Section 15A(b)(6) of the Act,[30] which requires, among other things, that FINRA rules must be designed to prevent fraudulent and manipulative acts and practices, to promote just and equitable principles of trade, and, in general, to protect investors and the public interest, and Section 15A(b)(9) of the Act,[31] which requires that FINRA rules not impose any burden on competition that is not necessary or appropriate.

FINRA has determined that the CAT accuracy and reliability standards approved by the Commission in SR–FINRA–2020–024 have been satisfied and it is appropriate to retire OATS, which is duplicative in light of the implementation of CAT. Based on its testing, analysis and use of CAT Data (including integration of CAT Data into POD), as described above, FINRA has determined that its surveillance of market activity will remain accurate and effective and FINRA will be able to continue to fulfill its statutory obligation to protect investors and the public interest after the retirement of OATS. Among other things, FINRA has performed broad analysis of its equity surveillance patterns and has determined that all of the data required to support the transition is available in CAT. In addition, based on its qualitative data reviews, FINRA has concluded that Industry Member CAT Data, in the aggregate, is a sufficient replacement for OATS for purposes of FINRA's surveillance program. FINRA also ran a sample of its pattern portfolio using both OATS and production CAT Data and compared the pattern outputs. Based on these results, as well as the results of its quantitative and qualitative reviews of CAT Data and efforts to integrate CAT Data into POD, FINRA believes that the complete portfolio of equity surveillance patterns will be capable of consuming CAT Data and

[26] The Implementation Plan and Quarterly Progress Reports are available at *www.catnmsplan.com/implementation-plan.*

[27] Pursuant to the OATS Retirement Filing, the Commission approved the deletion of the OATS Rules and the adoption of new introductory language in Rule 4554 and the Rule 7400 Series to help alert members of the status of the OATS Rules. The Exhibit 5 attached to this filing is marked to show the deletion of this introductory language (but is not marked to show the previously approved deletion of the OATS Rules).

In addition, there are multiple rules throughout the FINRA rulebook that cross-reference or otherwise incorporate some or all of the OATS Rules. In this filing, FINRA also is proposing non-substantive technical changes to delete or amend, as applicable, such references to the OATS Rules.

[28] On March 18, 2021, FINRA conducted an industry webinar addressing OATS retirement issues and informed the industry that although a formal OATS retirement date had not yet been established, it would be no earlier than the end of June 2021. Additional monthly updates were held on April 15, 2021 and May 20, 2021.

[29] *See www.catnmsplan.com/events.* FINRA CAT also provides regular updates to Industry Members regarding CAT implementation and compliance during FINRA CAT's Weekly Industry Checkpoint and Monthly Implementation calls. The statistics provided by FINRA CAT have also served as a good proxy for progress toward achieving the requisite error rates for purposes of OATS retirement.

[30] 15 U.S.C. 78*o*–3(b)(6).

[31] 15 U.S.C. 78*o*–3(b)(9).

achieving comparable (or better) output results.

B. Self-Regulatory Organization's Statement on Burden on Competition

FINRA does not believe that the proposed rule change will result in any burden on competition that is not necessary or appropriate in furtherance of the purposes of the Act. As set forth in the OATS Retirement Filing, FINRA undertook an economic impact assessment to analyze the regulatory need for the proposed rule change, its potential economic impacts, including anticipated costs and benefits, and the alternatives considered in assessing how to best meet regulatory objectives. The economic impact assessment discussed the potential costs and benefits associated with OATS retirement assuming that the accuracy and reliability standards delineated in the filing were met. As FINRA has determined that CAT meets or exceeds these standards, FINRA does not anticipate any additional impacts from retiring OATS.

C. Self-Regulatory Organization's Statement on Comments on the Proposed Rule Change Received From Members, Participants, or Others

The OATS Retirement Filing, pursuant to which FINRA proposed the above-discussed accuracy and reliability standards the CAT would need to achieve before FINRA could retire OATS, was published for comment on September 1, 2020.[32] Three comment letters were submitted in response,[33] and on October 29, 2020, FINRA responded to the comment letters.[34] The comment letters, as well as FINRA's response to comments, are available on the Commission's website.

III. Date of Effectiveness of the Proposed Rule Change and Timing for Commission Action

Because the foregoing proposed rule change does not: (i) Significantly affect the protection of investors or the public interest; (ii) impose any significant burden on competition; and (iii) become operative for 30 days from the date on which it was filed, or such shorter time as the Commission may designate, it has become effective pursuant to Section 19(b)(3)(A) of the Act[35] and Rule 19b–4(f)(6) thereunder.[36]

At any time within 60 days of the filing of the proposed rule change, the Commission summarily may temporarily suspend such rule change if it appears to the Commission that such action is necessary or appropriate in the public interest, for the protection of investors, or otherwise in furtherance of the purposes of the Act. If the Commission takes such action, the Commission shall institute proceedings to determine whether the proposed rule should be approved or disapproved.

IV. Solicitation of Comments

Interested persons are invited to submit written data, views, and arguments concerning the foregoing, including whether the proposed rule change is consistent with the Act. Comments may be submitted by any of the following methods:

Electronic Comments

- Use the Commission's internet comment form (*http://www.sec.gov/rules/sro.shtml*); or
- Send an email to *rule-comments@sec.gov.* Please include File Number SR–FINRA–2021–017 on the subject line.

Paper Comments

- Send paper comments in triplicate to Secretary, Securities and Exchange Commission, 100 F Street NE, Washington, DC 20549–1090.

All submissions should refer to File Number SR–FINRA–2021–017. This file number should be included on the subject line if email is used. To help the Commission process and review your comments more efficiently, please use only one method. The Commission will post all comments on the Commission's internet website (*http://www.sec.gov/rules/sro.shtml*). Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. 552, will be available for website viewing and printing in the Commission's Public Reference Room, 100 F Street NE, Washington, DC 20549 on official business days between the hours of 10:00 a.m. and 3:00 p.m. Copies of the filing also will be available for inspection and copying at the principal office of FINRA. All comments received will be posted without change. Persons submitting comments are cautioned that we do not redact or edit personal identifying information from comment submissions. You should submit only information that you wish to make available publicly. All submissions should refer to File Number SR–FINRA–2021–017, and should be submitted on or before July 20, 2021.

For the Commission, by the Division of Trading and Markets, pursuant to delegated authority.[37]

J. Matthew DeLesDernier,

Assistant Secretary.

[FR Doc. 2021–13784 Filed 6–28–21; 8:45 am]

BILLING CODE 8011–01–P

[32] *See supra* note 4.

[33] *See* Letters from Howard Meyerson, Managing Director, Financial Information Forum, to Vanessa Countryman, Secretary, Commission, dated September 22, 2020; William J. Leahey, Head of Regulatory Compliance, Refinitiv Wealth Management, to Vanessa Countryman, Secretary, Commission, dated September 22, 2020; and Ellen Greene, Managing Director, Securities Industry and Financial Markets Association, to Vanessa Countryman, Secretary, Commission, dated September 24, 2020 (''SIFMA'').

[34] *See supra* note 5.

[35] 15 U.S.C. 78s(b)(3)(A).

[36] 17 CFR 240.19b–4(f)(6).

[37] 17 CFR 200.30–3(a)(12).

SMALL BUSINESS ADMINISTRATION

[Disaster Declaration #16972 and #16973; TENNESSEE Disaster Number TN–00128]

Presidential Declaration Amendment of a Major Disaster for Public Assistance Only for the State of Tennessee

AGENCY: U.S. Small Business Administration.

ACTION: Amendment 1.

SUMMARY: This is an amendment of the Presidential declaration of a major disaster for Public Assistance Only for the State of Tennessee (FEMA—4601—DR), dated 05/08/2021.

Incident: Severe Storms, Tornadoes, and Flooding.

Incident Period: 03/25/2021 through 04/03/2021.

DATES: Issued on 06/22/2021.

Physical Loan Application Deadline Date: 07/07/2021.

Economic Injury (EIDL) Loan Application Deadline Date: 02/08/2022.

ADDRESSES: Submit completed loan applications to: U.S. Small Business Administration, Processing and Disbursement Center, 14925 Kingsport Road, Fort Worth, TX 76155.

FOR FURTHER INFORMATION CONTACT: A. Escobar, Office of Disaster Assistance, U.S. Small Business Administration, 409 3rd Street SW, Suite 6050, Washington, DC 20416, (202) 205–6734.

SUPPLEMENTARY INFORMATION: The notice of the President's major disaster declaration for Private Non-Profit organizations in the State of Tennessee, dated 05/08/2021, is hereby amended to include the following areas as adversely affected by the disaster.

Primary Counties: Marion.

All other information in the original declaration remains unchanged.

(Catalog of Federal Domestic Assistance Number 59008)

James Rivera,

Associate Administrator for Disaster Assistance.

[FR Doc. 2021–13779 Filed 6–28–21; 8:45 am]

BILLING CODE 8026–03–P

SMALL BUSINESS ADMINISTRATION

[Disaster Declaration #17001 and #17002; Louisiana Disaster Number LA–00113]

Presidential Declaration of a Major Disaster for Public Assistance Only for the State of Louisiana

AGENCY: U.S. Small Business Administration.

ACTION: Notice.

SUMMARY: This is a Notice of the Presidential declaration of a major disaster for Public Assistance Only for the State of Louisiana (FEMA–4590–DR), dated 06/22/2021.

Incident: Severe Winter Storms.

Incident Period: 02/11/2021 through 02/19/2021.

DATES: Issued on 06/22/2021.

Physical Loan Application Deadline Date: 08/23/2021.

Economic Injury (EIDL) Loan Application Deadline Date: 03/22/2022.

ADDRESSES: Submit completed loan applications to: U.S. Small Business Administration, Processing and Disbursement Center, 14925 Kingsport Road, Fort Worth, TX 76155.

FOR FURTHER INFORMATION CONTACT: A. Escobar, Office of Disaster Assistance, U.S. Small Business Administration, 409 3rd Street SW, Suite 6050, Washington, DC 20416, (202) 205–6734.

SUPPLEMENTARY INFORMATION: Notice is hereby given that as a result of the President's major disaster declaration on 06/22/2021, Private Non-Profit organizations that provide essential services of a governmental nature may file disaster loan applications at the address listed above or other locally announced locations.

The following areas have been determined to be adversely affected by the disaster:

Primary Parishes: Allen, Beauregard, Bossier, Caddo, Catahoula, Concordia, De Soto, East Baton Rouge, Grant, La Salle, Lincoln, Ouachita, Saint Helena, Union, Washington.

The Interest Rates are:

	Percent
For Physical Damage:	
Non-Profit Organizations with Credit Available Elsewhere ...	2.000
Non-Profit Organizations without Credit Available Elsewhere	2.000
For Economic Injury:	
Non-Profit Organizations without Credit Available Elsewhere	2.000

The number assigned to this disaster for physical damage is 17001 7 and for economic injury is 17002 0.

(Catalog of Federal Domestic Assistance Number 59008)

James Rivera,

Associate Administrator for Disaster Assistance.

[FR Doc. 2021–13780 Filed 6–28–21; 8:45 am]

BILLING CODE 8026–03–P

SMALL BUSINESS ADMINISTRATION

[License No. 01/01–0410]

Surrender of License of Small Business Investment Company; Gemini Investors IV, L.P.

Pursuant to the authority granted to the United States Small Business Administration under the Small Business Investment Act of 1958, as amended, under Section 309 of the Act and Section 107.1900 of the Small Business Administration Rules and Regulations (13 CFR 107.1900) to function as a small business investment company under the Small Business Investment Company License No. 01/01–0410 issued to Gemini Investors IV, L.P., said license is hereby declared null and void.

United States Small Business Administration.

Thomas G. Morris,

Acting Associate Administrator, Director, Office of SBIC Operations, Office of Investment and Innovation.

[FR Doc. 2021–13860 Filed 6–28–21; 8:45 am]

BILLING CODE P

SMALL BUSINESS ADMINISTRATION

Data Collection Available for Public Comments

ACTION: 60-day notice and request for comments.

SUMMARY: The Small Business Administration (SBA) intends to request approval, from the Office of Management and Budget (OMB), for the collection of information described below. The Paperwork Reduction Act (PRA) requires federal agencies to publish a notice in the **Federal Register** concerning each collection of information before submission to OMB and to allow 60 days for public comment in response to the notice. This information collection is currently approved under emergency procedures, which included waiver of notice. This publication complies with the PRA requirement to publish that previously waived notice.

DATES: Submit comments on or before August 30, 2021.

ADDRESSES: Send all comments related to this **Federal Register** Notice electronically to *7apaycheckloanprogramquestions@sba.gov* with the Subject Line: ''SBA Form 3512 Comments.''

FOR FURTHER INFORMATION CONTACT: Mary Frias, Loan Specialist, at *mary.frias@sba.gov;* 202–401–8234, or Curtis B. Rich, Management Analyst, 202–205–7030; *curtis.rich@sba.gov;*

SUPPLEMENTARY INFORMATION: Section 1102 of the Coronavirus Aid, Relief, and Economic Security (CARES) Act, Public Law 116–136, authorizes SBA to guarantee loans made by banks or other financial institutions under a new temporary 7(a) program titled the ''Paycheck Protection Program'' (''PPP'') to small businesses, certain non-profit organizations, veterans' organizations, Tribal business concerns, independent contractors and self-employed individuals adversely impacted by the Coronavirus Disease (COVID–19) Emergency. This authority initially expired on August 8, 2020. The Economic Aid to Hard-Hit Small Businesses, Nonprofits, and Venues Act (Economic Aid Act), Public Law 116–260, renewed SBA's authority to make PPP loans until March 31, 2021, and added authority for second draw PPP loans under § 7(a)(37) of the Small Business Act. The program authority was further extended until June 30, 2021, by the PPP Extension Act of 2021, Public Law 117–6.

Any lender that has made PPP loans can use this information collection (SBA Form 3512) to request (1) reinstatement of a PPP loan that was cancelled in SBA's ETRAN system due to the lender's data input error, and/or (2) correction of the lender's data input error in the SBA Loan Approval Amount of a PPP loan on ETRAN or the Paycheck Protection Platform, subject to availability of funds. The form contains examples of the types of lender requests for reinstatement or correction that can be submitted on the form. SBA will rely

on the information submitted on this form to evaluate the lender's request

Due to the urgent need to make Form 3512 available to the PPP Lenders, SBA obtained emergency approval from OMB on December 9, 2020, to collect the information. SBA has made the following non-substantive revisions to the currently approved form, which will be submitted to OMB for review and approval:

• Revised the form in light of the new 2021 origination process for PPP loans, where loans are processed through SBA's Paycheck Protection Platform, rather than directly through SBA's ETRAN system.

• Clarified that corrections and reinstatements are subject to availability of funds.

• Deleted the sentence that states that SBA's program authority for PPP expired on August 8, 2020. That sentence referred to the expiration date of the 2020 program authority.

• Clarified that an Individual Taxpayer Identification Number (ITIN) is an acceptable Taxpayer Identification Number for the Borrower.

(a) *Solicitation of Public Comments:*

SBA is requesting comments on (i) Whether the collection of information is necessary for the agency to properly perform its functions; (ii) whether the burden estimates are accurate; (iii) whether there are ways to minimize the burden, including through the use of automated techniques or other forms of information technology; and (iv) whether there are ways to enhance the quality, utility, and clarity of the information.

(b) *Summary of Proposed Information Collection:*

Title: Lender Certification for Reinstatement or Correction of Paycheck Protection Program (PPP) Loan.

Form Number: SBA Form 3512.

OMB Control Number: 3245–0415.

Description of respondents: Lenders that participate in SBA's Paycheck Protection.

Estimated number of respondents: 1, 350.

Estimated time per response: 30 minutes.

Total estimated annual responses: 4,000.

Total Estimated Annual Hour Burden: 2,000 hours.

Curtis Rich,

Management Analyst.

[FR Doc. 2021–13810 Filed 6–28–21; 8:45 am]

BILLING CODE 8026–03–P

SMALL BUSINESS ADMINISTRATION

[License No. 01/01–0417]

Surrender of License of Small Business Investment Company; Gemini Investors V L.P.

Pursuant to the authority granted to the United States Small Business Administration under the Small Business Investment Act of 1958, as amended, under Section 309 of the Act and Section 107.1900 of the Small Business Administration Rules and Regulations (13 CFR 107.1900) to function as a small business investment company under the Small Business Investment Company License No. 01/01–0417 issued to Gemini Investors V, L.P., said license is hereby declared null and void.

United States Small Business Administration.

Thomas G. Morris,

Acting Associate Administrator, Director, Office of SBIC Liquidation, Office of Investment and Innovation.

[FR Doc. 2021–13859 Filed 6–28–21; 8:45 am]

BILLING CODE;P

DEPARTMENT OF STATE

[Public Notice: 11452]

Notice of Determinations; Culturally Significant Objects Being Imported for Exhibition—Determinations: ''Titian: Women, Myth and Power'' Exhibition

SUMMARY: Notice is hereby given of the following determinations: I hereby determine that certain objects being imported from abroad pursuant to agreements with their foreign owners or custodians for temporary display in the exhibition ''Titian: Women, Myth and Power'' at the Isabella Stewart Gardner Museum, Boston, Massachusetts, and at possible additional exhibitions or venues yet to be determined, are of cultural significance, and, further, that their temporary exhibition or display within the United States as aforementioned is in the national interest. I have ordered that Public Notice of these determinations be published in the **Federal Register**.

FOR FURTHER INFORMATION CONTACT: Chi D. Tran, Program Administrator, Office of the Legal Adviser, U.S. Department of State (telephone: 202–632–6471; email: *section2459@state.gov*). The mailing address is U.S. Department of State, L/PD, SA–5, Suite 5H03, Washington, DC 20522–0505.

SUPPLEMENTARY INFORMATION: The foregoing determinations were made pursuant to the authority vested in me by the Act of October 19, 1965 (79 Stat. 985; 22 U.S.C. 2459), Executive Order 12047 of March 27, 1978, the Foreign Affairs Reform and Restructuring Act of 1998 (112 Stat. 2681, *et seq.;* 22 U.S.C. 6501 note, *et seq.*), Delegation of Authority No. 234 of October 1, 1999, and Delegation of Authority No. 236–3 of August 28, 2000.

Matthew R. Lussenhop,

Acting Assistant Secretary, Bureau of Educational and Cultural Affairs, Department of State.

[FR Doc. 2021–13819 Filed 6–28–21; 8:45 am]

BILLING CODE 4710–05–P

DEPARTMENT OF STATE

[Public Notice: 11450]

Notice of Information Collection Under OMB Emergency Review: Affidavit of Relationship for Minors Who Are Nationals of El Salvador, Guatemala, or Honduras

ACTION: Notice of request for emergency OMB approval and public comment.

SUMMARY: The Department of State has submitted the information collection request described below to the Office of Management and Budget (OMB) for review and approval in accordance with the emergency review procedures of the Paperwork Reduction Act of 1995. The purpose of this notice is to allow for public comment from all interested individuals and organizations. Emergency review and approval of this collection has been requested from OMB by 30 days from submission. If granted, the emergency approval is only valid for 180 days. The Department plans to follow this emergency request with a submission for a 3-year approval through OMB's normal PRA clearance process.

DATES: All public comments must be received by July 30, 2021.

ADDRESSES: Direct any comments on this emergency request to both the Department of State Desk Officer in the Office of Information and Regulatory Affairs at the Office of Management and Budget (OMB) and to PRM/A.

• You may submit comments to OMB by the following methods:

• *Email: oira_submission@omb.eop.gov.* You must include the DS form number, information collection title, and OMB control number in the subject line of your message.

• *Fax:* 202–395–5806. Attention: Desk Officer for Department of State.

You may submit comments to PRM/A by the following methods:

• *Web:* Persons with access to the internet may comment on this notice by going to *www.Regulations.gov*. You can search for the document by entering ''Docket Number: DOS–2021–0014'' in the Search field. Then click the ''Comment Now'' button and complete the comment form.

• *Email: SiramS@state.gov*. You must include *Emergency Submission Comment on ''information collection title*'' in the subject line of your message.

• *Regular Mail:* Send written comments to Sumitra Siram, PRM/A, 2025 E St. NW, Washington, DC 20006.

You must include the DS form number (if applicable), information collection title, and the OMB control number in any correspondence.

FOR FURTHER INFORMATION CONTACT: Direct requests for additional information regarding the collection listed in this notice, including requests for copies of the proposed collection instrument and supporting documents to Sumitra Siram, who may be reached on at *SiramS@state.gov or 202–453–9250*.

SUPPLEMENTARY INFORMATION:

• *Title of Information Collection:* Affidavit of Relationship for Minors who are Nationals of El Salvador, Guatemala, or Honduras.

• *OMB Control Number:* 1405–0217.

• *Type of Request:* Emergency Review.

• *Originating Office:* PRM/A.

• *Form Number:* DS–7699.

• *Respondents:* Those seeking qualified family members to access the U.S. Refugee Admissions Program.

• *Estimated Number of Respondents:* 2,000.

• *Estimated Number of Responses:* 2,000.

• *Average Time Per Response:* One hour.

• *Total Estimated Burden Time:* 2,000 hours.

• *Frequency:* ''On occasion''.

• *Obligation to respond:* ''Voluntary''.

We are soliciting public comments to permit the Department to:

• Evaluate whether the proposed information collection is necessary for the proper functions of the Department.

• Evaluate the accuracy of our estimate of the time and cost burden of this proposed collection, including the validity of the methodology and assumptions used.

• Enhance the quality, utility, and clarity of the information to be collected.

• Minimize the reporting burden on those who are to respond, including the use of automated collection techniques or other forms of information technology.

Please note that comments submitted in response to this Notice are public record. Before including any detailed personal information, you should be aware that your comments as submitted, including your personal information, will be available for public review

Abstract of Proposed Collection

To obtain biographical information about children overseas who intend to seek access to the USRAP, as well as other eligible family members or caregivers, for verification by the U.S. government. This form also assists DHS's U.S. Citizenship and Immigration Services to verify parent-child relationships during refugee case adjudication. This form is necessary for implementation of this program.

Methodology

Working with a State Department contracted Resettlement Agencies (RA), qualifying individuals in the United States must complete the AOR and submit supporting documentation to: (a) Establish that they meet the requirements for being a qualifying individual who currently falls into one of the aforementioned categories; (b) provide a list of qualifying family members who may seek access to refugee resettlement in the United States. Once completed, the form is sent by the RA to the Refugee Processing Center (RPC) for case creation and processing. The information is used by the RPC for case management; by USCIS to determine that the qualifying individual falls into one of the aforementioned categories; and by the Resettlement Support Center (RSC) for case prescreening and further processing after DHS interview. The International Organization for Migration (IOM) administers the RSC in Latin America under a Memorandum of Understanding with the Department to conduct case prescreening and assist in the processing of refugee applicants.

Kevin E. Bryant,

Deputy Director, Office of Directives Management, Department of State.

[FR Doc. 2021–13821 Filed 6–28–21; 8:45 am]

BILLING CODE 4710–33–P

SUSQUEHANNA RIVER BASIN COMMISSION

Projects Approved for Consumptive Uses of Water

AGENCY: Susquehanna River Basin Commission.

ACTION: Notice.

SUMMARY: This notice lists the projects approved by rule by the Susquehanna River Basin Commission during the period set forth in **DATES**.

DATES: May 1–31, 2021.

ADDRESSES: Susquehanna River Basin Commission, 4423 North Front Street, Harrisburg, PA 17110–1788.

FOR FURTHER INFORMATION CONTACT: Jason E. Oyler, General Counsel and Secretary to the Commission, telephone: (717) 238–0423, ext. 1312; fax: (717) 238–2436; email: *joyler@srbc.net*. Regular mail inquiries may be sent to the above address.

SUPPLEMENTARY INFORMATION: This notice lists the projects, described below, receiving approval for the consumptive use of water pursuant to the Commission's approval by rule process set forth in 18 CFR 806.22(f) for the time period specified above:

Water Source Approval—Issued Under 18 CFR 806.22(f)

1. LPR Energy, LLC; Pad ID: Snow Shoe 2; ABR–201011007.R2; Snow Shoe Township, Centre County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: May 4, 2021.

2. LPR Energy, LLC; Pad ID: Snow Shoe 4; ABR–201011042.R2; Snow Shoe Township, Centre County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: May 4, 2021.

3. Chief Oil & Gas, LLC; Pad ID: PMG Annie Drilling Pad #1; ABR–201103015.R2; Springville Township, Susquehanna County; Pa.; Consumptive Use of Up to 2.0000 mgd; Approval Date: May 4, 2021.

4. XTO Energy, Inc.; Pad ID: PA Tract B1H; ABR–201104023.R2; Chapman Township, Clinton County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: May 4, 2021.

5. Frontier Natural Resources, Inc.; Pad ID: Winner 1; ABR–201101027.R2; West Keating Township, Clinton County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: May 5, 2021.

6. Diversified Oil & Gas, LLC; Pad ID: Lundy Well Pad; ABR–201103010.R2; Gamble Township, Lycoming County, Pa.; Consumptive Use of Up to 3.0000 mgd; Approval Date: May 5, 2021.

7. Range Resources—Appalachia, LLC; Pad ID: Gulf USA #63H Drilling Pad; ABR–201103043.R2; Snow Shoe Township, Centre County, Pa.; Consumptive Use of Up to 1.0000 mgd; Approval Date: May 5, 2021.

8. SWN Production Company, LLC; Pad ID: Broughton; ABR–201012001.R2; Morris Township, Tioga County, Pa.;

Consumptive Use of Up to 7.50000 mgd; Approval Date: May 7, 2021.

9. Pennsylvania General Energy Company, L.L.C.; Pad ID: COP Tract 293 Pad F; ABR–201105001.R2; Cummings Township, Lycoming County, Pa.; Consumptive Use of Up to 3.0000 mgd; Approval Date: May 7, 2021.

10. Cabot Oil & Gas Corporation; Pad ID: GeigerK P1; ABR–202105001; Bridgewater Township, Susquehanna County, Pa.; Consumptive Use of Up to 5.0000 mgd; Approval Date: May 7, 2021.

11. M4 Energy, LLC; Pad ID: Triana-Young Pad A; ABR–20100677.R2; Hector Township, Potter County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: May 10, 2021.

12. Range Resources—Appalachia, LLC; Pad ID: Shipman, James Unit #1H—#2H Drilling Pad; ABR–201104014.R2; Lewis Township, Lycoming County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: May 10, 2021.

13. Range Resources—Appalachia, LLC; Pad ID: Null, Eugene Unit #2H–#7H Drilling Pad; ABR–201104011.R2; Lewis Township, Lycoming County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: May 10, 2021.

14. Chesapeake Appalachia, L.L.C.; Pad ID: Hess; ABR–201105004.R2; Rome Township, Bradford County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: May 11, 2021.

15. Chesapeake Appalachia, L.L.C.; Pad ID: Ramblinrose; ABR–201105003.R2; Tuscarora Township, Bradford County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: May 11, 2021.

16. Chief Oil & Gas, LLC; Pad ID: SGL–12 M NORTH UNIT PAD B; ABR–202105002; Leroy Township, Bradford County, Pa.; Consumptive Use of Up to 2.5000 mgd; Approval Date: May 11, 2021.

17. Chesapeake Appalachia, L.L.C.; Pad ID: Lomison Inc.; ABR–201105023.R2; Burlington Township, Bradford County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: May 27, 2021.

18. Chesapeake Appalachia, L.L.C.; Pad ID: LRJ; ABR–201105011.R2; Rush Township, Susquehanna County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: May 27, 2021.

19. SWN Production Company, LLC; Pad ID: Sadecki Well Pad; ABR–201105020.R2; Liberty Township, Susquehanna County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: May 27, 2021.

20. Chesapeake Appalachia, L.L.C.; Pad ID: Karp; ABR–201105027.R2; Lemon Township, Wyoming County, Pa.; Consumptive Use of Up to 7.5000 mgd; Approval Date: May 31, 2021.

21. SWN Production Company, LLC; Pad ID: Mitchell Well Pad; ABR–201105026.R2; Franklin Township, Susquehanna County, Pa.; Consumptive Use of Up to 4.0000 mgd; Approval Date: May 31, 2021.

Approvals By Rule—Issued Under 18 CFR 806.22(f)—Revocation

1. Seneca Resources Company, LLC; Pad ID: Hector 2; ABR–201605004; Hector Township, Potter County, Pa.; Revocation Date: May 24, 2021.

2. Seneca Resources Company, LLC; Pad ID: Swingle 591; ABR–201012018.R2; Richmond Township, Tioga County, Pa.; Revocation Date: May 24, 2021.

3. Seneca Resources Company, LLC; Pad ID: Costanzo 818; ABR–201006112.R1 Chatham Township, Tioga County, Pa.; Revocation Date: May 25, 2021.

Authority: Pub. L. 91–575, 84 Stat. 1509 *et seq.,* 18 CFR parts 806, 807, and 808.

Dated: June 24, 2021.

Jason E. Oyler,

General Counsel and Secretary to the Commission.

[FR Doc. 2021–13831 Filed 6–28–21; 8:45 am]

BILLING CODE 7040–01–P

SUSQUEHANNA RIVER BASIN COMMISSION

Actions Taken at June 17, 2021, Meeting

AGENCY: Susquehanna River Basin Commission.

ACTION: Notice.

SUMMARY: As part of its regular business meeting held on June 17, 2021, from Harrisburg, Pennsylvania, the Commission approved the applications of certain water resources projects, and took additional actions, as set forth in the **SUPPLEMENTARY INFORMATION** below.

DATES: June 17, 2021.

ADDRESSES: Susquehanna River Basin Commission, 4423 N. Front Street, Harrisburg, PA 17110–1788.

FOR FURTHER INFORMATION CONTACT: Jason E. Oyler, General Counsel and Secretary, telephone: (717) 238–0423, ext. 1312, fax: (717) 238–2436; email: *joyler@srbc.net.* Regular mail inquiries may be sent to the above address. See also Commission website at *www.srbc.net.*

SUPPLEMENTARY INFORMATION: In addition to the actions taken on projects identified in the summary above and the listings below, the following items were also presented or acted upon at the business meeting: (1) Election of Commission officers for FY2022; (2) reconciliation of the budget for FY2022; (3) ratification of two grant amendments; (4) adoption of a newly revised *Comprehensive Plan for the Water Resources of the Susquehanna River Basin* for 2021 through 2041; (5) adoption of the 2022–2024 Water Resources Program; and (4) Adoption of a Resolution regarding Environmental Justice.

Project Applications Approved

1. *Project Sponsor and Facility:* ARD Operating, LLC (West Branch Susquehanna River), Piatt Township, Lycoming County, Pa. Modification to update flow protection rates to be in accordance with current Low Flow Protection Policy No. 2012–01 (Docket No. 20120601).

2. *Project Sponsor:* CAN DO, Inc. Project Facility: Humbolt Industrial Park, Hazle Township, Luzerne County, Pa. Applications for renewal of groundwater withdrawals (30-day averages) of up to 0.187 mgd from Humbolt Well 1, up to 0.187 mgd from Humbolt Well 3, up to 0.230 mgd from Humbolt Well 7, up to 0.144 mgd from Humbolt Well 8, and up to 0.230 mgd from Humbolt Well 9 (Docket No. 19960501).

3. *Project Sponsor and Facility:* Geneva Farm Golf Course, Inc., Dublin District, Harford County, Md. Application for renewal of consumptive use of up to 0.099 mgd (30-day average) (Docket No. 19910104).

4. *Project Sponsor and Facility:* Greenfield Township Municipal Authority, Greenfield Township, Blair County, Pa. Application for groundwater withdrawal of up to 0.499 mgd (30-day average) from Well PW–4.

5. *Project Sponsor and Facility:* PPG Operations LLC (West Branch Susquehanna River), Goshen Township, Clearfield County, Pa. Application for surface water withdrawal of up to 3.000 mgd (peak day).

6. *Project Sponsor and Facility:* Quarryville Borough Authority, Quarryville Borough, Lancaster County, Pa. Application for renewal of groundwater withdrawal of up to 0.250 mgd (30-day average) from Well 2 (Docket No. 19931102).

7. *Project Sponsor and Facility:* SUEZ Water Owego-Nichols Inc., Village of Owego and Town of Owego, Tioga County, N.Y. Applications for groundwater withdrawals (30-day averages) of up to 0.880 mgd from Well 1, up to 1.115 mgd from Well 3, and up to 0.710 mgd from Well 4.

8. *Project Sponsor:* Weaverland Valley Authority. Project Facility: Blue Ball Water System, East Earl Township, Lancaster County, Pa. Application for groundwater withdrawal of up to 0.144 mgd (30-day average) from Well 4 as well as recognizing historic withdrawals from wells 1, 2 and 3.

Commission-Initiated Project Approval Modifications

9. *Project Sponsor and Facility:* Municipal Authority of the Borough of Mansfield, Richmond Township, Tioga County, Pa. Conforming the grandfathered amount with the forthcoming determination for a withdrawal from Webster Reservoir up to 0.311 mgd (30-day average) (Docket No. 20130609).

10. *Project Sponsor and Facility:* Williamsport Municipal Water Authority, Williamsport City, Lycoming County, Pa. Conforming the grandfathered amounts with the forthcoming determination for withdrawals (30-day averages) from Well 3 up to 0.940 mgd, from Well 4 up to 0.940 mgd, from Well 5 up to 2.141 mgd, from Well 6 up to 0.687 mgd, from Well 7 up to 2.254 mgd, from Well 8 up to 0.987 mgd, from Well 9 up to 0.800 mgd, from Mosquito Creek up to 6.833 mgd, and from Hagermans Run up to 4.926 mgd (Docket No. 20110628).

Project Approval Tabled

11. *Project Sponsor and Facility:* Pennsylvania State University, College Township, Centre County, Pa. Applications for renewal of groundwater withdrawal of up to 0.960 mgd (30-day average) from Well UN–37 and consumptive use of up to 0.960 mgd (peak day) (Docket No. 19890106–1).

Project Withdrawn

12. *Project Sponsor and Facility:* Beech Resources, LLC (Lycoming Creek), Lycoming Township, Lycoming County, Pa. Application for surface water withdrawal of up to 1.500 mgd (peak day).

Project Terminated

13. *Project Sponsor and Facility:* City of Aberdeen, Harford County, Md. Modifications to extend the approval term of the consumptive use, surface water withdrawal, and out-of-basin diversion approval (Docket No. 20021210) to allow additional time for evaluation of the continued use of the source for the Aberdeen Proving Ground-Aberdeen Area.

(Authority: Pub. L. 91–575, 84 Stat. 1509 *et seq.,* 18 CFR parts 806, 807, and 808.)

Dated: June 24, 2021.

Jason E. Oyler,

General Counsel and Secretary to the Commission.

[FR Doc. 2021–13829 Filed 6–28–21; 8:45 am]

BILLING CODE 7040–01–P

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

[Docket No. FRA–2021–0006–N–6]

Proposed Agency Information Collection Activities; Comment Request

AGENCY: Federal Railroad Administration (FRA), U.S. Department of Transportation (DOT).

ACTION: Notice of information collection; request for comment.

SUMMARY: Under the Paperwork Reduction Act of 1995 (PRA) and its implementing regulations, FRA seeks approval of the Information Collection Request (ICR) abstracted below. Before submitting this ICR to the Office of Management and Budget (OMB) for approval, FRA is soliciting public comment on specific aspects of the activities identified in the ICR.

DATES: Interested persons are invited to submit comments on or before August 30, 2021.

ADDRESSES: Written comments and recommendations for the proposed ICR should be submitted on *regulations.gov* to the docket, Docket No. FRA 2021–0006. All comments received will be posted without change to the docket, including any personal information provided. Please refer to the assigned OMB control number in any correspondence submitted. FRA will summarize comments received in response to this notice in a subsequent notice and include them in its information collection submission to OMB for approval.

FOR FURTHER INFORMATION CONTACT: Ms. Hodan Wells, Information Collection Clearance Officer, at email: *hodan.wells@dot.gov* or telephone: (202) 493–0440.

SUPPLEMENTARY INFORMATION: The PRA, 44 U.S.C. 3501–3520, and its implementing regulations, 5 CFR part 1320, require Federal agencies to provide 60-days' notice to the public to allow comment on information collection activities before seeking OMB approval of the activities. *See* 44 U.S.C. 3506, 3507; 5 CFR 1320.8 through 1320.12. Specifically, FRA invites interested parties to comment on the following ICR regarding: (1) Whether the information collection activities are necessary for FRA to properly execute its functions, including whether the activities will have practical utility; (2) the accuracy of FRA's estimates of the burden of the information collection activities, including the validity of the methodology and assumptions used to determine the estimates; (3) ways for FRA to enhance the quality, utility, and clarity of the information being collected; and (4) ways for FRA to minimize the burden of information collection activities on the public, including the use of automated collection techniques or other forms of information technology. *See* 44 U.S.C. 3506(c)(2)(A); 5 CFR 1320.8(d)(1).

FRA believes that soliciting public comment may reduce the administrative and paperwork burdens associated with the collection of information that Federal regulations mandate. In summary, FRA reasons that comments received will advance three objectives: (1) Reduce reporting burdens; (2) organize information collection requirements in a ''user-friendly'' format to improve the use of such information; and (3) accurately assess the resources expended to retrieve and produce information requested. *See* 44 U.S.C. 3501.

The summary below describes the ICR that FRA will submit for OMB clearance as the PRA requires:

Title: Hours of Service Regulations.

OMB Control Number: 2130–0005.

Abstract: FRA's hours of service recordkeeping regulations (49 CFR part 228), amended as mandated by the Rail Safety Improvement Act of 2008, include substantive hours of service requirements for train employees (*i.e.,* locomotive engineers and conductors) providing commuter and intercity rail passenger transportation (*e.g.,* maximum on-duty periods, minimum off-duty periods, and other limitations). The regulations also require railroads to evaluate passenger train employee work schedules for risk of employee fatigue and implement measures to mitigate the risk, and to submit to FRA for approval certain schedules and mitigation plans. Finally, the regulations include recordkeeping and reporting provisions requiring railroads to keep hours of service records, and report excessive service, for train employees, signal employees, and dispatching service employees on both freight and passenger railroads.

FRA uses the information collected to verify that railroads do not require or allow their employees to exceed maximum on-duty periods, and ensure that they abide by minimum off-duty periods, and adhere to other limitations

in this regulation, to enhance rail safety and reduce the risk of accidents/incidents caused, or contributed to, by train employee fatigue.

Type of Request: Extension without change (with changes in estimates) of a currently approved collection.

Affected Public: Businesses (railroads and signal contractors).

Form(s): FRA F 6180.3.

Respondent Universe: 796 railroads, signal contractors and subcontractors.

Frequency of Submission: On occasion.

Reporting Burden:

CFR section [1]	Respondent universe	Total annual responses	Average time per responses	Total annual burden hours	Total cost equivalent [2]
228.11—Hours of duty records	796 railroads/signal contractors & subcontractors.	17,448,669 (electronic records) + 918,351 (paper records).	3 minutes (electronic records) + 8 minutes (paper records).	994,880	$77,043,507
228.17—Dispatchers record of train movements.	65 dispatch offices	285,000 cumulative train-movement tracking.	1 hour	285,000	22,070,400
228.19(g)–(h)—Monthly reports of excess service—Exception (FRA F 6180.3).	796 railroads/signal contractors & subcontractors.	1,750 reports	1 hour	1,750	135,520
228.103/.107—Construction of employees' sleeping quarters—Petition request to FRA to allow construction near work areas.	796 railroads/signal contractors & subcontractors.	2 petition waivers	24 hours	48	3,717
228.207(b)—Training—Initial training—New employees and supervisors.	671 railroads	250 training records	2 minutes	8	620
—(c) Refresher training—System audits for irregularities by railroads and contractors.	796 railroads/signal contractors & subcontractors.	796 audits and records.	2 hours	1,592	123,284
228.407(a)—Analysis of work schedules—Railroads' analysis of one cycle of work schedules of employees engaged in commuter or intercity passenger transportation.	34 railroads	3 analyses	2 hours	6	465
—(b) Submissions of certain work schedules and any fatigue mitigation plans and determinations of operational necessity or declarations.	34 railroads	3 fatigue mitigation plans.	20 hours	60	4,646
—(b) Submissions to FRA for review and approval.	34 railroads	1 submission	1 hour	1	77
—(d) Analysis of certain later changes in work schedules—Analyses and mitigation plans—Resubmission to FRA for approval.	34 railroads	1 analysis or plan	1 hour	1	9,647
228.411—Training programs on fatigue and related topics (*e.g.,* rest, alertness, changes in rest cycles, etc.).	34 railroads	34 railroads	2 hours	68	5,266
—(e) Records of training on fatigue and related topics.	34 railroads	5,539 records	1 minute	92	7,124
228.411(f)—Conditional exclusion—Written declaration to FRA by tourist, scenic, historic, or excursion railroads seeking exclusion.	83 railroads	1 written declaration	1 hour	1	77
Totals [3]	796 railroads/signal contractors & subcontractors.	18,660,400 responses.	N/A	1,283,507	99,404,352

[1] The current inventory exhibits a total burden of 3,421,290 hours while the total burden of this notice is 1,283,507 hours. FRA determined many of the estimates were initial estimates, outdated, or duplicates. Moreover, other estimates were not derived from PRA requirements, thus leading to the increased figures in the current inventory, which were decreased accordingly in this notice.

[2] The dollar equivalent cost is derived from the Surface Transportation Board's 2020 Full Year Wage A&B data series using the appropriate employee group hourly wage rate that includes a 75-percent overhead charge.

[3] Totals may not add due to rounding.

Total Estimated Annual Responses: 18,660,400.

Total Estimated Annual Burden: 1,283,507 hours.

Total Estimated Annual Burden Hour Dollar Cost Equivalent: $99,404,352.

Under 44 U.S.C. 3507(a) and 5 CFR 1320.5(b) and 1320.8(b)(3)(vi), FRA informs all interested parties that a respondent is not required to respond to, conduct, or sponsor a collection of information that does not display a currently valid OMB control number.

Authority: 44 U.S.C. 3501–3520.

Brett A. Jortland,

Acting Chief Counsel.

[FR Doc. 2021–13787 Filed 6–28–21; 8:45 am]

BILLING CODE 4910–06–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Internal Revenue Service Advisory Council; Meeting

AGENCY: Internal Revenue Service, Department of Treasury.

ACTION: Notice of meeting.

SUMMARY: The Internal Revenue Service Advisory Council will hold a public meeting.

DATES: The meeting will be held Wednesday, July 14, 2021.

ADDRESSES: The meeting will be held virtually.

FOR FURTHER INFORMATION CONTACT: Ms. Anna Brown, Office of National Public Liaison, at 202–317–6564 or send an email to *PublicLiaison@irs.gov.*

SUPPLEMENTARY INFORMATION: Notice is hereby given pursuant to section 10(a)(2) of the Federal Advisory Committee Act, 5 U.S.C. App. (1988), that a public meeting of the Internal Revenue Service Advisory Council (IRSAC) will be held on Wednesday, July 14, 2021, to discuss topics that may be recommended for inclusion in a future report of the Council. The meeting will take place 3:00–4:00 p.m. EDT.

The meeting will be held via Zoom. To register and for meeting link instructions, members of the public may contact Ms. Anna Brown at 202–317–6564 or send an email to *PublicLiaison@irs.gov.* Attendees are encouraged to join at least 5–10 minutes before the meeting begins.

Time permitting, after the close of this discussion by IRSAC members, interested persons may make oral statements germane to the Council's work. Persons wishing to make oral statements should contact Ms. Anna Brown at *PublicLiaison@irs.gov* and include the written text or outline of comments they propose to make orally. Such comments will be limited to five minutes in length. In addition, any interested person may file a written statement for consideration by the IRSAC by sending it to *PublicLiaison@irs.gov.*

Dated: June 24, 2021.

John A. Lipold,

Designated Federal Officer, Internal Revenue Service Advisory Council.

[FR Doc. 2021–13835 Filed 6–28–21; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF THE TREASURY

Agency Information Collection Activities; Submission for OMB Review; Comment Request; Multiple Internal Revenue Service Information Collection Requests

AGENCY: Departmental Offices, U.S. Department of the Treasury.

ACTION: Notice.

SUMMARY: The Department of the Treasury will submit the following information collection requests to the Office of Management and Budget (OMB) for review and clearance in accordance with the Paperwork Reduction Act of 1995, on or after the date of publication of this notice. The public is invited to submit comments on these requests.

DATES: Comments must be received on or before July 29, 2021.

ADDRESSES: Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to *www.reginfo.gov/public/do/PRAMain.* Find this particular information collection by selecting ''Currently under 30-day Review—Open for Public Comments'' or by using the search function.

FOR FURTHER INFORMATION CONTACT: Copies of the submissions may be obtained from Molly Stasko by emailing *PRA@treasury.gov,* calling (202) 622–8922, or viewing the entire information collection request at *www.reginfo.gov.*

SUPPLEMENTARY INFORMATION:

Internal Revenue Service (IRS)

1. Title: Health Insurance Premium Tax Credit.

OMB Control Number: 1545–2232.

Type of Review: Extension of a currently approved collection.

Description: The IRS developed Form 1095–A under the authority of ICR section 36B(f)(3) for marketplace exchanges to give enrollment information to individuals for use in computing the amount of premium tax credit to which they are entitled under the Patient Protection and Affordable Care Act, Public Law 111–148, as amended, and file an accurate tax return. Marketplaces also must report certain information monthly to the IRS about individuals who receive from the Marketplace a certificate of exemption from the individual shared responsibility provision.

Form Number: IRS Form 1095–A.

Affected Public: Business or other for-profits.

Estimated Number of Respondents: 15.

Frequency of Response: Annually, Monthly.

Estimated Total Number of Annual Responses: 3,250,000.

Estimated Time per Respondent: 0.3 minutes.

Estimated Total Annual Burden Hours: 16,250 hours.

2. Title: Information Reporting by Applicable Large Employers on Health Insurance Coverage Offered Under Employer-Sponsored Plans.

OMB Control Number: 1545–2251.

Type of Review: Extension of a currently approved collection.

Description: This program contains regulations providing guidance to employers that are subject to the information reporting requirements under section 6056 of the Internal Revenue Code, enacted by the Patient Protection and Affordable Care Act (Pub. L. 111–148 (124 Stat. 119 (2010))). Section 6056 requires those employers to report to the IRS information about their compliance with the employer shared responsibility provisions of section 4980H of the Code and about the health care coverage, if any, they have offered employees. Section 6056 also requires those employers to furnish related statements to employees in order that employees may use the statements to help determine whether, for each month of the calendar year, they can claim on their tax returns a premium tax credit under section 36B of the Code (premium tax credit).

Form Number: IRS Form 1094–C, IRS Form 1095–C, and IRS Form 4423.

Affected Public: Businesses and other for-profit organizations; and not-for-profit institutions.

Estimated Number of Respondents: 105,400,006.

Frequency of Response: Annually.

Estimated Total Number of Annual Responses: 105,400,006.

Estimated Time per Response: 4 hours for 1094–C, 12 minutes for 1095–C, 20 minutes for Form 4423.

Estimated Total Annual Burden Hours: 22,600,002 hours.

(Authority: 44 U.S.C. 3501 *et seq.*)

Dated: June 23, 2021.

Molly Stasko,

Treasury PRA Clearance Officer.

[FR Doc. 2021–13760 Filed 6–28–21; 8:45 am]

BILLING CODE 4830–01–P

DEPARTMENT OF VETERANS AFFAIRS

[OMB Control No. 2900–0024]

Agency Information Collection Activity Under OMB Review: Insurance Deduction Authorization

AGENCY: Veterans Benefits Administration, Department of Veterans Affairs.

ACTION: Notice.

SUMMARY: In compliance with the Paperwork Reduction Act (PRA) of 1995, this notice announces that the Veterans Benefits Administration, Department of Veterans Affairs, will submit the collection of information abstracted below to the Office of Management and Budget (OMB) for review and comment. The PRA submission describes the nature of the information collection and its expected cost and burden and it includes the actual data collection instrument.

DATES: Written comments and recommendations for the proposed information collection should be sent within 30 days of publication of this notice to *www.reginfo.gov/public/do/PRAMain.* Find this particular information collection by selecting ''Currently under 30-day Review—Open for Public Comments'' or by using the search function. Refer to ''OMB Control No. 2900–0024.

FOR FURTHER INFORMATION CONTACT: Maribel Aponte, Office of Enterprise and Integration, Data Governance Analytics (008), 1717 H Street NW, Washington, DC 20006, (202) 266–4688 or email *maribel.aponte@va.gov.* Please refer to ''OMB Control No. 2900–0024'' in any correspondence.

SUPPLEMENTARY INFORMATION:

Authority: 44 U.S.C. 3501–21.

Title: Insurance Deduction Authorization VA Form 29–888.

OMB Control Number: 2900–0024.

Type of Review: Revision of a currently approved collection.

Abstract: These forms are used by veterans to authorize the Department of Veterans Affairs (VA) to make deductions from benefit payments to pay premiums, loans and/or liens on his/her insurance contract. The information requested is authorized by law, 38 CFR 8.8. This form was allowed to expire due to high level of work volume and staffing changes.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The **Federal Register** Notice with a 60-day comment period soliciting comments on this collection of information was published at: 86 FR 19697 on April 14, 2021, pages 19697 and 19698.

Affected Public: Individuals and Households.

Estimated Annual Burden: 622 hours.

Estimated Average Burden per Respondent: 10 minutes.

Frequency of Response: On Occasion.

Estimated Number of Respondents: 3,732.

By direction of the Secretary.

Dorothy Glasgow,

VA PRA Clearance Officer, (Alternate), Office of Enterprise and Integration/Data Governance Analytics, Department of Veterans Affairs.

[FR Doc. 2021–13762 Filed 6–28–21; 8:45 am]

BILLING CODE 8320–01–P



FEDERAL REGISTER

Vol. 86 Tuesday,
No. 122 June 29, 2021

Part II

Environmental Protection Agency

40 CFR Parts 9, 59, 60, et al.
Improvements for Heavy-Duty Engine and Vehicle Test Procedures, and Other Technical Amendments; Final Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 9, 59, 60, 85, 86, 88, 89, 90, 91, 92, 94, 1027, 1033, 1036, 1037, 1039, 1042, 1043, 1045, 1048, 1051, 1054, 1060, 1065, 1066, 1068, and 1074

[EPA–HQ–OAR–2019–0307; FRL–10018–52–OAR]

RIN 2060–AU62

Improvements for Heavy-Duty Engine and Vehicle Test Procedures, and Other Technical Amendments

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The Environmental Protection Agency (EPA) is amending the test procedures for heavy-duty engines and vehicles to improve accuracy and reduce testing burden. EPA is also making other regulatory amendments concerning light-duty vehicles, heavy-duty vehicles, highway motorcycles, locomotives, marine engines, other nonroad engines and vehicles, and stationary engines. These amendments affect the certification procedures for exhaust emission standards and related requirements. EPA is finalizing similar amendments for evaporative emission standards for nonroad equipment and portable fuel containers. The amendments increase compliance flexibility, harmonize with other requirements, add clarity, correct errors, and streamline the regulations. Given the nature of the amendments, they will have neither significant environmental impacts nor significant economic impacts for any sector.

DATES: This final rule is effective on July 29, 2021. The incorporation by reference of certain publications listed in this regulation is approved by the Director of the Federal Register as of July 29, 2021.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA–HQ–OAR–2019–0307. All documents in the docket are listed on the www.regulations.gov website. Although listed in the index, some information is not publicly available, e.g., confidential business information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in www.regulations.gov or in hard copy at Air and Radiation Docket and Information Center, EPA Docket Center, EPA/DC, EPA WJC West Building, 1301 Constitution Ave. NW, Room 3334, Washington, DC. Note that the EPA Docket Center and Reading Room were closed to public visitors on March 31, 2020, to reduce the risk of transmitting COVID–19. The Docket Center staff will continue to provide remote customer service via email, phone, and webform. 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 on EPA Docket Center services and the current status, go to *https://www.epa.gov/dockets.*

FOR FURTHER INFORMATION CONTACT: Alan Stout, Office of Transportation and Air Quality, Assessment and Standards Division, Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor, MI 48105; telephone number: (734) 214–4805; email address: *stout.alan@epa.gov.*

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I. General Information

Does this action apply to me?

This action relates to companies that manufacture, sell, or import into the United States new heavy-duty engines or Class 2b through 8 trucks, including combination tractors, vocational vehicles, and all types of buses.[1] Vocational vehicles include municipal, commercial, and recreational vehicles. Additional amendments apply for different manufacturers of light-duty vehicles, light-duty trucks, highway motorcycles, stationary engines, and various types of nonroad engines, vehicles, and equipment.[2] Regulated categories and entities include the following:

NAICS codes [a]	NAICS titles	Examples of potentially regulated entities
333618, 336111, 336112, 336120, 336211, 336212, 336611, 336999.	Other Engine Equipment Manufacturing, Automobile Manufacturing, Light Truck and Utility Vehicle Manufacturing, Heavy Duty Truck Manufacturing, Motor Vehicle Body Manufacturing, Truck Trailer Manufacturing, Ship Building and Repairing, All Other Transportation Equipment Manufacturing.	Motor vehicle manufacturers and engine manufacturers.
811111, 811112, 811198, 423110	General Automotive Repair, Automotive Exhaust System Repair, All Other Automotive Repair and Maintenance, Automobile and Other Motor Vehicle Merchant Wholesalers.	Commercial importers of vehicles and vehicle components.
335312, 811198	Motor and Generator Manufacturing, All Other Automotive Repair and Maintenance.	Alternative fuel vehicle converters.

[1] ''Heavy-duty engine'' and ''heavy-duty vehicle,'' are defined in 40 CFR 1037.801.

[2] ''Light-duty vehicle'' and ''light-duty truck'' are defined in 40 CFR 86.1803–01.

NAICS codes [a]	NAICS titles	Examples of potentially regulated entities
326199, 332431	All Other Plastics Product Manufacturing, Metal Can Manufacturing.	Portable fuel container manufacturers.

[a] North American Industry Classification System (NAICS).

This list is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the **FOR FURTHER INFORMATION CONTACT** section.

What action is the Agency taking?

This action amends the regulations that implement our air pollutant emission standards for engines, vehicles and mobile equipment. The amendments include corrections, clarifications, and flexibilities for multiple types of vehicles, engines and equipment.

The majority of these amendments modify existing test procedures for heavy-duty highway engines and vehicles. These test procedure changes improve accuracy, and in some cases, reduce test burden. They mainly apply for measurement of greenhouse gas (GHG) pollutants (primarily CO2), though some apply for criteria pollutants (such as NO_X), as well. See Section II.A.

Additional heavy-duty highway amendments update EPA regulations to enhance implementation of existing emission standards. For example, some changes reduce the likelihood that manufacturers would need to duplicate certification efforts to comply with EPA, Canadian, and Californian standards. Some amendments make it easier for manufacturers to more fully account for the emission benefits of advanced emission control technology, which could provide them the opportunity to generate additional emission credits. These heavy-duty highway amendments are described in Section II.B.

This rule includes other amendments that are generally administrative or technical in nature and include amendments for nonroad engines and vehicles, stationary engines, and portable fuel containers. These amendments are described in Section III. Perhaps the most visible administrative amendment is the elimination of hundreds of pages of obsolete regulations, which is described in Section III.B.

EPA published a proposed rule on May 12, 2020 (85 FR 28140). This final rule follows from that proposal, with several adjustments that reflect EPA's consideration of comments received. Most of the proposed revisions from that document are addressed in this final rule. EPA is also issuing a new notice of proposed rulemaking to supplement the earlier proposed rule, published in the Proposed Rules section of this issue of the **Federal Register**, titled ''Improvements for Heavy-Duty Engine and Vehicle Test Procedures,'' docket number EPA–HQ–OAR–2019–0307; FRL–10018–51–OAR. In the supplemental proposal, EPA proposes further amendments concerning only certain specific aspects of the Greenhouse gas Emissions Model (GEM) (see Section II of the preamble to the supplemental proposal).

The proposed rule included requests for comment on a wide range of issues, including some broad areas where we were interested only in gathering information for potential future rulemaking(s). This preamble does not include a discussion of those comment areas where we are not taking any action in this final rule. The ''Improvements for Heavy-Duty Engine and Vehicle Test Procedures, and other Technical Amendments Response to Comments'' document (''Response to Comments'') in the docket for this rulemaking includes a summary of the input received from commenters and EPA's responses.[3]

In addition, we have prepared a docket memo with redline text to highlight all the changes to the regulations in the proposed rule.[4] This is especially helpful for reviewing provisions that we are removing from the Code of Federal Regulations. For obsolete provisions we are removing, see especially 40 CFR 1027.105, 1033.150, 1042.145, 1045.145, 1048.145, 1051.145, 1054.145, and 1054.625. We prepared additional docket memos to show regulatory changes after the proposed rule.[5]

[3] EPA, ''Improvements for Heavy-Duty Engine and Vehicle Test Procedures, and other Technical Amendments Response to Comments,'' December 2020, Docket EPA–HQ–OAR–2019–0307, Publication Number: EPA–420–R–20–026.

[4] ''Redline Document Showing Proposed Changes to Regulatory Text in the Heavy-Duty Greenhouse Gas Amendments'', EPA memorandum from Alan Stout to Docket EPA–HQ–OAR–2019–0307, March 2020.

[5] ''Redline Version of EPA's Final Regulatory Amendments for Heavy-Duty Greenhouse Gas Standards and other Programs'', EPA memorandum from Alan Stout to Docket EPA–HQ–OAR–2019–0307, December 9, 2020.

What are the incremental costs and benefits of this action?

This action is limited in scope and does not include amendments that have significant economic or environmental impacts. EPA has therefore not estimated the potential costs or benefits of this final rule (and we did not for the proposal).

II. Heavy-Duty Highway Amendments

A. Test Procedures and Compliance Model Changes

Since the promulgation of the Phase 2 regulations, manufacturers have been revising their internal test procedures to ensure they will be able to comply with the new requirements that begin in model year 2021. In doing so, they have identified several areas in which the test procedure regulations could be improved (in terms of overall accuracy, repeatability and clarity) without changing the effective stringency of the standards.

EPA is making numerous changes to the test procedure regulations to address manufacturers' concerns and other issues we have identified. These changes are described below. The list includes numerous editorial changes that simply correct typographical/formatting errors or revise the text to improve clarity. Although these amendments are being made primarily in the context of heavy-duty engines and vehicles, the amendments to part 1065 will also apply to nonroad engines, and the amendments to part 1066 will also apply to light-duty vehicles. Since these amendments are mostly editorial or adding flexibility, they will not adversely impact these other sectors.

1. 40 CFR Part 1036 Test Procedures

EPA proposed several updates to the testing and measurement provisions of part 1036, subpart F, and appendices of part 1036 related to how to measure emissions from heavy-duty engines and requested comment on general improvements to the engine test procedures and compliance provisions (85 FR 28141). This section presents the changes we are adopting to engine test procedures after consideration of comments received. Additional details on some of these and other engine testing and measurement amendments or clarifications requested by

commenters and our responses are available in Chapter 2 of our Response to Comments. Amendments to other subparts of part 1036 (i.e., amendments not directly related to test procedures) are discussed in Section II.B.

These updates are primarily for the purposes of adding flexibility and reducing variability in test results. Additional information that led to and supports these changes arose from a test program at Southwest Research Institute (SwRI) that was jointly funded by EPA and the Truck and Engine Manufacturers Association (EMA).[6]

We are generally finalizing revisions as proposed; however, some revisions include further changes and clarifications after consideration of public comments to better ensure clarity, accuracy and consistency with the intent of the proposed rule.

- Section 1036.501(g)—Providing a new paragraph (g) to specify duty cycles for testing model year (MY) 2016–2020 engines, including additional clarifications to the proposed amendment to refer to the steady-state duty cycle as the Supplemental Emission Test (''SET'') rather than the Ramped Modal Cycle (''RMC'') to avoid confusion as steady-state cycles are run as RMCs in many standard setting parts, and to change a reference for the Federal Test Procedure (''FTP'') duty cycle from appendix B of 40 CFR part 1036 to 40 CFR 1036.510 because 40 CFR 1036.510 gives an overview of the duty cycle and provides the reference to appendix B of 40 CFR part 1036.
- Section 1036.501(h)—Renumbering existing paragraph (g) concerning testing of MY 2021 and later engines as new paragraph (h), modifying paragraph (h)(1) to address restarting the engine during dynamometer testing for engines with stop-start technologies, and adding paragraph (h)(3) (shown as (h)(2) in the proposed rule) to cross-reference transient test cycle specifications, including additional clarifications in final paragraph (h)(2) to refer to the Supplemental Emission Test cycle to avoid confusion as steady-state cycles are run as RMCs in many standard setting parts and in paragraph (h)(2)(ii) that weighting factors for the Supplemental Emission Test are to be applied to CO2 to calculate the composite emission result.
- Section 1036.503—Migrating § 1036.510 to new § 1036.503, renumbering existing paragraph (d) as new paragraph (c), updating paragraphs (b) and (c)(1) through (3) and adding paragraphs (c)(4) and (5) and (d), including provisions to specify that the engine manufacturer must provide idle speed and torque to the vehicle manufacturer and to provide additional direction on handling data points for a low speed governor where the governor is active. We further modified proposed paragraph (b) to denote that there are four methods to generate fuel maps with the addition of the hybrid powertrain and hybrid engine testing procedures and to more clearly explain which method(s) apply to which application, paragraphs (b)(1) and (2) to add more specificity to which referenced paragraphs in § 1036.535 are applicable, paragraph (b)(3) to clarify that the option in § 1037.520(d)(2) is only allowed for hybrid powertrain testing and not powertrain testing in general, and added paragraph (b)(4) to include a method to perform hybrid engine testing. We also further updated paragraph (c)(1) to clarify how to measure torque curve for engines that have a rechargeable energy storage system (RESS) and for those that don't.
- Section 1036.505—Adding paragraph (b) to give direction on both engine and powertrain testing and modifying Table 1 to include vehicle speed and grade parameters to facilitate the hybrid powertrain testing option. We further modified the proposed language in this section by: Adding a new paragraph (b)(2)(v) to calculate curb mass for hybrid powertrain testing as this calculation is needed to determine the linear equivalent mass of rotational moment of inertias in clarified paragraph (b)(2)(vi), adding reference speed determination requirements for powertrain testing in paragraphs (c)(2)(i) and (ii) to address underspeed conditions in the hybrid powertrain SET testing, including a removal of default A, B, and C SET speeds and calculation of the A and B speeds based on C speed, modifying Table 1 further to include vehicle speed and grade parameters to facilitate the hybrid powertrain testing option so the road grade equation is now vehicle speed-dependent to address vehicle underspeed concerns corresponding to the determination and use of vehicle C speed, and replacing ramped modal cycle with supplemental emission test for the reason discussed in the first bullet of this subsection of the preamble.
- Section 1036.510—Providing a new section regarding transient testing of engines and hybrids to facilitate hybrid certification for both GHG and criteria pollutants.
- Section 1036.525(a)—Adding a clarification in the final rule that the hybrid engine testing procedure in this section applies only for model year 2014 to 2020 hybrid engines since the new hybrid powertrain and hybrid engine test procedure being adopted in this rulemaking will apply for model year 2021 and later engines.
- Section 1036.525(d)(4)(i)—Editorial revisions to equation and the addition of example calculations.
- Section 1036.527—Adding a section to provide a means to determine powertrain systems rated power and continuous rated power, to facilitate the hybrid and conventional powertrain testing options. This test procedure is applicable for powertrain testing defined in 40 CFR 1037.550 for both the engine and vehicle standards. We further modified the proposed language, including modifying how the test is carried out by reducing the number of test intervals from 9 to 1, paragraph (e) to address the determination of Psys for speed and torque measurements at different locations, with new paragraphs (g) and (h) to provide an improved method for determining continuous rated power and vehicle C speed, and addressed typographical errors.
- Section 1036.530(a), (b)(1)(i) and (ii), and (b)(2)(i) and (ii)—Updating carbon mass fraction determination to allow analysis by a single lab only to facilitate on-line analysis from pipeline supplied natural gas and adding the ASTM International method for determination of test fuel mass-specific energy content for natural gas. We have further modified the proposed language by clarifying in paragraph (a) that the infrequent regeneration adjustment factors (IRAF) are applied to CO2 emission results for all duty-cycles, not just cycle average engine fuel map results, and updating paragraph (b) to require test fuel mass-specific energy content and carbon mass fraction to be analyzed by at least three different labs and the median of all the results to be used in the calculation. We are also adding a recommendation that you screen your results to determine if additional observations are needed by performing an outlier test and provided critical values for this check. The critical values were determined as 1.27 times the method reproducibility R. The R value used for fuel mass-specific energy content is 0.234 which is the published R value for ASTM D4809 and the R value used for carbon mass fraction is 1.23, which was based on analysis of the fuel survey data for ASTM D5291 that was used in the Fuel Mapping Variability Study at SwRI.
- Section 1036.530 Table 1—Updating footnote format in table.

[6] Sharp, Christopher A., et al., ''Measurement Variability Assessment of the GHG Phase 2 Fuel Mapping Procedure'', Final Report, Southwest Research Institute, December 2019.

• Section 1036.535—Generally updating to improve the engine fuel mapping test procedures based on the jointly funded EPA–EMA test program. The overall result of these updates is to reduce the variability of the emission test results to reduce lab-to-lab variability. We further modified the proposed language by adding paragraph (h) to describe how EPA will determine the official fuel consumption rate during a confirmatory test, based on carbon balance results, updating paragraph (b)(7)(iv) to require validation of test intervals that were complete prior to a lab equipment or engine malfunction, updating the variable description for w_{Cmeas} in paragraph (b)(8) to make clear that you may not account for the contribution to α, β, γ, and δ of diesel exhaust fluid or other non-fuel fluids injected into the exhaust, and clarifying regulatory text and correcting paragraph references.

• Section 1036.540—Generally updating to improve the cycle-average engine fuel mapping test procedure as a result of the jointly funded EPA–EMA test program at SwRI. The overall result of these updates is to reduce the variability of the emission test results to reduce lab-to-lab variability. We further modified the proposed language in a few ways by adding paragraph (b)(4) to address the ability of gaseous fueled engines with single point fuel injection to pass alternate cycle statistics to validate the transient duty cycle in 40 CFR part 1037, appendix I, by adding paragraph (e)(2) to describe how EPA will determine the official fuel consumption rate during a confirmatory test, based on carbon balance results, by deleting the requirement for EPA to use an average of indirect measurement of fuel flow with dilute sampling and direct sampling for fuel mapping as EPA will now perform the carbon balance verification in 40 CFR 1065.543, and by generally adding some clarifying text.

• Section 1036.543—Adding a section to address carbon balance error verification. This is a result of the jointly funded EPA–EMA test program. The overall result of these updates is to reduce the variability of the emission test results to reduce lab-to-lab measurement variability.

• Section 1036.801—Adding a definition for hybrid engine to correspond with the addition of the hybrid powertrain test procedures to part 1036. Modifying the definition from the proposed language to provide examples of hybrid engine architecture and hybrid energy storage systems.

• Section 1036.801—Adding definitions for ''hybrid powertrain'' and ''mild hybrid'' in the final rule. These definitions are needed as a result of adding hybrid powertrain test procedures to part 1036, subpart F, including mild hybrid certification where engine testing can use a transmission model. The definitions make clear what hybrid architectures are covered by each of these terms.

• Section 1036.801—Updating definition of ''steady-state'' to clarify that fuel map and idle tests are steady-state tests.

• Section 1036.805(b)—Updating quantity and quantity descriptions, including some changes to those proposed to ensure consistency throughout the part.

• Section 1036.805(c) and (d)—Updating table introductory sentence and column headings in the table to be consistent with format in other parts.

• Section 1036.805(e)—Updating acronyms and abbreviations, including some changes to those proposed to ensure that the table contained all that were used throughout the part.

• Section 1036.805(f)—Adding gravitational constant, including an updated value for the gravitational constant based on consideration of comments received on the proposal.

• Part 1036, appendix A—Adding a new appendix A to provide a historic summary of previous emission standards which EPA originally adopted under 40 CFR part 85 or 86, that apply to compression-ignition engines produced before model year 2007 and to spark-ignition engines produced before model year 2008.

• Part 1036, appendix B(a)—Adding a new paragraph (a) of appendix B to specify transient duty cycles for the engine and powertrain testing described in § 1036.510.

• Part 1036, appendix B(b)—Adding a new paragraph (b) of appendix B to migrate over the spark-ignition FTP duty cycle from part 86, which includes no changes to the FTP duty-cycle weighting factors or the duty-cycle speed values from the current heavy duty diesel engine (HDDE) FTP duty cycle that applies to criteria pollutant regulation in paragraph (f)(1) of 40 CFR part 86, appendix I, a change to the negative torque values, and migration of the HDDE FTP drive schedule to paragraph (b) of 40 CFR part 1036, appendix B, to add vehicle speed and road grade to the duty-cycle to facilitate powertrain testing for compliance with the HD Phase 2 GHG standards. The change to negative torque values is the removal of and footnoting of the negative normalized vehicle torque values over the HDDE FTP duty-cycle. The footnote denotes that these torque points are controlled using closed throttle motoring, which would then match how negative torque values have been controlled in the HDDE FTP. This change also reflects the way that engine manufacturers are already controlling to negative torque from spark-ignition engines and harmonizes the methodology with the HDDE FTP, with no effect on stringency. The spark-ignition engine denormalization equation in 40 CFR 86.1333(a)(1)(ii) includes division by 100 which equates it to the denormalization equation in 40 CFR 1065.610(c)(1) (Equation 1065.610–3), with no effect on stringency. We have further modified the proposed language in this section by updating the road-grade coefficients to reflect additional refinement of the road-grade development process that is described in Section II.A.7 of the preamble.

• Part 1036, appendix B(c)—Adding a new paragraph (c) of 40 CFR part 1036, appendix B, to migrate over the compression-ignition FTP duty cycle from part 86, which includes no changes to the HDDE FTP weighting factors or the duty-cycle torque values from the duty cycle that currently apply to criteria pollutant regulations in paragraph (f)(2) of 40 CFR part 86, appendix I, a change to the speed values that does not influence the ultimate denormalized speed, and migration of the HDDE FTP drive schedule to add vehicle speed and road grade to the duty-cycle to facilitate powertrain testing for compliance with the Phase 2 GHG standards. The change to speed values takes the normalized vehicle speeds over the HDDE FTP duty-cycle and multiplies them by 100/112 to eliminate the need to divide by 112 in the diesel engine denormalization equation in 40 CFR 86.1333(a)(1)(i). This eliminates the need for use of a denormalization equation and allows commonization (between compression- and spark-ignition engines) of the use of the denormalization equation in 40 CFR 1065.610(c)(1) (Equation 1065.610–3), with no effect on stringency. We have further modified the proposed language in this section by updating the road grade coefficients to reflect additional refinement of the road grade development process that is described in Section II.A.7 of the preamble.

2. 40 CFR Part 1037 Test Procedures

EPA proposed several updates to the testing and measurement provisions of 1037 subpart F related to how to measure emissions from heavy-duty vehicles and determine certain GEM inputs and requested comment on general improvements to the vehicle test procedures and compliance provisions (see 85 FR 28142). This section presents

the changes we are adopting to vehicle test procedures after consideration of comments received. Chapter 2 of our Response to Comments includes additional details on some of these amendments, as well as other testing and measurement amendments or clarifications requested by commenters and our responses. Amendments for other subparts of part 1037 (i.e., amendments not directly related to test procedures) are discussed in Section II.C.15. We are generally finalizing revisions as proposed; however, some revisions include further changes and clarifications after consideration of public comments to better ensure clarity, accuracy and consistency with the intent of the proposed rule.

- Section 1037.501(i)—Adding paragraph (i) to note that the declared GEM inputs for fuel maps and aerodynamic drag area typically includes compliance margins to account for testing variability; for other measured GEM inputs, the declared values are typically the measured values without adjustment.
- Section 1037.510(a)(2)—Updating the powertrain testing procedure used to generate GEM inputs to reduce the variability of the emission test results and to improve lab-to-lab measurement variability consistent with the results from the jointly funded EPA–EMA test program at SwRI.
- Section 1037.510 Table 1—Updating footnote format in table.
- Section 1037.510(d)—Clarifying the reference to specifically refer to paragraphs ''(b) and (c)'' of § 1066.425.
- Section 1037.510(e)—Clarifying to specifically state that the use of cruise control is optional.
- Section 1037.515 Table 2—Correcting a table entry to include the proper mathematical symbols in response to a comment by the California Air Resources Board (CARB).
- Section 1037.515 Table 3—Updating footnote format in table.
- Section 1037.520—Updating a reference to reflect the updated version of the GEM model released in conjunction with this rulemaking.
- Section 1037.520(b)(3)(i)—Adding a reference to § 1037.525 to clarify how to determine a high-roof tractor's aerodynamic test results in response to a comment request from EMA.
- Section 1037.520 Table 4—Correcting a typographical error in a tractor aerodynamic test result C_dA value for Bin III low-roof cabs.
- Section 1037.520 Table 5—Correcting a typographical error in a tractor input C_dA value for Bin II High-Roof Sleeper Cabs.
- Section 1037.520(c)—Adding a clarification to § 1037.520(c)(6) and updating the GEM user guide to clarify that a time- and load-weighted average be applied to calculate the rolling resistance of tires installed on liftable axles, given that tires on liftable axles are only in contact with the ground when the axle is in a deployed state in response to a comment from EMA.
- Section 1037.520 Table 6—Updating footnote format in table.
- Section 1037.520 Table 7—Clarifying that the nonwheel-related weight reductions from alternative materials applied to tractors for non-suspension crossmembers is for a set of three.
- Section 1037.520 Table 8—Adding two footnotes to address how weight reduction values apply and what values to use for medium heavy-duty vehicles (Medium HDV) with 6x4 or 6x2 axle configurations. Also see Section II.C.3.
- Section 1037.520(f)—Updating a cross-reference.
- Section 1037.520(g)—Adding and clarifying which vehicle characteristics need to be reported, including providing a better description in paragraph (g)(2)(iv) of the 6x4D drive axle configuration as well as qualifying conditions for use of this configuration. After considering comments received by Allison and Ford, we are further modifying this paragraph by noting in paragraph (g)(1), and similarly in § 1037.231(b)(7), that available forward gear means the vehicle has the hardware and software to allow operation in those gears and providing in paragraph (g)(2)(i) that the 4x2 drive axle configuration is available to vehicles with two drive axles where one of them is disconnectable and designed to be connected only when used in off road or slippery road conditions and based on a qualifying condition.
- Section 1037.520(h)—Adding provisions to determine appropriate vehicle idle speed based on vehicle service class and applicable engine standard, including in the final rule a clarification that the 750 rpm value applies to Light HDV and Medium HDV *vocational* vehicles and providing an idle speed value of 700 rpm for Medium HDV *tractors,* corresponding to the idle speed used to set the standards for those vehicles, in response to a comment from EMA. These final provisions incorporated in a new table format, with an updated footnote noting the appropriate adjustable idle speed to choose if an engine cannot operate at the idle speed specified in the table.
- Section 1037.520(i)—Adding that a manufacturer can characterize a torque converter, in addition to an axle and transmission, which will improve the accuracy of GEM by replacing default GEM values with more representative values.
- Section 1037.520(j)(2)—Removing a superfluous reference to tractors in paragraph (j)(2)(i); clarifying paragraph (j)(2)(iii) in response to a comment from EMA to indicate how to demonstrate the performance of high-efficiency air conditioning compressors.
- Section 1037.520(j)(4) Table 9—Including additional combinations of idle reduction technologies and their corresponding GEM input values.
- Section 1037.520(j)(5)—Correcting typographical error that transposed school and coach bus GEM inputs.
- Section 1037.525—See Section II.A.6 for a description of comments and final revisions to this section.
- Section 1037.528—Replacing the phrase ''primary procedures'' with ''reference method'' for tractors and ''alternate procedures'' with ''an alternate method'' for trailers to maintain consistency with terminology used throughout subpart F.
- Section 1037.528(c)—Clarifying that the conditions listed in paragraph (c) apply to each run separately.
- Section 1037.528(e)—Removing requirement that the anemometer be ''electro-mechanical'' to rely instead on the specifications outlined in the existing reference to SAE J1263.
- Section 1037.528(g)(3)—Clarifying that the measured air direction correction is ''from all the high-speed segments.''
- Section 1037.528(h)(3)(i)—Clarifying how to account for measurement noise near the 2 mile/hour boundary.
- Section 1037.528(h)(6)—Adding a definition of ΔF_{TRR} to the introduction of paragraph (h)(6) to clarify the required calculations; relocating the proposed direction to determine the difference in rolling resistance between 65 mph and 15 mph for each tire and to use good engineering judgment when measuring multiple results to paragraph (v) with the corresponding ΔF_{TRR} equation.
- Section 1037.528—Updating equation 11 and the corresponding example to include the appropriate variable to represent inflation pressure variable with a lowercase ''p''.
- Section 1037.528—Updating equation 13 to include appropriate units for the ambient temperature variable.
- Section 1037.528—Updating equation 14 to replace a ''+'' with a ''−'' to correct a typographical error.
- Section 1037.528(h)(12)—Updating a variable name to provide consistency with updates made to § 1037.525.

• Section 1037.532—See Section II.A.6 for a description of comments and final revisions to this section.

• Section 1037.534—Updating equation 6 and the corresponding example to include the appropriate variable to represent increments by italicizing the ''i''.

• Section 1037.540—Updating equations 1, 2, and 3 to include the appropriate variable to represent increments by italicizing the ''i''.

• Section 1037.540 Table 1—Updating footnote format in table; updating a parameter name.

• Section 1037.540(e) and (f)—Removing incorrect cross-reference to § 1036.540(d)(5); adding reference to definition of standard payload.

• Section 1037.550—Updating the powertrain testing procedure to reduce the variability of the emission test results and improve lab-to-lab variability consistent with the results from the jointly funded EPA–EMA test program at SwRI. We further modified this section to include an introduction paragraph and reorganized paragraphs with new paragraph headings to improve navigation. Additional modifications to this section in the final rule include clarifying in paragraph (a)(3) options available to create the models for powertrain testing, adding clarifications in several paragraphs to address where the torque and speed are measured based on powertrain setup, adding a new paragraph (f)(2) to address testing of hybrid engines using the transmission model in GEM, modifying paragraph (b) to give additional clarification on how to set the engine idle speed, adding a new paragraph (f)(2) for testing with torque measurement at the engine's crankshaft and how to calculate the transmission output rotational speed, updating paragraph (j)(2) to describe how to transition between duty cycles if the preceding cycle ends at 0 mi/hr, adding a new paragraph (j)(5) to describe how to warm up the powertrain, adding a new paragraph (o)(2) to describe how EPA will determine the official fuel consumption rate during a confirmatory test, based on carbon balance results, and updating paragraphs (o)(3) through (5) to better define when a vehicle is not moving, moving the text from paragraph (p) into paragraph (o)(1), moving the text of paragraph (q) to the general provisions as a new paragraph (a)(5). The final rule includes additional revisions regulatory text to provide greater clarity and more carefully describe the procedures.

• Section 1037.551(b)—Updating a reference.

• Section 1037.555—Updating equations 1 and 3 to include the appropriate variable to represent increments by italicizing the ''i''; updating a parameter name in Table 1 for consistency in this part.

• Section 1037.560—Clarifying that it is optional to drain gear oil after the break in period is complete, providing the option of an alternative temperature range to provide international harmonization of testing, editing the P_{loss} (i.e., power loss) variable description to improve the readability, and adding paragraph (h) to describe how to derive axle power loss maps for untested configurations in a family. We further modified this section in the final rule by clarifying in paragraph (a) that for tandem axles that can be disconnected, testing both single-drive and tandem axle configurations includes 4x4 axles where one of the axles is disconnectable; adding a new paragraph (h)(4) and modifying (h)(5) to address comments regarding results when multiple gear ratios are tested and one of the points is above the linear regression line, which could cause the regression values to understate power loss, to clarify that you must add the difference between the datapoint and the regression line to the intercept values of the regression line to mitigate this effect; and updating the use of the term ''axle'' to ''axle assembly'' throughout the section to provide consistency.

• Section 1037.565—Providing an option to map additional test points to provide international harmonization of testing, including edits to improve the readability of the P_{loss} variable description, and adding paragraph (d)(4) and clarifying paragraphs (e)(6) and (7) regarding the gears the transmission is tested in. After considering comments from Allison, EMA, and Eaton Cummins Automated Transmission Technologies, we further modified this section by: Updating the torque transducer accuracy requirements in paragraph (c) to link it to the highest transmission input torque or respective output torque; adding additional detail in paragraph (d)(1) on the maximum transmission input shaft speed to test, specifically the maximum rated input shaft speed of the transmission or the maximum test speed of the highest speed engine paired with the transmission. and the minimum idle speed to test, specifically 600 r/min or the minimum idle speed of the engines paired with the transmission; modifying paragraph (d)(2) in response to comments regarding transmission torque setpoints to optionally allow, in higher gear ratios where output torque may exceed dynamometer torque limits, the use of good engineering judgment to measure loaded test points at input torque values lower than specified (in this case GEM may need to extrapolate values outside of the measured map, however extrapolation time may not exceed 10% for any given cycle and you must describe in the application for certification how you adjusted the torque setpoints); modifying paragraph (e)(9) to allow the use of the maximum loss value achieved from all the repeats of the test points to calculate transmission efficiency if you cannot meet the repeatability requirements; adding a new paragraph (e)(11) clarifying what needs to be calculated for each point in the test matrix; modifying paragraph (g) and moving part of existing paragraph (g) to a new paragraph (h) to avoid a potentially never-ending cycle of repeat testing if repeatability requirements are not achieved. If the repeatability requirement is not met after conducting three or more tests, the maximum loss value may be used to calculate transmission efficiency, or you can continue to test until you pass the repeatability requirement.

• Section 1037.570—Adding new section to characterize torque converters to allow a manufacturer to determine their own torque converter capacity factor instead of using the default value provided in GEM. The option to use the default value remains. The final rule includes updated regulatory text to provide greater clarity and more carefully describe the procedures. Final revisions do not change the proposed procedure; instead, they include updates to revise the section heading, reorganize paragraphs, ensure consistent terminology, and clarify measurement points.

3. 40 CFR Part 1065 Test Procedures

EPA proposed several updates to the testing and measurement provisions of 40 CFR part 1065 related to how to measure emissions from heavy-duty highway and nonroad engines and requested comment on general improvements to the engine test procedures and compliance provisions (see 85 FR 28142). This section presents the changes we are adopting primarily to reduce variability associated with engine test procedures after consideration of comments received. Chapter 2 of our Response to Comments includes additional details on some of these amendments, as well as other testing and measurement amendments or clarifications requested by commenters and our responses.

The regulations in part 1065 rely heavily on acronyms and abbreviations (see 40 CFR 1065.1005 for a complete list). Acronyms used here are summarized in Table II–1:

TABLE II–1—SUMMARY OF ACRONYMS RELATED TO 40 CFR PART 1065 THAT ARE REFERENCED IN THESE AMENDMENTS

ASTM	American Society for Testing and Materials
CVS	Constant-Volume Sampler
DEF	Diesel Exhaust Fluid
ECM	Electronic Control Module
NIST	National Institute for Standards and Technology
NMC FID	Nonmethane Cutter with a Flame Ionization Detector
NMHC	Nonmethane Hydrocarbon
NMNEHC	Nonmethane Nonethane Hydrocarbon
RMC	Ramped Modal Cycle
THC FID	Flame Ionization Detector for Total Hydrocarbons

We are generally finalizing revisions as proposed; however, some revisions include further changes and clarifications after consideration of public comments to better ensure clarity, accuracy and consistency with the intent of the proposed rule.

- Section 1065.1(g)—Updating the test procedure Uniform Resource Locator (URL).
- Section 1065.2(c)—Correcting a typographical error by replacing ''engines'' with ''engine''.
- Section 1065.130(e)—Revising to denote that a carbon balance procedure should be performed to verify exhaust system integrity in place of a chemical balance procedure.
- Section 1065.140(c)(6)(i)—Correcting a typographical error by replacing ''dew point'' with ''dewpoint''.
- Section 1065.140(e)(2)—Clarifying how to determine the minimum dilution ratio for discrete mode testing.
- Section 1065.145(e)(3)(i)—Removing the requirement to heat a sample pump if it is located upstream of a NO_X converter or chiller and replacing it with a requirement to design the sample system to prevent aqueous condensation to better address concerns with the loss of NO_2 in the sampling system where methods other than heating the pump can be used to prevent condensation.
- Section 1065.170—Updating to allow you to stop sampling during hybrid tests when the engine is off and allow exclusion of the sampling off portions of the test from the proportional sampling verification, and adding a provision for hybrid testing to allow supplemental dilution air to be added to the bag in the event that sampled volumes are too low for emission analysis.
- Section 1065.205 introductory and Table 1—Revising and adding recommended performance specifications for fuel and DEF mass scales and flow meters to reduce fuel flow measurement error.
- Section 1065.220(a) introductory and (a)(3)—Updating the application of fuel flow meters to more correctly reflect how and what they are used for in part 1065.
- Section 1065.225(a) introductory and (a)(3)—Updating the application of intake flow meters to more correctly reflect how and what they are used for in part 1065.
- Section 1065.247—Revising to add acronym for DEF throughout in place of ''diesel exhaust fluid'' and in paragraph (c)(2) account for any fluid that bypasses or returns from the dosing unit to the fluid storage tank.
- Section 1065.260(e)—Adding the word ''some'' as a qualifier for gaseous fueled engines with respect to using the additive method for NMHC determination.
- Section 1065.266(a) and (b)—Adding flexible fuel engines under the allowance to use Fourier transform infrared (FTIR) and updating the URL for EPA method 320.
- Section 1065.275—Deleting the URL and replacing with a reference to § 1065.266(b).
- Section 1065.280(a)—Updating to reflect that there is no method in § 1065.650 for determining oxygen balance and that you may develop a method using good engineering judgment.
- Section 1065.303 Table 1—Updating the formatting and entries in the summary table to reflect revised requirements, including adding fuel mass scale and DEF mass scale to the linearity verifications in § 1065.307, updating the verification in § 1065.341 to replace ''batch sampler'' with ''PFD'' as partial-flow dilution (PFD) is the preferred language, updating one footnote to include the PFD flow verification (propane check) as not being required for measurement systems that are verified by a carbon balance error verification as described in § 1065.341(h) and adding two footnotes excluding linearity verification for DEF flow if the ECM is used and for intake air, dilution air, diluted exhaust, batch sampler, and raw exhaust flow rates flow if propane checks or carbon balance is performed. These are not new exemptions; they are simply relocated to the footnotes.
- Section 1065.307(c)(13)—Adding a clarification that the calculation used for arithmetic mean determination in § 1065.602 uses a floating intercept.
- Section 1065.307(d)(4)—Revising to include DEF mass flow rate and to correct or account for buoyancy effects and flow disturbances to improve the flow measurement.
- Section 1065.307(d)(6)(i)—Revising to state that the span gas can only contain one single constituent in balance air (or N_2 if using a gas analyzer) as the reference signal for linearity determination.
- Section 1065.307(d)(7)—Revising to state that the span gas can only contain one single constituent in balance air (or N_2 if using a gas analyzer) as the reference signal for linearity determination.
- Section 1065.307(d)(9)—Expanding the paragraph to include fuel and DEF mass scales and requirements for performing the linearity verification on these scales.
- Section 1065.307(e)(3)(i) and (ii)—Editing to clarify the intent of the requirements.
- Section 1065.307(e)(3)(iii) through (xi)—Defining maximum flowrate for fuel and DEF mass scales and flow meters as well as maximum molar flowrate for intake air and exhaust flow meters and defining maximum for electrical power, current, and voltage measurement.
- Section 1065.307(e)(5)—Providing additional information surrounding requirements for using a propane check or carbon balance verification in place of a flow meter linearity verification.
- Section 1065.307(e)(7)(i)(F) and (G)—Adding transmission oil and axle gear oil to temperature measurements that require linearity verification.
- Section 1065.307(f)—Adding new paragraph (f) to denote that table 1 follows.
- Section 1065.307 Table 1—Adding DEF flow rate, fuel mass scale, and DEF mass scale to measurement systems and updating the footnote format.
- Section 1065.307(g)—Adding a new paragraph (g) to denote that table 2 follows.
- Section 1065.307 Table 2—Adding a new Table 2 to provided additional guidance on when optional verifications to the flow meter linearity verifications can be used.
- Section 1065.309(d)(2)—Updating to allow the use of water vapor injection for humidification of gases. After considering comments from EMA and Auto Innovators, we further modified this section to make language consistent where water vapor injection was added as an alternative.
- Section 1065.320(b)—Deleting existing paragraph (b) and marking it

''reserved'' as this is now adequately covered in § 1065.307.

• Section 1065.341—Revising section heading, adding introductory text, revising paragraph (a) to clarify which subparagraphs apply to CVS and which apply to PFD, relocating some of existing paragraph (a) to paragraph (f) and reordering existing paragraphs (b) through (f) as paragraphs (a) through (e).

• Section 1065.341(g)—Revising to replace ''batch sampler'' with ''PFD'' throughout and editing to provide further clarification on the procedure.

• Section 1065.341(h)—Adding a new paragraph to reference Table 2 of § 1065.307 regarding when alternate verifications can be used.

• Section 1065.342(d)(2)—Updating to allow the use of water vapor injection for humidification of gases. After considering comments by EMA and Auto Innovators, we further modified this section to make language consistent where water vapor injection was added as an alternative.

• Section 1065.350(d)(2)—Updating to allow the use of water vapor injection for humidification of gases. After considering comments by EMA and Auto Innovators, we further modified this section to make language consistent where water vapor injection was added as an alternative.

• Section 1065.355(d)(2)—Updating to allow the use of water vapor injection for humidification of gases. After considering comments by EMA and Auto Innovators, we further modified this section to make language consistent where water vapor injection was added as an alternative.

• Section 1065.360(a)(4)—Adding a new option to determine methane and ethane THC FID response factors as a function of exhaust molar water content when measuring emissions from a gaseous fueled engine. This is to account for the effect water has on non-methane cutters. We received a comment regarding whether the new regulatory text for the allowance is optional. The intent is that if you decide to use the option to determine the methane and ethane THC FID response factors as a function of exhaust molar water content, you must generate and verify the humidity as described in § 1065.365(d)(12). Paragraph (a)(4) has been modified to make this clear.

• Section 1065.360(d)(12)—Adding a process to determine methane and ethane THC FID response factors as a function of exhaust molar water content when measuring emissions from a gaseous fueled engine. This is to account for the effect water has on non-methane cutters.

• Section 1065.365(a)—Removing chemical symbol for methane in parenthetical.

• Section 1065.365(d)—Adding a requirement to determine NMC FID methane penetration fraction and ethane response factor as a function of exhaust molar water content when measuring emissions from a gaseous fueled engine. This is to account for the effect water has on non-methane cutters.

• Section 1065.365(d)(9)—Adding C_2H_6 before ''response factor'' and ''penetration fraction'' to clarify, as intended, that these are the ethane response factor and ethane penetration fraction.

• Section 1065.365(d)(10), (11), and (12)—Adding a process to determine NMC FID methane penetration fraction and ethane response factors as a function of exhaust molar water content when measuring emissions from a gaseous fueled engine. This is to account for the effect water has on non-methane cutters.

• Section 1065.365(f)(9) and (14)—Adding C_2H_6 before ''response factor'' and ''penetration fraction'' to clarify, as intended, that these are the ethane response factor and ethane penetration fraction. Adding CH_4 before ''penetration fraction'' to clarify, as intended, that this is the methane penetration fraction.

• Section 1065.370(e)(5)—Updating to allow the use of water vapor injection for humidification of gases. After considering comments by EMA and Auto Innovators, we further modified this section to make language consistent where water vapor injection was added as an alternative.

• Section 1065.375(d)(2)—Updating to allow the use of water vapor injection for humidification of gases. After considering comments by EMA and Auto Innovators, we further modified this section to make language consistent where water vapor injection was added as an alternative.

• Section 1065.410(c)—Replacing ''bad engine'' with ''malfunctioning'' in relation to engine components after considering a comment by Auto Innovators.

• Section 1065.410(d)—Updating to state that you may repair a test engine if the parts are unrelated to emissions without prior approval. If the part may affect emissions, prior approval is required.

• Section 1065.510(a), (b)(5)(i), (c)(5), and (f)(4)(i)—Moving provision for engine stabilization during mapping from § 1065.510(a) to § 1065.510(b)(5)(i), which lays out the mapping procedure, adding allowance in § 1065.510(f)(4)(i) to specify curb idle transmission torque (CITT) as a function of idle speed in cases where an engine has an adjustable warm idle or enhanced idle. We further modified this section in the final rule by adding a provision in § 1065.510(c)(5) for hybrid powertrain testing to map negative torque required to motor the engine with the RESS fully charged.

• Section 1065.512(b)(1) and (2)—Updating procedures on how to operate the engine and validate the duty-cycle when an engine utilizes enhanced-idle speed. This also addresses denormalization of the reference torque when enhanced-idle speed is active.

• Section 1065.514(e)—Clarifying that a floating intercept as described in § 1065.602 is used to calculate the regression statistics to harmonize with changes made to § 1065.602 and further modifying paragraph (e)(3) in the final rule to change ''standard estimates of errors'' to ''standard error of the estimate'' for consistency with other parts.

• Section 1065.514 Table 1—Updating a parameter name in the final rule for consistency with other parts.

• Section 1065.530(a)(2)(iii)—Adding instructions on how to determine that the engine temperature has stabilized for air cooled engines.

• Section 1065.530(g)(5)—Adding a new paragraph on carbon balance error verification if it is performed as part of the test sequence.

• Section 1065.543—Adding a new section on carbon balance error verification procedure to further reduce measurement variability for the fuel mapping test procedure in part 1036. We have further modified this section in the final rule to make it optional to account for the flow of other non-fuel carbon-carrying fluids into the system as the overall contribution from any such fluids to the total carbon in the system is negligible.

• Section 1065.545—Revising to clarify that a forcing the intercept through zero as described in § 1065.602 is used to calculate the standard error of the estimate (SEE) to harmonize with changes to § 1065.602.

• Section 1065.602(b), (c), (d), (e), (f), (g), (h), (j), (k)—Updating to include the appropriate variable to represent increments by italicizing the ''i''.

• Section 1065.602 Table 1—Updating footnote format in table.

• Section 1065.602 Table 2—Correcting a typographical error where the N_{ref}-1 value should be ''22'' but was mistakenly listed as ''20''.

• Section 1065.602(h)—Defining the existing Equation 1065.602–9 as a least squares regression slope calculation where the intercept floats, *i.e.*, is not forced through zero, designating this

paragraph as (h)(1) and adding a new paragraph (h)(2) for Equation 1065–602–10, a least squares regression slope calculation where the intercept is forced through zero.

- Section 1065.602(i)—Editing to state that the intercept calculation Equation 1065.602–11 is for a floating intercept.
- Section 1065.602(j)—Defining the existing Equation 1065.602–12 (renumbered from 1065.602–11) as a *SEE* calculation where the intercept floats, i.e., is not forced through zero, designating this paragraph as (j)(1), adding a new paragraph (j)(2) for Equation 1065.602–13, a *SEE* calculation where the intercept is forced through zero, and further modifying paragraph (j) in the final rule to change ''Standard estimate of error'' to ''Standard error of the estimate'' for consistency with other parts.
- Section 1065.610(a)(1)(iv)—Updating to include the appropriate variable to represent increments by italicizing the ''i''.
- Section 1065.610(a)(2)—Clarifying that the alternate maximum test speed determined is for all duty-cycles.
- Section 1065.610(d)(3)—Adding provision to use good engineering judgment to develop an alternate procedure for adjusting CITT as a function of speed.
- Section 1065.640(a), (b)(3), and (d)(1)—Deleting a comma in paragraph (a), specifying that the least square regression calculation in paragraph (b)(3) is with a floating intercept, providing a conversion to kg/mol for M_{mix} in the example problem for paragraph (d)(1), and correcting an error in the example problem in applying Equation 1065.640–10 where M_{mix} was used with the wrong units.
- Section 1065.640(d)(3)—Providing additional guidance on how to calculate *SEE* for C_d to correspond with the changes made to § 1065.602.
- Section 1065.642(b)—Correcting a cross-reference.
- Section 1065.642(c)(1)—Defining C_f.
- Section 1065.643—Adding a new section on carbon balance error verification calculations to support the new § 1065.543.
- Section 1065.650(b)(3)—Adding DEF to clarify what is needed for chemical balance calculations.
- Section 1065.650(c)(1)—Relocating transformation time requirement from § 1065.650(c)(2)(i) to § 1065.650(c)(1).
- Section 1065.650(c)(3)—Updating the equation to include the appropriate variable to represent increments by italicizing the ''i''.
- Section 1065.650(d)—Correcting cross-references.
- Section 1065.650(d)(7)—Updating to include the appropriate variable to represent increments by italicizing the ''i''.
- Section 1065.650(f)(2)—Adding DEF to clarify what is needed for chemical balance calculations.
- Section 1065.650(g)—Updating the equations to include the appropriate variable to represent increments by italicizing the ''i'' and correcting variable name from $e_{NOxcomposite}$ to $e_{NOxcomp}$.
- Section 1065.655—Adding ''DEF'' to the section heading.
- Section 1065.655(a) and (c) introductory text—After considering comments by EMA, we modified this section to clarify that the inclusion of diesel exhaust fluid in the chemical balance is optional.
- Section 1065.655(c)(3)—Updating the $x_{Ccombdry}$ variable description to include injected fluid.
- Section 1065.655(d)—After considering comments by EMA, we modified this section to clarify that the inclusion of diesel exhaust fluid in the wC determination is optional.
- Section 1065.655(e)(1)(i)—Clarifying the determination of carbon and hydrogen mass fraction of fuel, specifically to S and N content.
- Section 1065.655(e)(3)—Clarifying that nonconstant fuel mixtures also applies to flexible fueled engines.
- Section 1065.655(e)(4)—Updating to include the appropriate variable to represent increments by italicizing the ''i''.
- Section 1065.655(e)(5)—Adding new paragraph (e)(5) to denote that table 1 follows.
- Section 1065.655 Table 1—Updating cross-reference.
- Section 1065.655(f)(3)—Restricting the use of Equation 1065.655–25 if the standard setting part requires carbon balance verification and including the appropriate variable to represent increments by italicizing the ''j''; adding in the final rule a description of the variable for carbon mass fraction, as it was missing.
- Section 1065.655(g)(1)—Updating cross-reference.
- Section 1065.659(c)(2) and (3)—Adding DEF to clarify what is needed for chemical balance chemical balance calculations.
- Section 1065.660(a)(5) and (6)—Adding new paragraphs to those proposed codifying existing practice to calculate THC based on measurements made with FTIR for gaseous fueled engines. EPA intended in previous updates to part 1065 to allow the determination of NMNEHC and NMHC using FTIR from gaseous fueled engines, but the HD Phase 2 rulemaking inadvertently omitted instructional text in paragraph (a) on calculating THC using the two FTIR additive methods.
- Section 1065.660(b)(2) and (3)—Correcting typographical errors, including adding missing commas.
- Section 1065.660(b)(4)—Correcting a typographical error for the chemical formula of acetaldehyde in a variable.
- Section 1065.660(c)(2)—Including NMC FID as allowable option in NMNEHC calculation and further modifying § 1065.660(c) in the final rule adding additional information on performing the NMNEHC calculation and to correct typos in variables.
- Section 1065.660(d)—Adding missing parentheses.
- Section 1065.665(a)—Deleting the variable and description for C# as it is not used in any calculation in this section.
- Section 1065.667(d)—Adding DEF to clarify what is needed for chemical balance description.
- Section 1065.675(d)—Editing variable descriptions to refer to a humidity generator rather than a bubbler (accommodates both a bubbler and humidity generator).
- Section 1065.695(c)(8)(v)—Adding carbon balance verification.
- Section 1065.701(b)—Updating name of California gasoline type.
- Section 1065.701 Table 1—Updating footnote format in table.
- Section 1065.703 Table 1—Updating to correct units for kinematic viscosity and updating footnote format in table.
- Section 1065.705 Table 1—Updating to correct units for kinematic viscosity and updating footnote format in table.
- Section 1065.710 Table 1—Editing format for consistency and updating footnote format in table.
- Section 1065.710 Table 2—Editing format for consistency, adding allowance to use ASTM D1319 or D5769 for total aromatic content determination and ASTM D1319 or D6550 for olefin determination because the dye used in ASTM D1319 is becoming scarce and an alternate method is needed, and updating a footnote format in table.
- Section 1065.715 Table 1—Updating footnote format in table.
- Section 1065.720 Table 1—Updating footnote format in table and revising Table 1 after considering a comment by EMA to specify ASTM D6667 instead of ASTM D2784 as the reference procedure for measuring sulfur in liquefied petroleum gas. We requested comment on amending the

regulation to replace ASTM D2784, which has been withdrawn by ASTM without replacement, received comment from EMA and agree that ASTM D6667 is a suitable method. EPA is similarly changing other regulatory provisions to specify ASTM D6667 as the reference procedure for fuel manufacturers measuring sulfur in butane (see 40 CFR 1090.1350).

- Section 1065.750 Table 1—Updating footnote format in table.
- Section 1065.790(b)—Adding a NIST traceability requirement for calibration weights for dynamometer, fuel mass scale, and DEF mass scale.
- Section 1065.905 Table 1—Updating footnote format in table.
- Section 1065.910(a)(2)—Adding a revision in the final rule to change the requirement to use 300 series stainless steel tubing to connect the PEMS exhaust and/or intake air flow meters into a recommendation because there are other materials that are equally suitable for in-use testing other than stainless steel tubing.
- Section 1065.915 Table 1—Updating footnote format in table.
- Section 1065.1001—Adding a definition for enhanced-idle.
- Section 1065.1001—Clarifying definition of test interval as duration of time over which the mass of emissions is determined.
- Section 1065.1005(a)—Updating footnote format in table and parameter names for consistency with other parts.
- Section 1065.1005(c), (d), and (e)—Updating to ensure column headings use terminology consistent with NIST SP–811.
- Section 1065.1005(a) and (e)—Updating tables of symbols and subscripts to reflect revisions to part 1065.
- Section 1065.1005(f)(2)—Adding molar mass of ethane and updating footnote format in table.
- Section 1065.1005(g)—Updating acronyms and abbreviations for ASTM, *e.g.,* and *i.e.*
- Section 1065.1010(b)(23) and (43)—Incorporating by reference ASTM D6667 into the regulations instead of ASTM D2784, consistent with replacing ASTM D2784 with ASTM D6667 as the reference procedure for measuring sulfur in liquefied petroleum gas in § 1065.720, as explained above in this section. EPA is similarly specifying ASTM D6667 as the reference procedure for fuel manufacturers measuring sulfur in butane.

4. 40 CFR Part 1066 Test Procedures

EPA proposed several updates to the testing and measurement provisions of 40 CFR part 1066 related to how to measure emissions from light- and heavy-duty vehicles and requested comment on general improvements to the vehicle test procedures and compliance provisions (see 85 FR 28144). This section presents the changes we are adopting to vehicle test procedures after consideration of comments received. Chapter 2 of our Response to Comments includes additional details on some of these amendments, as well as other testing and measurement amendments or clarifications requested by commenters and our responses.

We are generally finalizing revisions as proposed; however, some revisions include further changes and clarifications after consideration of public comments to better ensure clarity, accuracy and consistency with the intent of the proposed rule.

- Section 1066.1(g)—Updating the URL.
- Section 1066.135(a)(1)—Revising to widen the range for verifications of a gas divider derived analyzer calibration curve to 10 to 60% to ease lab burden with respect to the number of gas cylinders they must have on hand and revising to make the midspan check optional as the part 1066 requirement for yearly linearity verification of the gas divider has provided more certainty of the accuracy of the gas blending device.
- Section 1066.210(d)(3)—Changing the value for acceleration of Earth's gravity from a calculation under 40 CFR 1065.630 to a default value of 9.80665 m/s^2 because the track coastdown doesn't take place in the same location that the dynamometer resides. Therefore, best practice is to use a default value for gravity.
- Section 1066.255(c)—Clarifying that the torque transducer zero and span are mathematically done prior to the start of the procedure.
- Section 1066.260(c)(4)—Correcting an error in the example problem result.
- Section 1066.265(d)(1)—Correcting example equation to replace a subtraction sign that was a typographical error with a multiplication sign.
- Section 1066.270(c)(4)—Correcting units for force in mean force variable description and correcting example problem solution.
- Section 1066.270(d)(2)—Adding corrections in the final rule of typographical errors on maximum allowable error where error tolerances were indicated as ''±'', but paragraph is clear that the allowable error is a maximum value as Equation 1066.270–2 determines error as an absolute value. Therefore, the error values are positive and not a positive and negative range.
- Section 1066.275—Extending the dynamometer readiness verification interval from within 1 day before testing to an optional 7 days prior to testing if historic data from the test site supports an interval of more than 1 day. Adding corrections in the final rule of typographical errors in paragraphs (d)(1) and (2) on allowable error where error tolerances were indicated as ''±'', but paragraph is clear that the allowable error is a maximum value as Equation 1066.270–2 determines error as an absolute value. Therefore, the error values are positive and not a positive and negative range.
- Section 1066.405—Updating heading to include ''maintenance''.
- Section 1066.405(a) through (c)—Designating existing text as paragraph (a), adding new paragraphs (b) and (c) to address test vehicle inspection, maintenance and repair, consistent with § 1065.410, and, after considering a comment by Auto Innovators, replacing ''bad engine'' with ''malfunctioning'' in relation to engine components in paragraph (b).
- Section 1066.420 Table 1—Updating footnote format in table and, after considering comments from Auto Innovators and VW, clarifying that SC03 humidity tolerance is an ''average'' value consistent with 40 CFR 86.161–00(b)(1) and inadvertently not carried over in part 1066. All SC03 capable test cells have been designed to meet the humidity requirement in § 86.161–00 which is on an average basis.
- Section 1066.605—Correcting a typographical error in paragraph (c)(4) where NMHC should read NMHCE and editing Equation 1066.605–10 adding italics for format consistency.
- Section 1066.610—Editing Equation 1066.610–4 adding italics for format consistency.
- Section 1066.710(c)—Clarifying to reflect how heating, ventilating, and air conditioning (HVAC) control systems operate in vehicles and how they should be operated for the test. Further modifying paragraph (c)(1)(i)(A) in the final rule to state that for automatic temperature control systems that allow the operator to select a specific temperature, set the air temperature at 72 °F or higher, which the vehicle then maintains by providing air at that selected constant temperature. Further modifying paragraph (c)(2) in the final rule to state that for full automatic temperature control systems that allow the operator to select a specific temperature, set the air temperature at 72 °F, which the vehicle then maintains by varying temperature, direction and

speed of air flow. Clarifying terminology is consistent with EPA compliance guidance CD–2020–04.

- Section 1066.801 Figure 1—Updating to reflect that the initial vehicle soak, as outlined in the regulations, is a 6-hour minimum and not a range of 6 to 36 hours.
- Section 1066.835(a)—Clarifying that the last drain and fill operation is after the most recent FTP or highway fuel economy test (HFET) measurement (with or without evaporative emission measurements).
- Section 1066.835(f)(2)—Deleting the word ''instantaneous'' to reflect that the SC03 temperature and humidity tolerances in paragraph (f)(1) are not all instantaneous in response to comments received from Auto Innovators and Volkswagen. This was an inadvertent error in part 1066.
- Section 1066.930—Adding a period to the end of the sentence.
- Section 1066.1005(a)—Updating a parameter name to be consistent with use in other parts.
- Section 1066.1005(c) and (d)—Updating to ensure column headings use terminology consistent with NIST SP–811.
- Section 1066.1005(f)—Updating footnote format in table.

5. Greenhouse Gas Emissions Model (GEM)

EPA proposed several updates to the GEM model related to how to measure emissions from heavy-duty engines and requested comment on whether the differences in GEM would impact the effective stringency of the standards and, if so, whether either GEM or the regulations need to be revised to address the changes (see 85 FR 28145, May 12, 21020). This section presents the changes we are adopting to GEM after consideration of comments received. Additional details on these and other amendments or clarifications requested by commenters and our responses are available in Chapter 2 of our Response to Comments.

GEM is a computer application that estimates the greenhouse gas (GHG) emissions and fuel efficiency performance of specific aspects of heavy-duty (HD) vehicles. GEM is used to determine compliance with the Phase 2 standards from several vehicle-specific inputs, such as engine fuel maps, aerodynamic drag coefficients, and vehicle weight rating. GEM simulates engine operation over two cruise cycles, one transient cycle, and for vocational vehicles, idle operation. These results are weighted by GEM to provide a composite GEM score that is compared to the standard.

EPA proposed to update GEM, in a revised version 3.5 to replace the current version 3.0, and requested comment on whether the differences in GEM would impact the effective stringency of the standards and, if so, whether either GEM or the regulations need to be revised to address the changes. We received one comment on the proposal on this topic from the California Air Resources Board (CARB), stating the importance of GEM results being consistent with the current program standards to ensure stringency is maintained and recommending that EPA revise GEM to maintain this consistency.

After considering the comment and further evaluating the performance of GEM 3.5 with the input files used to set the Phase 2 vehicle standards, EPA is finalizing GEM version 3.5.1 applicable for MY 2021 vehicles that includes the changes proposed in version 3.5 as well as changes that correct three errors in the GEM 3.5 code. The following changes were proposed in version 3.5 and are finalized in version 3.5.1 to allow additional compliance flexibilities and improve the vehicle simulation:

- Corrected how idle emission rates are used in the model.
- Increased the allowable weight reduction range to 25,000 pounds.
- For powertrain input, added an input for powertrain rated power to scale default engine power.
- Recalibrated driver over speed allowance on cruise cycles from 3 mph to 2.5 mph.
- Revised engine cycle generation outputs with corrected engine cycle generation torque output from model based on simulated inertia and rate limited speed target.
- Added scaling of powertrain simulation default engine and transmission maps based on new rated power input.
- Changed interpolation of fuel map used in post processing to be consistent with one used in simulation.
- Corrected accessory load value on powertrain test when coasting or decelerating.
- Added torque converter k-factor input option.
- Cycle average cycles: added flag for points that are to be considered ''idle.''
- Improved handling of large input tables.
- Allow hybrid engine input.

The three additional changes in GEM 3.5.1 correct the following errors in GEM 3.5 code: (1) A typographical error, where GEM used a weighting factor of 0.25 instead of 0.23 for the Heavy Heavy-Duty (HHD) Multipurpose vehicle subcategory; (2) an idle map error when the cycle average fuel mapping procedure is used for all three drive cycles; and (3) a functional error that unnecessarily required transmission power loss data when using the option to enter a unique (instead of default) k-factor for the torque converter. The GEM version we are releasing with and incorporating by reference in this final rule is identified as ''3.5.1.''

EPA is also issuing a supplemental proposal published in the Proposed Rules section of this issue of the **Federal Register**, titled ''Improvements for Heavy-Duty Engine and Vehicle Test Procedures,'' docket number EPA–HQ–OAR–2019–0307; FRL–10018–51–OAR. This supplemental proposal provides notice and opportunity for comment on a proposed further updated version of GEM for MY 2022 and later, proposes to allow use of the updated model for MY 2021 for demonstrating compliance with the Phase 2 standards, including obtaining a certificate of conformity and submitting end-of-year reports, and requests comment on whether this version of GEM should be required for MY2021 end-of-year reports. This proposed revised version in the supplemental proposal includes corrections, clarifications, additional flexibilities, and adjustment factors to the Greenhouse gas Emissions Model (GEM) compliance tool for heavy-duty vehicles after consideration of comments received on the proposed rule. The supplemental proposal proposes limiting the use of GEM 3.5.1 to MY 2021 vehicles only, except where this MY 2021 data can be used for carryover requests for certificates of conformity for MY 2022 and future years for qualifying vehicles under § 1036.235(d); however, manufacturers would still need to use GEM 3.8 for end-of-year reporting for MY 2022 and future years.

EPA is finalizing GEM 3.5.1 after considering comments, further evaluating the performance of GEM 3.5.1 with the input files used to set the Phase 2 vehicle standards, considering the corrections and improvements made in GEM 3.5.1, and identifying potential additional corrections and improvements for GEM. Evaluation of GEM 3.5.1 indicated that there was some difference in output 96results for both tractor and vocational vehicles when compared to GEM 3.0. To assess the magnitude of any differences between using GEM 3.0 and GEM 3.5.1, we repeated the process used in 2016 to calculate the numerical level of the vehicle standards, replacing GEM 3.0 with GEM 3.5.1. On average, the differences in the resulting standards

from using GEM 3.5.1 instead of GEM 3.0 are decreases of 0.09 percent and 0.54 percent for the tractor and vocational vehicle standards, respectively. The tractor standards resulting from GEM 3.5.1 ranged from 0.29 percent below to 0.15 percent above the GEM 3.0 standards. The vocational vehicle standards resulting from GEM 3.5.1 ranged from 0.32 percent above to 1.45 percent below the GEM 3.0 standards. A summary of the process taken to calculate the vehicle standards using GEM and a comparison of the results generated by GEM 3.0 and GEM 3.5.1 are provided in a docket memo.[7]

We are finalizing GEM 3.5.1 without adopting adjustment factors in the related test procedures.[8] In the same memo noted previously, we compare the GEM 3.8 results to those from GEM 3.0. In the supplemental proposal, EPA proposes GEM 3.8 and corresponding adjustment factors to adjust the results to more closely match the results produced by the original GEM 3.0 version and we intend to issue a final rule before the start of model year 2022. If finalized as proposed, we would limit the potential impact on effective stringency due to a change in GEM versions to model year 2021 only, which should have a minimal impact on the effective stringency and environmental benefits of the overall Phase 2 program.

6. Aerodynamic Test Procedures

EPA proposed several updates to the testing and modeling provisions of 1037 subpart F related to aerodynamic testing and requested comment on general improvements to the aerodynamic test procedures and compliance provisions (see 85 FR 28147). This section presents the changes we are adopting to aerodynamic test procedures after consideration of comments received. Additional details on these and other aerodynamic amendments or clarifications requested by commenters and our responses are available in Chapter 2 of our Response to Comments.

a. Aerodynamic Measurements for Tractors

The aerodynamic drag of a vehicle is determined by the vehicle's coefficient of drag (C_d), frontal area, air density and speed. The regulations in § 1037.525 allow manufacturers to use a range of techniques, including wind tunnel testing, computational fluid dynamics, and constant speed tests. This broad approach is appropriate given that no single test procedure is superior in all aspects to other approaches. However, we also recognized the need for consistency and a level playing field in evaluating aerodynamic performance. To address the consistency and level playing field concerns, EPA adopted an approach that identified coastdown testing as the reference aerodynamic test method, and specified a procedure to align results from other aerodynamic test procedures with the reference method by applying a correction factor ($F_{alt\text{-}aero}$) to results from alternative methods (§ 1037.525(b)). We are adding a sentence to the introductory text of § 1037.525 to clarify that coastdown testing is the ''reference method for aerodynamic measurements''.

In the proposed rule, we proposed to separate § 1037.525(b)(1) into a paragraph (b)(1) defining $F_{alt\text{-}aero}$ and a new paragraph (b)(2) allowing manufacturers to assume $F_{alt\text{-}aero}$ is constant for a given alternate method. We are finalizing two separate paragraphs and the subsequent renumbering of the remaining paragraphs as proposed except as explained here. Our proposed update to the definition of $F_{alt\text{-}aero}$ in Equation 1037.525–1 and the related text in § 1037.525(b)(1) inadvertently removed the definition of effective yaw, ψ_{eff}, which is used throughout § 1037.525 and incorrectly replaced the C_dA variables measured at ψ_{eff} with wind-averaged C_dA values, as noted in comment by EMA. We agree that Equation 1037.525–1 should continue to be based on the definition from HD GHG Phase 2 final rule such that $F_{alt\text{-}aero}$ is a function of the coefficient of drag areas at the effective yaw angle. We are finalizing paragraph (b)(1) with the same Equation 1037.525–1 as the current requirement but with the updated variable names throughout § 1037.525 (and where referenced in § 1037.525(h)(12)(v)) to more clearly relate the drag areas to the defined effective yaw variable, as recommended by EMA.[9] We are also adding a ''Where:'' statement to Equation 1037.525–1 to define the variables in that equation and are restoring the existing language we proposed to remove that defines the effective yaw angle to apply for Phase 1 and Phase 2 compliance.

We proposed and received no adverse comments on two additional changes in § 1037.525(b). In paragraph (b)(3), we proposed and are finalizing removal of the sentence ''Where you have test results from multiple vehicles expected to have the same $F_{alt\text{-}aero}$, you may either average the $F_{alt\text{-}aero}$ values or select any greater value.'' By removing this statement, we are allowing manufacturers the flexibility to propose a method for calculating their $F_{alt\text{-}aero}$ from multiple test vehicles that suits their unique compliance margin targets. In paragraph (b)(5), we proposed to add a statement that manufacturers may test earlier model years than the 2021, 2024, and 2027 model years specified and are finalizing additional clarifying text and a new example. We are finalizing two additional typographical edits correcting references to our renumbered paragraphs in the paragraph (b)(5). The reference to ''paragraph (b)(2)'' was corrected to paragraph (b)(3) and the reference to ''this paragraph (b)(4)'' was corrected to paragraph (b)(5). Finally, we are adding the phrase ''drag area from your alternate method'' to describe the previously undefined term, C_dA_{alt}.

EPA proposed a change to § 1037.525(b)(7), to clarify that the use of good engineering judgment with respect to the specified tractor-trailer gap dimension ''applies for all testing, including confirmatory and SEA testing''. Both EMA and Volvo requested further clarification through use of an example. We are finalizing three clarifying changes to § 1037.525(b)(7). First, we are adding a reference to the tractor-trailer gap specifications in § 1037.501(g)(1)(ii), as requested. Second, we provide an example of good engineering judgment that could be applied to correct a difference between the specified and tested tractor-trailer gaps. Lastly, we clarify that the allowance applies ''for certification, confirmatory testing, SEA, and all other testing to demonstrate compliance with standards.''

We also proposed a provision to our regulations at § 1037.525(b)(8) to encourage manufacturers to proactively coordinate with EPA to have compliance staff present when a manufacturer conducts its coastdown testing to establish $F_{alt\text{-}aero}$ values. Section 208 of the Clean Air Act provides EPA broad oversight authority for manufacturer testing. Being present for the testing would give EPA greater confidence that the test was conducted properly, and thus, would make it less likely that EPA would need to conduct aerodynamic confirmatory testing on the

[7] Sanchez, James, Memorandum to Docket EPA–HQ–OAR–2019–0307. Process of Using GEM to Set Vehicle Standards. December 4, 2020.

[8] Greenhouse gas Emissions Model (GEM) Phase 2, Version 3.5.1, December 2020. A working version of this software is also available for download at *https://www.epa.gov/regulations-emissions-vehicles-and-engines/greenhouse-gas-emissions-model-gem-medium-and-heavy-duty.*

[9] The variables $C_dA_{effective\text{-}yaw\text{-}coastdown}$ and $C_dA_{effective\text{-}yaw\text{-}alt}$ are now $C_dA_{coastdown}(\psi_{eff})$ and $C_dA_{alt}(\psi_{eff})$, respectively.

vehicle. Consistent with the intent of the proposed revision and EPA's authority under section 208, we are finalizing in § 1037.525(b)(8) a provision that refers to the existing preliminary approval provisions of § 1037.210 with the note that EPA may witness the testing. Section 1037.210 provides an established protocol for manufacturers to coordinate with EPA for testing.

EMA's comment requested additional modifications to the yaw sweep correction provisions in § 1037.525(c), suggesting that coastdown results do not need to be corrected to wind-averaged and that all of paragraph (c)(2) was ''unnecessary'' because another regulatory provision ''serves that function''. Their request appears to be a misunderstanding of the existing regulations. Wind-averaged drag area (C_dA_{wa}) is a required input for GEM in Phase 2. Paragraph (c)(1) specifies how to calculate C_dA_{wa} when using an alternate test method and paragraph (c)(2) specifies how to calculate it for coastdown testing. EPA may use coastdown for confirmatory testing and manufacturers may choose to use coastdown testing for all aerodynamic testing. Consequently, paragraph (c)(2) is needed to properly calculate the wind-averaged input required by GEM in these situations. To address any potential confusion on the necessity of both paragraphs under the current regulatory text, we are finalizing three updates to § 1037.525(c) as follows:

- Clarifying the use of the yaw correction provisions by revising paragraph (c) introductory text to add ''as specified in § 1037.520'' and to remove the phrase ''differences from coastdown testing'' that only applies to paragraph (c)(1).
- Updating the text of paragraphs (c)(1) and (2) to more clearly communicate that they are two separate options that apply based on which testing method is chosen.
- Adopting the updated drag area variable names from § 1037.525(b).

b. Aerodynamic Measurements for Vocational Vehicles

We did not specifically propose changes to or request comment on our procedures for measuring aerodynamic performance of vocational vehicles in § 1037.527. EMA commented that the existing provisions of § 1037.527 to determine a ΔC_dA value for vocational vehicles refer to the trailer provisions in § 1037.526; however, § 1037.526 does not specify how to choose an appropriate baseline for vocational vehicles. EMA requested that manufacturers should be able to ''choose an appropriate baseline vehicle for the technology and applications''. We are not taking any final action on this issue at this time. However, we are providing a summary of the current provisions and their original intent in this preamble to assist manufacturers.

The current § 1037.527(a) states that ΔC_dA is determined for vocational vehicles as follows: ''Determine ΔC_dA values by performing A to B testing as described for trailers in § 1037.526, with any appropriate adjustments, consistent with good engineering judgment.'' The A to B testing provisions for trailers are specified in § 1037.526(a), where paragraph (a)(1) describes the baseline trailer, paragraph (a)(2) describes the general intent of the A to B test, and paragraph (a)(3) describes how to calculate the ΔC_dA from the test results.

We acknowledge that the reference to a ''standard trailer'' in § 1037.526(a)(1) may cause confusion to vocational vehicle manufacturers, since it would be a challenge to identify a single ''standard'' vehicle to represent the range of vocational applications. However, the baseline trailer description in that paragraph equates to a trailer without aerodynamic components, which is the key aspect of that baseline description the regulatory cross-reference in § 1037.527(a) applies to vocational vehicles. The trailer provision of § 1037.526(a)(2) states that the general intent of the A to B test is to ''demonstrate the reduction in aerodynamic drag associated with the improved design'', which can be directly applied to vocational vehicles. The general process of calculating ΔC_dA in § 1037.526(a)(3) could be applied to vocational vehicles as well, but its reference to test trailer and baseline trailer may cause confusion for reasons similar to those discussed for § 1037.526(a)(1).

Similar to the trailer provision, a vocational vehicle's aerodynamic performance is based on a ΔC_dA value relative to a baseline vehicle. Manufacturers wishing to perform aerodynamic testing on their vocational vehicles are encouraged to coordinate with their Designated Compliance Officer and use the existing provision in § 1037.527, including its reference to the description of how to do so for the trailer-specific provision in § 1037.526. As noted in § 1037.527(a), we expect manufacturers to make ''appropriate adjustments'' when applying the cross-referenced provision to vocational vehicle testing consistent with good engineering judgment. When followed, this should result in a manufacturer choosing an appropriate baseline vehicle, similar to the clarification requested by the commenter. For example, a manufacturer may choose an aerodynamic test method, determine a baseline C_dA value (in m^2) using a vehicle that represents a production configuration without the aerodynamic improvement, then repeat the same aerodynamic method for a test vehicle that is a nearly equivalent configuration but includes the aerodynamic improvement of interest. In this case, the manufacturer would calculate ΔC_dA by subtracting the measured drag area for the test vehicle from the drag area for the baseline vehicle. Calculating ΔC_dA in this manner would generally be consistent with the intent that the test ''accurately demonstrate the reduction in aerodynamic drag associated with the improved design'' for the vocational vehicle since any improvement to aerodynamic performance would be attributable to the aerodynamic technology on the test vehicle.

c. Computational Fluid Dynamics Procedures

We proposed one correction to our computational fluid dynamics (CFD) provisions of § 1037.532 that replaced the incorrect ''or'' in paragraph (a)(1) with ''and'' to include yaw angles of $+4.5°$ *and* $-4.5°$. EMA requested three additional modifications related to our CFD provisions. In § 1037.532(a)(3), they requested that we clarify our specified Reynolds number of 5.1 million is based on the 102-inch trailer width as the characteristic length. We agree with this suggestion and updated the language in § 1037.532(a)(3) for clarity that the Reynolds number is based on a 102-inch trailer width consistent with our specifications for a ''standard trailer'' in § 1037.501(g)(1)(i). EMA also suggested the phrase ''the General On-Road Simulation'' in § 1037.532(a)(4) be replaced with ''an open-road simulation'' to avoid confusion with SAE International's revisions of SAE J2966 to incorporate the impact of traffic. We agree that open-road simulation is representative of our initial intent and are updating the regulatory text of § 1037.532(a)(4). See Chapter 2 of our Response to Comments for additional details.

EMA's third request was that we remove the requirement to set the ''free stream turbulence intensity to 0.0 percent'' in § 1037.532(a)(5), and instead recommended we replace that requirement with a ''uniform inlet velocity profile.'' EPA is not taking any final action on revision to that paragraph at this time. Furthermore, EPA disagrees with the requested change to paragraph (a)(5). Turbulence intensity is a common parameter in CFD packages and, as described in Chapter

3.2.2.3 of the Final Regulatory Impact Analysis (Final RIA) for the HD Phase 2 Rule, we evaluated a range of turbulence intensities and intentionally specified a value of zero to ensure consistency, stating that ''Turbulence intensity must be 0.0 percent.'' [10] Manufacturers who wish to use alternative parameters and criteria related to their CFD models, which includes seeking to substitute the specified turbulence intensity with a uniform inlet velocity profile, continue to have the option to seek to do so through requesting EPA approval under § 1037.532(f).

CARB requested EPA add provisions that set a requirement for a maximum limit of computational elements to perform Computational Fluid Dynamics (CFD) simulation, define a specific transient averaging methodology, quantify the uncertainty in using CFD simulation, and assess CFD simulation credibility. We are not taking any final action on these requests, but may consider the changes suggested by the commenter in an appropriate future rulemaking with notice and comment. See our complete response in Chapter 2 of our Response to Comments.

7. Hybrid Powertrain Test Procedures

As explained above in Sections II.A.1 and II.A.2, EPA proposed several updates to the hybrid powertrain test procedures that apply to engine and vehicle standards provisions in 40 CFR 1036.503, 1036.505, 1036.510, and 1036.527, 40 CFR part 1036, appendix B, and 40 CFR 1037.550 related to how to perform hybrid powertrain testing and requested comment on general improvements to the hybrid powertrain test procedure provisions (see 85 FR 28152). This section further explains, in addition to the specific descriptions in Sections II.A.1. and II.A.2. above, the changes we are adopting to hybrid powertrain test procedures after consideration of comments received. Additional details on these and other hybrid powertrain testing and measurement amendments or clarifications requested by commenters and our responses are available in Chapter 2 of our Response to Comments.

a. Hybrid Test Procedures for Engine Standards

EPA worked with industry prior to proposal and also considered input provided during this rulemaking to develop a powertrain test procedure that includes the addition of a transmission model to GEM and options in GEM to test without the transmission present, using the model in its place to be used to certify a hybrid powertrain to the FTP and SET HD GHG Phase 2 greenhouse gas engine standards. The two primary goals of this development process were to make sure that the powertrain version of each test cycle was equivalent to the respective engine cycle in terms of positive power demand versus time and that the powertrain cycle had appropriate levels of negative power demand.

Our current regulations do not have a certification procedure for powertrain certification of heavy-duty hybrid vehicles to any engine standards. The powertrain certification test for certification to both the FTP and SET is carried out by following 40 CFR 1037.550 as described in 40 CFR 1036.505 and 1036.510 and is applicable for powertrain systems located in the P0, P1, P2, and P3 positions.

For this test procedure, EPA is finalizing addition of a vehicle speed and road grade profile to the existing FTP duty cycles for compression-ignition and spark-ignition engines in 40 CFR part 1036, appendix B, and to the SET duty cycle in 40 CFR 1036.505. EPA also is finalizing vehicle parameters to be used in place of those in 40 CFR 1037.550; namely vehicle test mass, vehicle frontal area, vehicle drag area, coefficient of rolling resistance, drive axle ratio, tire radius, vehicle curb mass, and linear equivalent mass of rotational moment of inertias. Under the final test procedure, determination of system and continuous rated power along with the maximum vehicle speed (C speed) is also required using 40 CFR 1036.527. Under the final test procedure, the combination of the generic vehicle parameters, the engine duty-cycle vehicle speed profile, and road grade profile fully defines the system load and this is designed to match up the powertrain load with the compression-ignition engine vFTP, spark ignition engine vFTP, and vSET load for an equally powered engine.

The development of this test procedure was based on the process contained in Global Technical Regulation No. 4.[11] [12] Generally speaking, the final test procedure is powertrain in the loop using a vehicle-based cycle (vehicle speed vs. time and grade vs. time). The final vehicle speed profiles were developed by following SAE 2012–01–0878.[13]

The engine operational profile for engines installed in vehicles depends on the entire vehicle setup, including the use of hybrid systems if applicable, thus the entire vehicle must be considered when certifying a powertrain. Given that heavy duty vehicles can vary quite a bit even though the powertrain configuration remains unchanged, testing of every conceivable configuration is not possible; therefore, a representative average vehicle, consisting of generic vehicle parameters, is used to provide a representative configuration for certification testing. Generic vehicle parameters were developed with the intent of maintaining the same system load for engines installed in conventional vehicles and hybrid systems with the same power rating to maintain comparability in terms of emissions.[14]

EPA is finalizing vehicle parameters for hybrid powertrain testing in place of those in 40 CFR 1037.550 to be used in the vehicle model in 40 CFR 1037.550(f). These final parameters can be found in 40 CFR 1036.505 (via reference from 40 CFR 1036.510 for FTP testing) and included vehicle test mass, M, vehicle frontal area, A_{front}, vehicle drag area, C_dA, coefficient of rolling resistance, C_{rr}, drive axle ratio, k_a, tire radius, r, transmission efficiency if the hybrid powertrain is being tested without the transmission, axle efficiency, Eff_{axle}, vehicle curb mass, M_{curb}, and linear equivalent mass of rotational moment of inertias, $M_{rotating}$. The requirements for the determination of these parameters were taken from the Global Technical Regulation (GTR) No. 4 referenced above.

Under the final test procedure, to align the system demands for conventional and hybrid engines, the generic vehicle parameters are defined as a function of the system's power

[10] US EPA, US DOT/NHTSA. Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles—Phase 2: Regulatory Impact Analysis. EPA–420–R–16–900. August 2016. Page 3–41.

[11] United Nations Economic Commission for Europe. Addendum 4: Global technical regulation No. 4. Test procedure for compression ignition (C.I.) engines and positive-ignition (P.I.) engines fueled with natural gas (NG) or liquefied petroleum gas (LPG) with regard to the emission of pollutants Amendment 3., March 12, 2015.

[12] Six, C., Siberholz, G., Fredriksson, J., Geringer, B., Hausberger, S. Development of an exhaust emission and CO2 measurement test procedure for heavy-duty hybrids (HDH). October 27, 2014. Available online at: *https://wiki.unece.org/download/attachments/4064802/20141027_ACEA_Report.pdf?api=v2.*

[13] Andreae, M., Salemme, G., Kumar, M., and Sun, Z., ''Emissions Certification Vehicle Cycles Based on Heavy Duty Engine Test Cycles,'' SAE Int. J. Commer. Veh. 5(1):299–309, 2012, *https://doi.org/10.4271/2012-01-0878.*

[14] Six, C., Siberholz, G., Fredriksson, J., Geringer, B., Hausberger, S. Development of an exhaust emission and CO2 measurement test procedure for heavy-duty hybrids (HDH). October 27, 2014. Available online at: *https://wiki.unece.org/download/attachments/4064802/20141027_ACEA_Report.pdf?api=v2.*

rating. 40 CFR 1036.527 provides the procedure for determining the peak rated power, P_{rated}, and continuous rated power of the hybrid system, $P_{contrated}$, that goes into the vehicle test mass determination. These revisions also provide a procedure for the determination of the maximum vehicle speed (C speed), vrefC. In general, the process for determining both P_{rated} and $P_{contrated}$ is very similar to the GTR No. 4 hybrid system rated power determination procedure with a few exceptions. In the final 40 CFR 1036.527 procedure, the default axle efficiency is 0.955 because that is the default value in GEM. The determination of continuous rated power in the final EPA process versus the system rated power in the GTR No. 4 process is to address the lack of a steady state vehicle test cycle in GTR No. 4. The full throttle test to determine system rated power in GTR No. 4 lasts 50 to 150 seconds and GTR No. 4 determines rated power as peak power during these tests. While this process is appropriate for the FTP, the SET is 2400 seconds long and the extended operation at some high speed and load points can lead to some hybrid systems not being able to sustain peak power over the course of the test due to thermal limitations on the motor generator (generally due to material limitations) and limitations on the battery storage capacity and available usable energy. Under these scenarios, the hybrid system will typically derate the motor generator to thermally protect it, resulting in a sustained peak power that is lower than that determined using the GTR No. 4 process.

Under the final test procedure, the powertrain system rated power determination in 40 CFR 1036.527 includes the determination of both peak and continuous rated power. The peak rated power (P_{rated}) is used in the transient FTP test procedure, while the continuous rated power ($P_{contrated}$) is used in the steady-state SET test procedure. The vehicle C speed, v_{refC}, is also determined as a result of this process. This is the maximum vehicle speed at which Psys equals Pcontrated.

The final compression-ignition vFTP duty cycle vehicle speed profile was derived from the compression-ignition FTP vehicle duty-cycle developed in SAE 2012–01–0878. In this work, a vehicle FTP cycle and a vehicle SET cycle were created based on the transient diesel engine FTP and engine SET duty cycles. The vehicle cycles are the same duration and have similar power requirements and performance when compared to the engine cycles. The alignment of the engine and vehicle cycles maintain a consistency within vehicle and engine emissions evaluations. The compression-ignition FTP vehicle speed profile is not applicable to the spark-ignition FTP vehicle speed profile due to differences in the engine duty-cycle lengths, speed profiles, and torque profiles. Thus, a separate vehicle speed profile had to be developed for the spark-ignition FTP duty cycle. Using the methodology in SAE 2012–01–0878, a vehicle speed profile was developed for the spark-ignition FTP duty cycle and a comparison between the two cycles can be found in Table II–2. The vehicle speed profiles can be found in Figure II–1 and Figure II–2.

TABLE II–2—COMPARISON BETWEEN FTP VEHICLE DUTY-CYCLE METRICS FOR VEHICLES WITH COMPRESSION-IGNITION AND SPARK-IGNITION ENGINES

Cycle metric	Compression-ignition FTP vehicle duty cycle	Spark-ignition FTP vehicle duty cycle
Maximum acceleration (m/s^2)	1.55	1.47
Maximum deceleration (m/s^2)	−2.26	−2.15
Average speed (mph)	20.1	19.2
Maximum speed (mph)	60.6	60.8
Stop duration (%)	3.3	4.7
Distance (miles)	6.4	6.4

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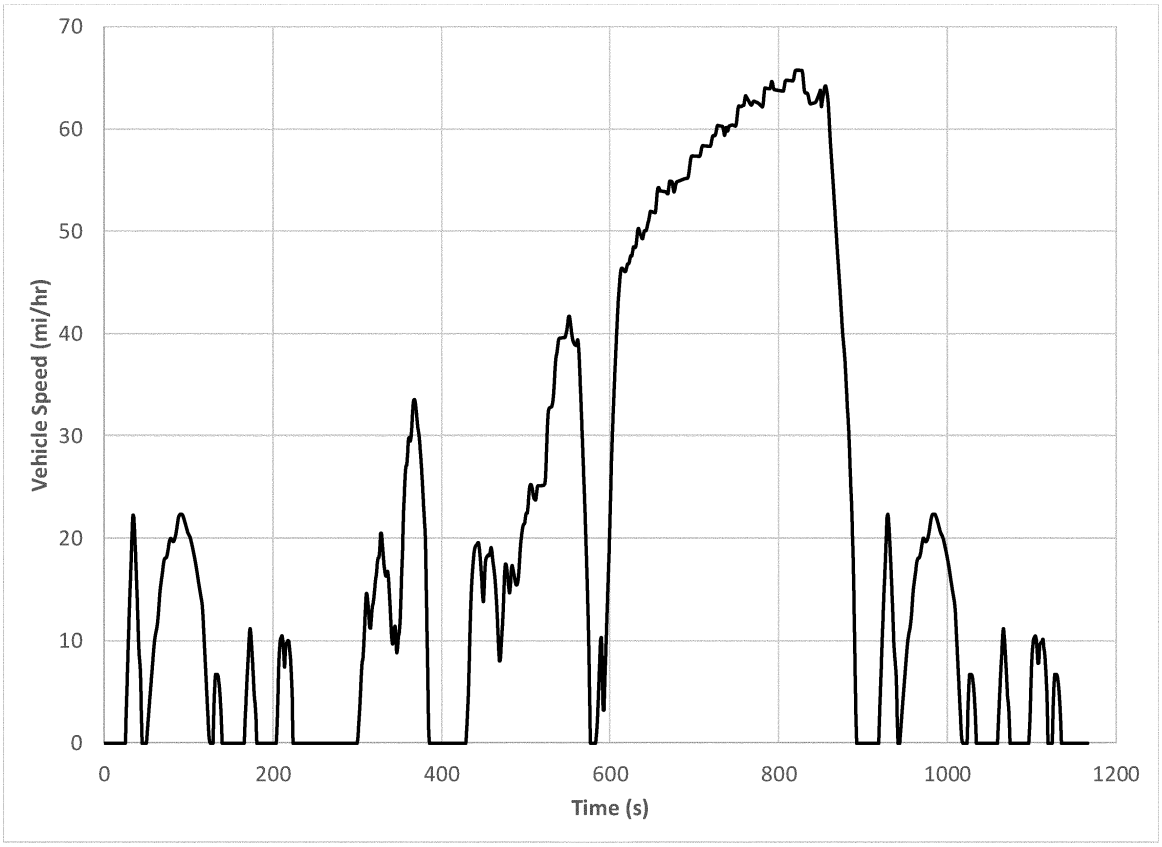


Figure II-2 Spark-Ignition FTP duty cycle vehicle speed profile.

The road gradient profile is designed to further align the powertrain system load for engines installed in conventional vehicles and hybrid systems to eliminate the deviations in cumulative work done between the engine and powertrain test. The grade profiles were developed to align the power versus time and cycle work of the vehicle profiles (compression-ignition vFTP, spark-ignition vFTP, and vSET) to the compression-ignition and spark-ignition FTPs, and SET. The general process was based on the development of the grade profile for the World Harmonized Vehicle Cycle (WHVC).[15] A reference normalized power curve was generated using denormalized torque and speed curves from 50 different compression-ignition engines with multiple engine ratings for the compression-ignition FTP, and SET. The denormalized curves were normalized individually for each engine based on the engine's rated power. The normalized power curves were then averaged to define the final reference normalized power curve. Ten different spark-ignition engine torque curves were used for the spark-ignition FTP. The duty-cycle velocity profile over time was then divided into multiple mini-cycles. Within each mini-cycle, a constant grade was defined in such a way that the energy calculated from the normalized power curve was matched for a given engine power rating. Power ratings between 100 and 500 kW were used to develop the compression-ignition vFTP, spark-ignition vFTP, and vSET duty-cycles. The average slope was calculated from the road grade profiles generated for the power ratings between 100 and 500 kW. The average fixed slope was calculated for every time step along the drive cycle, and a second order polynomial was chosen for the FTP duty-cycles to describe correlation between, and account for the differences in, the average fixed and individual slopes based on the rated power (Prated) of the powertrain. The equation and coefficient descriptions follow:

Equation II-1

$$\text{Road Grade} = a \cdot P_{\text{rated}}^2 + b \cdot P_{\text{rated}} + c$$

Where *a* is error compensation in %/kW^2, *b* is error compensation in %/kW, and c is the average fixed slope pattern. Negative road grade is included in the profile to ensured that a representative amount of recuperation energy is provided by the test cycle for hybrid applications. This enables accurate cycle power/work alignment for all vehicles with the FTP duty cycles for both compression-ignition and spark-ignition engines. Example vehicle road

[15] Six, C., Siberholz, G., Fredriksson, J., Geringer, B., Hausberger, S. Development of an exhaust emission and CO2 measurement test procedure for heavy-duty hybrids (HDH). October 27, 2014. Available online at: *https://wiki.unece.org/download/attachments/4064802/20141027_ACEA_Report.pdf?api=v2.*

grade profiles for a 350 kW compression-ignition and 400 kW spark-ignition engine can be found in Figure II–3 and Figure II–4.

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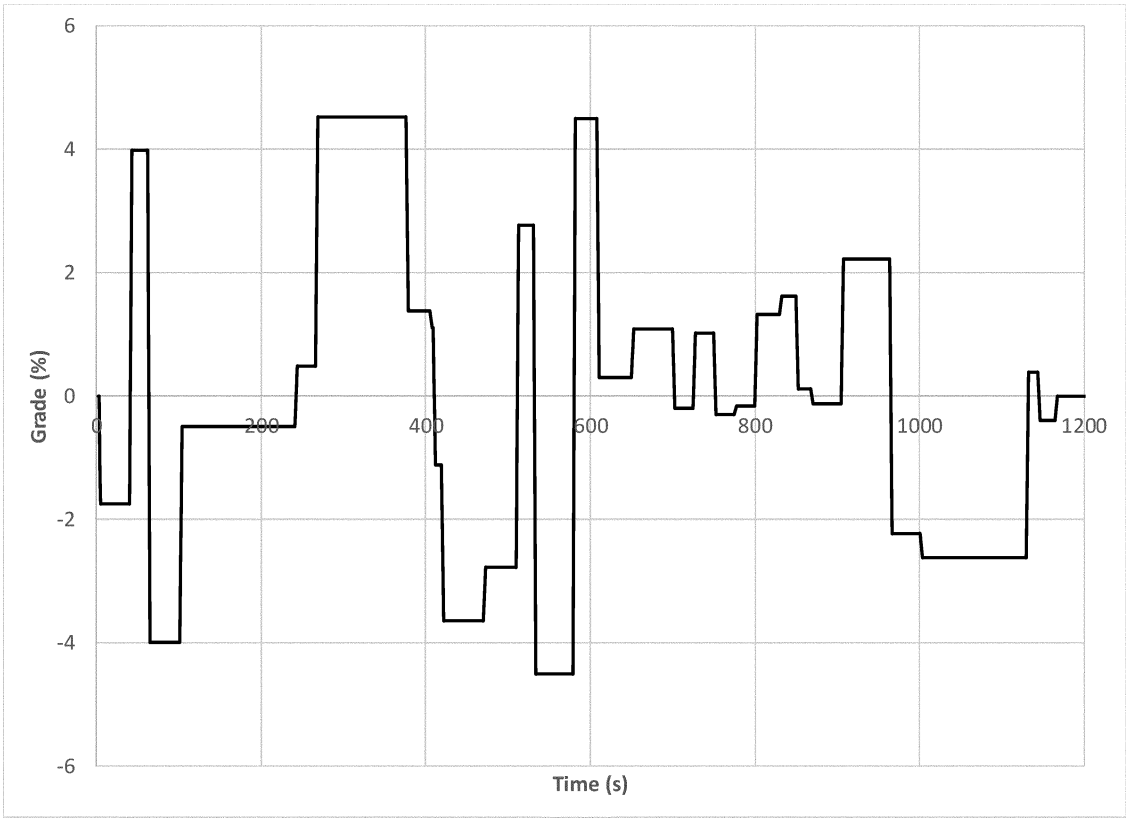


Figure II-3 Compression-Ignition FTP vehicle grade profile for a 350 kW engine.

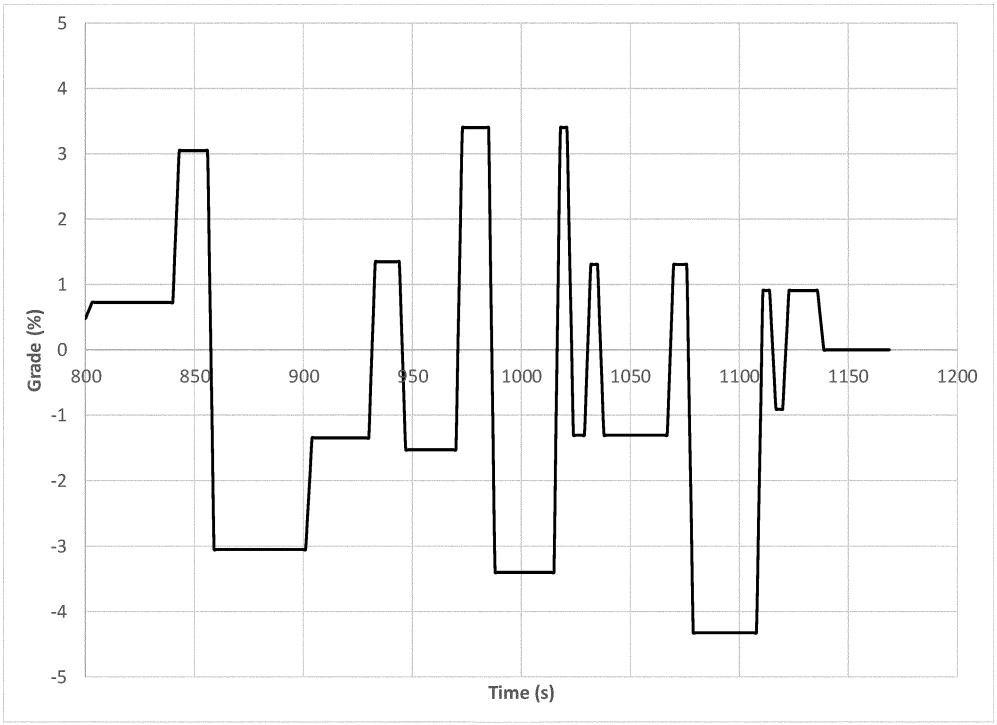


Figure II-4 Spark-Ignition FTP vehicle grade profile for a 400 kW engine.

During additional review of the development of the road grade profile for vSET included in the proposal, it became apparent that the powertrain might not be able to achieve the default vehicle C speed of 75.0 mph. To provide a representative maximum vehicle speed and vehicle A and B speeds that are scaled to the C speed in the final test procedure, the determination of vehicle C speed was added as an additional revision to 40 CFR 1036.527. This maximum achievable vehicle speed is used as the vehicle C speed in Table 1 of § 1036.505 and A and B speed are calculated as described in 40 CFR 1036.505. The final test procedure replaces the proposed maximum vehicle C speed and the default vehicle A and B speeds in the proposed additions to Table 1 of § 1036.505 with these calculated speeds. Adding the allowance to scale the vSET test speeds based on the vehicle maximum achievable speed required an accounting of the effect of these lower speeds on the road grade determination. This resulted in an expansion of the proposed second order polynomial equation for the vFTP to include vehicle speed in the final test procedure. The expanded equation and coefficient descriptions follow:

Equation II-2

$$Road\ Grade = a \cdot P_{\text{contrated}}^3 + b \cdot P_{\text{contrated}}^2 \cdot v_{\text{ref[speed]}} + c \cdot P_{\text{contrated}}^2 + d \cdot v_{\text{ref[speed]}}^2 + e \cdot P_{\text{contrated}} \cdot v_{\text{ref[speed]}} + f \cdot P_{\text{contrated}} + g \cdot v_{\text{ref[speed]}} + h$$

Where a is error compensation in %/kW3, b is error compensation in %/kW2·mi/hr, c is error compensation in %/kW2, d is error compensation in %/(mi/hr)2, e is error compensation in %/kW·mi/hr, f is error compensation in %/kW, g is error compensation in %/mi/hr, and h is the average fixed slope pattern. Negative road grade is included in the profile to ensure that a representative amount of recuperation energy is provided by the test cycle for hybrid applications. This enables accurate cycle power/work alignment for all vehicles with the engine SET duty-cycle.

The final test procedure also includes updates to the road grade coefficients for the compression-ignition and spark-ignition vFTP duty cycles from those proposed. EPA further reviewed the GTR No. 4 process and noted that the work in mini cycles number 4 and 6 was set to zero. This was a policy decision made during the GTR No. 4 process but is not appropriate for the generation of EPA's duty-cycles, which should include the actual work for these two mini cycles. While this improvement results in only a marginal difference from that proposed, it provides a more aligned comparison of work between the engine and vehicle duty-cycles. The result of this was included in the final test procedure in updated coefficients for the compression-ignition vFTP, spark-ignition vFTP, and vSET duty cycles (vSET improvements are in addition to the road grade coefficient updates already discussed). Figure II–5 and Figure II–6 show a comparison of the effect on work matching from changing the mini cycle work in mini cycles number 4 and 6 from zero to the actual work for a 300 kW engine. Note, this final test procedure is limited to hybrid powertrains to avoid having two different testing pathways for non-hybrid engines for the same standards.

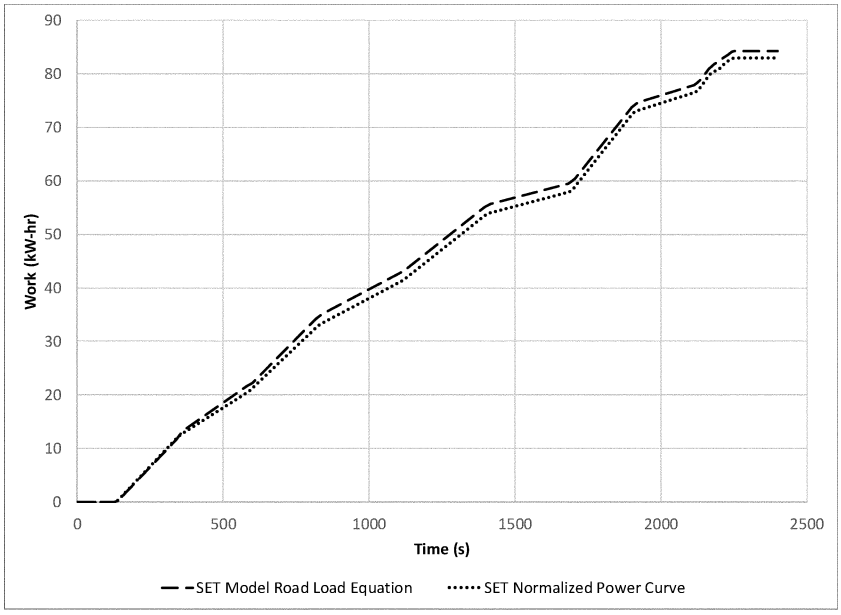


Figure II-5 Comparison of vSET work from the engine normalized power curve to the vehicle road load equation prior to code correction for a 300 kW engine.

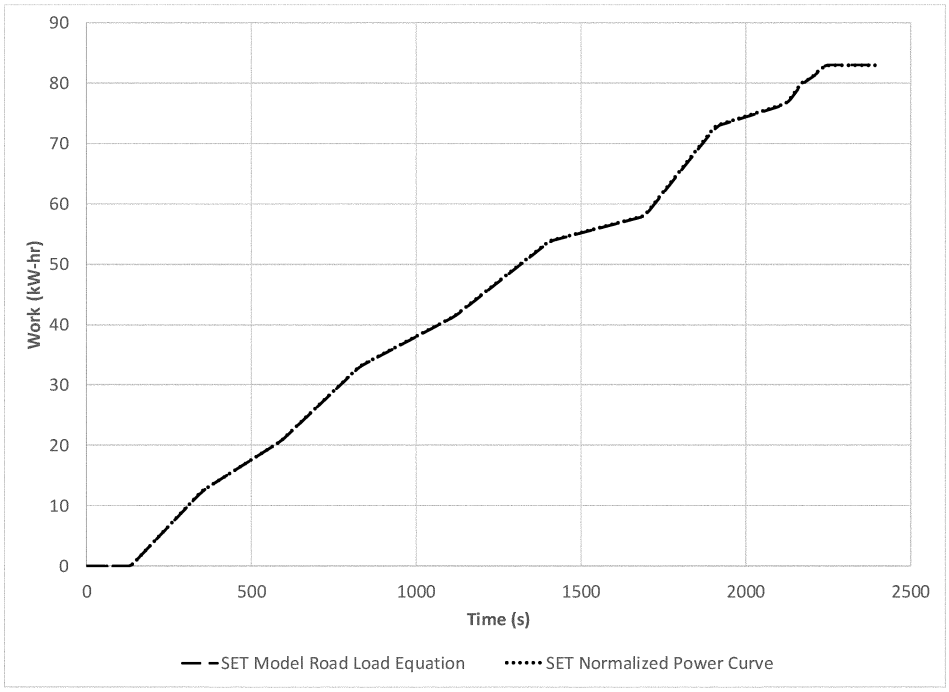


Figure II-6 Comparison of vSET work from the engine normalized power curve to the vehicle road load equation after code correction for a 300 kW engine.

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b. Hybrid Test Procedures for Vehicle Standards

i. Hybrid Fuel Maps

We are finalizing an option, after consideration of comments received, to generate fuel maps for engine hybrids using the powertrain test procedure in 40 CFR 1037.550. This was done by updating the hybrid engine test procedures finalized in 40 CFR 1036.503, 1036.505, 1036.527, and 1037.550 and include the addition of a transmission model to GEM and options in GEM to test without the transmission present, using the model in its place.

ii. Mild Hybrid Certification

Under the Phase 2 regulations, manufacturers must conduct powertrain testing if they wish to take credit for hybrid systems, including mild hybrid systems. However, manufacturers have expressed concerns about the cost of powertrain testing and that the existing procedure may not measure improvements from certain mild hybrid systems. EPA requested comment on alternative means of evaluating mild hybrids noting that manufacturers have asked EPA to consider the following options:

• Allow manufacturers to test a powertrain and apply analytically derived scaling factors to others (e.g., scale by fraction of battery capacity or motor capacity) under 40 CFR 1037.235(h).

• Allow manufacturers to use international test procedures for battery capacity, motor power, and motor efficiency.

• Provide smaller credit (potentially with a volume limit and/or only for limited time) in exchange for less testing (e.g., reduced benefit when using the simplified model spreadsheet that is available under docket no. EPA–HQ–OAR–2014–0827–2109).

Commenters generally responded with support for EPA addressing mild hybrid certification but did not provide any concrete means to address concerns surrounding the cost of powertrain testing. In addition, commenters stated that the existing procedures in the proposal may not measure improvements from certain mild hybrid systems. This section presents the changes we are adopting to hybrid test procedures after consideration of comments received. Additional details on these and other hybrid test procedure amendments or clarifications requested by commenters and our responses are available in Chapter 2 of our Response to Comments.

After further consideration, including the lack of additional input on these mild-hybrid certification options, we have concluded that the engine hybrid test procedure proposed in this rule, is the best pathway for these hybrids. This will allow a manufacturer to test a mild hybrid engine without having to certify the hybrid with a transmission under the powertrain testing option. Finalizing these changes allows the test results to better reflect the performance of mild hybrid's that are not integrated into the transmission, without requiring that the transmission be part of the certified configuration. Finalizing this procedure also allows the test results to be used for additional appropriate vehicles, since the test results will not be limited to the transmission that was included during the test, as is required for non-hybrid powertrains utilizing 40 CFR 1037.550. This mild hybrid engine test procedure was finalize via additions to the hybrid powertrain test procedure revisions in 40 CFR 1036.503, 1036.505, 1036.510, 1036.527, and 1037.550 and includes the addition of a transmission model to GEM and options in GEM to test without the transmission present, using the model in its place.

B. Heavy-Duty Engine GHG Emission Standards and Flexibility

1. Revisions to Credit Provisions for Vocational Engine Emissions Standards

EPA proposed several updates to the credit provisions related to credit provisions for vocational engines and requested comment on these credit provisions (see 85 FR 28145). This section presents the changes we are adopting to vocational engine credit provisions after consideration of comment received. Additional details on comment on these credit provisions and our response are available in Chapter 2.4 of our Response to Comments.

In developing the baseline emission rates for vocational engines in the final Phase 2 rulemaking, we considered MY 2016 FTP certification data for diesel engines, which showed an unexpected step-change improvement in engine fuel consumption and CO_2 emissions compared to data considered in the proposed rule. The proposed baseline emission rates came from the Phase 1 standards, which in turn were derived from our estimates of emission rates for 2010 engines. The underlying reasons for this shift in the 2016 Phase 2 final rule were mostly related to manufacturers optimizing their selective catalytic reduction (SCR) thermal management strategy over the FTP in ways that we (mistakenly) thought they already had in MY 2010 (*i.e.*, the Phase 1 baseline).

As background, the FTP includes a cold-start, a hot-start and significant time spent at engine idle. During these portions of the FTP, the NO_X SCR system can cool down and lose NO_X reducing efficiency. To maintain SCR temperature, manufacturers initially used a simplistic strategy of burning extra fuel to heat the exhaust system. However, during the development of Phase 1, EPA believed manufacturers were using more sophisticated and efficient strategies to maintain SCR temperature. EPA's misunderstanding of the baseline technology for Phase 1 provided engine manufacturers the opportunity to generate windfall credits against the FTP standards.

For the Phase 2 final rule, EPA revised the baseline emission rate for vocational engines to reflect the actual certified emission levels. The Phase 2 vocational engine final CO_2 baseline emissions are shown in the table below. More detailed analyses on these Phase 2 baseline values of tractor and vocational vehicles can be found in Chapter 2.7.4 of the Phase 2 Final RIA.[16]

TABLE II–3—PHASE 2 VOCATIONAL ENGINE CO_2 AND FUEL CONSUMPTION BASELINE EMISSIONS

Units	HHD	MHD	LHD
g/bhp-hr	525	558	576
gal/100 bhp-hr	5.1572	5.4813	5.6582

EPA did not allow the carryover of Phase 1 vocational engine credits into the Phase 2 program, consistent with these adjustments to the baselines. Since this issue does not apply for RMC emissions, the restriction was applied only for engines certified exclusively to the FTP standards (rather than both FTP and RMC standards). We believed that allowing engine credits generated against the Phase 1 diesel FTP standards to be carried over into the Phase 2 program would have inappropriately diluted the Phase 2 engine program. However, this was in the context of unadjusted credits.

After further consideration, we now believe that it would not dilute the program if the credits were appropriately adjusted to more accurately reflect improvement over the true baseline levels.

Allowing the portion of the credits that represent actual emission improvements to be carried forward is consistent with our rationale from Phase 2. Thus, we are allowing in § 1036.701(j), for the purpose of carrying Phase 1 credits into the Phase 2 program, and not compliance with Phase 1 standards, that manufacturers may recalculate the credits in their initial Phase 1 averaging, banking, and trading (ABT) vocational engine averaging set relative to the Phase 2 baseline engine values. The recalculated vocational engine credits for an ABT averaging set will be allowed into the Phase 2 engine program to the same extent as tractor engine credits. Cummins submitted a late comment (see Docket ID EPA–HQ–OAR–2019–0307–0066) requesting clarification of whether manufacturers would have the option of applying these vocational carryover provisions to one ABT averaging set but not another (*i.e.*, that EPA would not require the recalculation of all averaging sets.) This final rule affirms that recalculation of vocational credits is to be applied to all engines within an individual ABT averaging set and that

[16] U.S. EPA, U.S. DOT/NHTSA. Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles -Phase 2: Regulatory Impact Analysis, August 2016, EPA–420–R–16–900. See p. 2–76.

other averaging sets, such as tractors, are not affected by these vocational carryover provisions. EMA commented that manufacturers should be able to opt in to recalculating credits on an engine family by engine family basis, as applying this adjustment to all engine families could affect existing Phase 1 compliance for engines above the Phase 2 baseline value. However, EPA is only allowing this recalculation for the purpose of determining the amount of credit that can be carried into the Phase 2 program, and adjusting the credits for all the engine families a manufacturer chose to include in their initial ABT averaging set for Phase 1 program properly accounts for the net credits that can be carried forward. In the ABT program, all engine families within an averaging set are used in the calculation of credits, and manufacturers cannot pick and choose which engine families are used in that calculation.

As noted in the Phase 2 final rule, allowing additional flexibility for compliance with engine standards does not cause any increase in emissions because the manufacturers must still comply with the vehicle standards (See 81 FR 73499, October 25, 2016). However, this flexibility could allow some manufacturers to find a less expensive compliance path.

2. Special Flexibility for Vocational Engines and Credits

EPA requested comment on several updates to the special flexibility provisions for vocational engines (see 85 FR 28145). This section presents the regulatory changes we are adopting after consideration of comments received. Additional details on comments received on these provisions and our responses are available in Chapter 2.4 of our Response to Comments.

In the existing regulations at 40 CFR 1036.150(p), EPA provided special flexibility for engine manufacturers that certify all their model year 2020 engines within an averaging set to the model year 2021 FTP and SET standards and requirements. Where 40 CFR 1036.150(p) applies, paragraph (p)(1) specifies that GHG emission credits that manufacturers generate with model year 2018 through 2024 engines may be used through model year 2030, instead of being limited to a five-year credit life as specified in 40 CFR 1036.740(d). Note that under the Phase 2 final rule this provision in effect only applies to manufacturers of tractor engines, as under 40 CFR 1036.701(j) EPA did not allow the carryover of Phase 1 vocational engine credits into the Phase 2 program (81 FR 73499, October 25, 2016). Where 40 CFR 1036.150(p) applies, paragraph (p)(2) specifies that manufacturers are also allowed to certify model year 2024 through 2026 tractor engines to alternative standards that are slightly higher than the otherwise applicable standards. Note that in the table of alternative standards in the Phase 2 final rule EPA included values for medium and heavy heavy-duty vocational engines, but these values are identical to the Phase 2 standards and not slightly higher due to our concerns about windfall credits if carryover of Phase 1 credits were allowed.

The applicability of 40 CFR 1036.150(p) is based on the choices manufacturers made when certifying their MY 2020 engines. Instead of certifying engines to the final year of the Phase 1 engine standards, manufacturers electing the alternative instead certified to the MY 2021 Phase 2 engine standards. Because these engine manufacturers reduced emissions of engines that would otherwise have been subject to the more lenient MY 2020 Phase 1 engine standards, there can be a net benefit to the environment. These engines do not generate credits relative to the Phase 1 standards but instead generate credits relative to the pulled ahead MY 2021 Phase 2 engine standards. Because the vehicle standards themselves are unaffected, the alternative MY 2024–2026 engine standards will not dilute or diminish the overall GHG reductions or fuel savings of the program. Vehicle manufacturers using engines subject to the alternative MY 2024–2026 standards would need to adopt additional vehicle technology (*i.e.*, technology beyond that projected to be needed to meet the engine standards) to meet the applicable vehicle GHG standards. The result is that the vehicles would still achieve the same GHG emissions in use.

The proposed rule included an amendment to address the concern regarding Phase 1 windfall credits and requested comment on the possibility of a similar set of alternative standards for vocational engines. CARB and Volvo commented that they support these changes and flexibilities. Cummins commented opposing both the alternative MY 2024 through 2026 vocational engine standards and extending the life of credits generated from early compliance with Phase 2 vocational standards. The American Council for an Energy-Efficient Economy commented opposing extending the life of vocational engine credits generated in Phase 1, stating that doing so does not result in emission reductions but would increase emissions and reduce the rule's overall stringency. Cummins also commented that manufacturers had already developed and certified MY 2020 products without consideration of these changes, and even if post hoc recertification was possible, allowing them now would potentially be an advantage or disadvantage to individual manufacturers.

As discussed in section II.B.1, we are finalizing provisions on calculating credits relative to a baseline that addresses these windfall credit concerns, which also results in the extended credit life flexibility under 40 CFR 1036.150(p)(1) now being available to vocational vehicles that qualify under 40 CFR 1036.150(p). We are also finalizing a set of alternative standards for vocational engines, as shown in Table II–4.

TABLE II–4—ALTERNATIVE STANDARDS FOR VOCATIONAL ENGINES

Model years	Medium heavy-duty vocational (g/hp-hr)	Heavy heavy-duty vocational (g/hp-hr)
2024–2026	542	510

The Phase 2 standards are implemented in three MY steps: 2021, 2024, and 2027. The largest step change in stringency occurs in MY 2024, where approximately two-thirds of the total numeric reduction in the MY 2021 through MY 2027 standards is achieved, with the remaining one-third occurring in MY 2027. For the alternative tractor engine standards, EPA reversed the magnitude of the MY 2024 and MY 2027 step changes, where the MY 2024 alternative standard represents one-third of the total numeric reduction and is slightly higher than the Phase 2 standard. The standards at the beginning (MY 2021) and ending (MY 2027) steps of the Phase 2 program remain the same in either case, and only the level of decrease in standard for MY 2024 changes with the alternative standards. EPA determined the alternative standards for vocational engines by adjusting the magnitude of the MY 2024 standard in the same manner as used to determine the alternative tractor engine standards in the Phase 2. The Phase 2 vocational engine standards decrease by 10 g/hp–hr between MY 2021 and MY 2027, with a 7 g/hp–hr step change in the MY 2024 standard (approximately two-thirds of the total numeric reduction) and a 3 g/hp–hr step change in MY 2027. For the alternative vocational engine standards in MY 2024–2026, we are adopting a 3 g/hp–hr reduction from the MY 2021 standard (from 545 to 542 g/hp–hr for

medium heavy-duty (MHD) and 513 to 510 g/hp–hr for heavy heavy-duty) instead of 7 g/hp–hr. EPA believes that allowing these slightly higher (approximately 0.7 to 0.8% compared to the Phase 2 final rule) engine standards for vocational vehicles is justified, as the overall vehicle standards will still be met. Engine development and vehicle technology choices are pathways to meeting overall vehicle standards, as is the use of credits generated by early compliance. EPA's alternative engine standards provisions for vocational vehicles for MYs 2024–2026 allows manufacturers flexibility to choose the mix of engine and vehicle technologies that will comply with the standards. As noted in the Phase 2 final rule and this rule's proposal, EPA views this type of alternative as being positive from the environmental and energy conservation perspectives, as vehicle-level emission standards remain the same, but manufacturers are provided with significant flexibility on engine emission standards and credit life provisions that may reduce their compliance costs.

Regarding the adverse comments received, including whether or not manufacturers had the opportunity to consider these changes prior to MY 2020, these changes correspond to the corrected approach to Phase 1 credit calculations explained in Section II.B.1 above. At the time of the Phase 2 final rule, we believed that allowing Phase 1 vocational engine credits, without adjustment, to be carried over to the Phase 2 program would result in ''windfall'' credits, or dilution of the benefits of the Phase 2 program, and we adopted restrictions to limit their use. However, after the Phase 2 final rule we recognized that an alternative to restricting Phase 1 vocational engine credits because of windfall concerns would be to adjust credits earned in Phase 1 downward, relative to a baseline of the lower Phase 2 emissions standards, and in doing so, we would be extending to vocational engine manufactures the same flexibilities that were provided to tractor engine manufacturers. In this final rule we are allowing the vocational engine credits generated in Phase 1 to be adjusted downward and used in Phase 2 program through MY 2030, just as they were for tractors. In setting lower baseline emission values for Phase 1 vocational engine credits and providing the corresponding program flexibilities, EPA does not intend to advantage or disadvantage any manufacturer. Rather, we are removing restrictions that were applied only to vocational engines but no longer should be applied now that we are finalizing provisions that provide a proper accounting of the emission improvements realized by manufacturers who chose to certify their MY 2020 engines to the MY 2021 Phase 2 standards, so vocational and tractor engines are treated the same. In addition, the revised MY 2024–2026 alternative standards for vocational engines, while slightly higher than those in the Phase 2 final rule by 0.7 to 0.8%, do not reduce the overall stringency of the Phase 2 program, but instead reflect the alternative standards we would have adopted in the Phase 2 final rule alongside the similar tractor provisions, and for the same reasons we finalized those tractor provisions, had we considered adjusting baseline emission rates used for calculating Phase 1 credits. Manufacturers that qualify to use the alternative MYs 2024–2026 engine standards accelerated their compliance with the more stringent MY 2021 Phase 2 standards by one model year. As we explained in the Phase 2 final rule, because the vehicle standards themselves are unaffected, these alternative engine standards will not dilute or diminish the overall GHG reductions or fuel savings of the program. Vehicle manufacturers using engines subject to the alternative MYs 2024–2026 standards will need to adopt additional vehicle technology (*i.e.*, technology beyond that projected to be needed to meet the engine standard) to meet the applicable vehicle GHG standards. The result is that the vehicles using engines that comply with the alternative standards will still achieve the same overall GHG emissions in use. EPA believes that these alternative standards are appropriate, and allowing alternative engine standards for vocational vehicles that qualify is justified, for these reasons, and that vocational engine manufacturers who met the Phase 2 engine standards one year in advance of the MY 2021 implementation date should have the same flexibility as tractors to earn and use those credits through MY 2030.

3. Confirmatory Testing of Engines and Measurement Variability

EPA proposed updates to the procedure for confirmatory testing of the fuel mapping test procedure related to providing an interim 2% allowance during confirmatory testing of the fuel mapping test procedure finalized in the Phase 2 final rule and requested comment on ''. . . whether it appropriately balances the impacts of testing variability for fuel maps'' (see 85 FR 28146, May 12, 2020). This section presents the changes we are adopting to the confirmatory testing portion of the fuel mapping test procedure after consideration of comments received. Additional details on these comments and our responses are available in Chapter 2 of our Response to Comments.

During the Phase 2 rulemaking, manufacturers raised concern about measurement variability impacting the stringency of the engine GHG standards and fuel map requirements. As noted in the Phase 2 final rule, the final standards were developed to account for this. (81 FR 73571, October 25, 2016). Manufacturers raised particular concern about variability of fuel map measurements because neither they nor EPA had sufficient experience measuring fuel maps (in a regulatory context) to fully understand the potential impacts of measurement variability. We estimated the fuel map uncertainty to be equivalent to the uncertainty associated with measuring CO_2 emissions and fuel consumption over the FTP and SET cycles, which we estimated to be about one percent. However, the Phase 2 final rule noted that we were incorporating test procedure improvements that would further reduce test result uncertainty. We also noted that ''[i]f we determine in the future . . . that the +1.0 percent we factored into our stringency analysis was inappropriately low or high, we will promulgate technical amendments to the regulations to address any inappropriate impact this +1.0 percent had on the stringency of the engine and vehicle standards.'' (81 FR 73571, October 25, 2016)

In conjunction with this intention, EPA has worked with engine manufacturers to better understand the variability of measuring fuel maps using the test procedures and cycles specified by EPA in the Phase 2 final rule. Through that work, we identified several sources of variability that can be reduced by making small changes to the test procedures. EPA is adopting these changes, as explained in Sections II.A.1 through II.A.3 of this final rule.

SwRI performed emission measurements in multiple test cells and identified distributions of error for other test inputs such as measured fuel properties and calibration gas concentrations. SwRI then used a Monte Carlo simulation to estimate a distribution of errors in measured fuel maps.[17] After reviewing the results, EPA had several significant observations which we discussed in the proposal for

[17] Sharp, Christopher A., et al., ''Measurement Variability Assessment of the GHG Phase 2 Fuel Mapping Procedure'', Southwest Research Institute, Final Report, December 2019.

this final rule and which EPA confirms in this final action:

1. The variability of measuring CO_2 and fuel consumption during fuel mapping is greater than the one percent assumed in the Phase 2 final rule. Variability from vehicles without idle test cycles is <1.8% (1.68 to 1.8%), while variability from vehicles with idle test cycles is <2.8% (2.0 to 2.79%).

2. The variability of measuring CO_2 and fuel consumption during the fuel mapping procedure is roughly the same as that of the FTP and SET cycles, 3.34% for the FTP and 1.99% for the SET.

3. Measuring CO_2 and fuel consumption at idle is particularly challenging.

4. The data obtained during the test program at SwRI did not include all the test procedure changes being adopted in 40 CFR parts 1036 and 1037 that will further reduce fuel mapping test variability and therefore the variability is likely to be lower than reported by the SwRI.

Manufacturers have indicated they are concerned about the possibility of EPA changing an official fuel map result as a consequence of EPA confirmatory testing where the measured maps were within an expected range of variability. In the context of the SwRI test program, EPA observed similarity between the range of variability of measuring fuel maps and the range of variability of measuring CO_2 and fuel consumption over the FTP and SET cycles (measurements for which EPA has already determined in both Phase 1 and Phase 2 that no such allowances are needed). These results indicate that there is no additional source of increased variability associated with the fuel mapping test procedure and suggest that manufacturers should be able to comply without any special provisions. Additionally, the data we have available indicates that the manufacturers may potentially over time be able to take advantage of the 2% allowance, resulting in a reduction in stringency of the standards. We anticipate that this would not happen over the next few model years, as manufacturers will need time to implement the revised test procedures adopted in this rule that will reduce the variability of the fuel map test procedure to levels at or below the variability of the FTP and SET test procedures.

After considering the comments received, we are adopting the limited transitional approach aimed at addressing the manufacturers' variability concerns. As manufacturers implement this rule's revised test procedures to reduce variability, we will analyze and compare a manufacturer's declared and measured fuel maps to those that result from our confirmatory testing, with the goal of ensuring the long-term integrity of the Phase 2 program. We are codifying the interim provision for model years 2021 and later in 40 CFR 1036.150, under which EPA will not replace a manufacturer's fuel maps during confirmatory testing if the difference between the EPA-measured fuel maps and the manufacturer's declared maps is less than or equal to 2.0 percent. We may revisit the interim 2% allowance in a future rulemaking.

EPA also intends to further review data and developments in this area. We intend to review this provision as we learn more about the impact of measurement variability on measured and declared fuel maps submitted during the certification process for future model years (including the full impact of the test procedure improvements that are intended to reduce measurement variability), which may inform whether we determine additional action is warranted in the future with respect to fuel mapping variability. We also intend to enter into a round robin study of criteria and GHG pollutant engine testing variability with interested engine manufacturers, with the involvement of the Truck and Engine Manufacturer's Emission Measurement and Testing Committee. This data will add to the existing knowledge regarding the variability of the FTP, SET and fuel mapping test procedures and may help inform if future action is needed to further improve the test procedures.

We are also finalizing an algorithm for comparing fuel maps. Because fuel maps are multi-point surfaces instead of single values, it would be a common occurrence that some of EPA's points would be higher than the manufacturer's while others would be lower. This algorithm was inadvertently proposed as an interim provision in 40 CFR 1036.150(q) along with the 2.0 percent variability allowance. The algorithm and fuel map comparison process during a confirmatory test is needed for confirmatory testing regardless of an allowance. Therefore, in this final rule the algorithm and all supporting text are located at 40 CFR 1036.235(c)(5). The limited interim 2.0 percent variability allowance is located at 40 CFR 1036.150(q).

EPA's measured fuel maps will be used with GEM according to 40 CFR 1036.540 to generate emission duty cycles which simulate several different vehicle configurations, generating emission results for each of the vehicles for each of the duty cycles. Each individual duty cycle result will be weighted using the appropriate vehicle category weighting factors in Table 1 of 40 CFR 1037.510 to determine a composite CO_2 emission value for that vehicle configuration. Note that the equation is being finalized to use values before rounding as this is consistent with the provisions in 40 CFR 1065.20 to not round intermediate values. When the process is repeated for the manufacturer's fuel maps, the average percent difference between fuel maps will be calculated as:

Equation II-3

$$difference = \left(\frac{\sum_{i=1}^{N} \frac{e_{\mathrm{CO2compEPA}i} - e_{\mathrm{CO2compManu}i}}{e_{\mathrm{CO2compManu}i}}}{N} \right) \cdot 100\ \%$$

Where:

i = an indexing variable that represents one individual weighted duty cycle result for a vehicle configuration.

N = total number of vehicle configurations.

$e_{\mathrm{CO2compEPA}i}$ = unrounded composite mass of CO_2 emissions in g/ton-mile for the EPA confirmatory test.

$e_{\mathrm{CO2compManu}}$ = unrounded composite mass of CO_2 emissions in g/ton-mile for the manufacturer declared map.

4. Other Minor Heavy-Duty Engine Amendments

EPA proposed three additional updates to the testing and measurement provisions of 40 CFR part 1036, related to measuring emissions from heavy-duty

engines and requested comment on general improvements to the engine test procedures and compliance provisions (see 85 FR 28147). This section presents these three additional changes we are adopting to engine test procedures. Additional details on these and other engine testing and measurement amendments or clarifications requested by commenters and our responses are available in Chapter 2 of the Response to Comments.

- *Correcting the assigned N_2O deterioration factor in § 1036.150(g).* In the Phase 2 proposed rule, EPA proposed to lower the N_2O standard from 0.10 g/hp-hr to 0.05 g/hp-hr for model year 2021 and later diesel engines. In that context, we also proposed to lower the assigned deterioration factor (DF) from 0.020 g/hp-hr to 0.010 g/hp-hr for model year 2021 and later diesel engines. EPA explained in the preamble to the Phase 2 final rule that we were not finalizing the change to the standard (81 FR 73530, October 25, 2016), but inadvertently finalized the proposed DF change in the regulations. We proposed in this rulemaking to correct this error, consistent with EPA's clear statement in the Phase 2 final rule that we were not finalizing the change to the standard. However, given that finalizing the assigned DF of 0.01 g/hp-hr for N_2O in the regulations was an oversight on EPA's part in the Phase 2 final rule and that the Phase 2 final rule was inadvertently internally inconsistent, and after consideration of EMA's comment that manufacturers will not have time to correct or account for a change in the assigned DF in time for their MY 2021 certifications, we are deferring changing the assigned DF to 0.02 g/hp-hr until MY 2022 within the revisions finalized in this rulemaking.
- *Clarifying a reference to non-gasoline engine families in § 1036.705(b)(5).* The second sentence of § 1036.705(b)(5) is intended to refer to non-gasoline engine families. However, the existing text is not clear. As written, it can be read to mean that gasoline engine families may not generate emission credits. EPA is adding ''non-gasoline'' to clarify the intended meaning.
- *Engine families.* We are revising § 1036.230 to allow engine families to be divided into subfamilies with respect to CO_2. This allowance simplifies the certification process without changing the overall requirements.
- *Adding a summary of previously applicable emission standards as appendix A of part 1036.* The new appendix is being provided for reference purposes only regarding previously applicable emission standards and will cover regulatory text being deleted from 40 CFR part 86.

Except as noted above, we received no adverse comments on these proposed amendments and are adopting them without modification.

C. Heavy-Duty Vehicle GHG Emission Standards and Flexibility

1. Aerodynamic Compliance Provisions

In addition to the aerodynamic test procedure amendments described in Section II.A.6, we proposed several updates to § 1037.150(s) as it relates to EPA's confirmatory testing of aerodynamic parameters and § 1037.305 as it relates to our selective enforcement audit (SEA) procedures. We also requested comment on general improvements to the aerodynamic compliance provisions (see 85 FR 28147). This section presents the changes we are adopting to our confirmatory testing and SEA procedures after consideration of comments received. Additional details on these and other aerodynamic amendments or clarifications requested by commenters and our responses are available in Chapter 2 of our Response to Comments.

a. Confirmatory Testing for $F_{alt\text{-}aero}$

As described in 40 CFR 1037.235(c), EPA may perform confirmatory testing on a manufacturer's vehicles, including a vehicle tested to establish the $F_{alt\text{-}aero}$ value. The regulations also include an interim provision in § 1037.150(s) that outlines how EPA may and when EPA will not replace a manufacturer's $F_{alt\text{-}aero}$ value based on confirmatory test results. This interim provision connects EPA's confirmatory testing to the audit procedures of § 1037.305. In keeping with the principle that good engineering judgment [18] would generally call for more data rather than selecting a single value, and after consideration of comment, EPA is finalizing our proposed provision to require EPA to perform a minimum of 100 valid runs before replacing a manufacturer's $F_{alt\text{-}aero}$ value in confirmatory testing with some additional clarifications in § 1037.150(s).

CARB commented in support of increasing the number of runs from SEA to 100 to limit false failures, but requested in comment to know the origin of the proposed minimum 100 valid runs for confirmatory testing. Our intent with the finalized requirement for 100 valid confirmatory runs is to maintain consistency with the existing regulatory language adopted in the Phase 2 final rulemaking for SEA testing. The existing § 1037.305(a)(7)(iii) states: ''The vehicle passes if you perform 100 coastdown runs and $C_dA_{wa\text{-}upper}$ is greater than and $C_dA_{wa\text{-}lower}$ is lower than the upper limit of the bin to which you certified the vehicle.'' Similarly, as noted below in Section II.C.1.b, we are also finalizing our corresponding proposed language in the audit procedures of § 1037.305(a)(5) clarifying that manufacturers must perform a minimum of 24 runs to pass and a minimum of 100 runs to fail.

EMA requested additional modifications to § 1037.150(s) regarding EPA's approach to calculating a new $F_{alt\text{-}aero}$ value in confirmatory testing. EMA suggested that the regulation more explicitly connect to the SEA procedures for pass/fail criteria and the coastdown procedures for calculating $F_{alt\text{-}aero}$. They also suggested we directly outline how EPA will replace a manufacturer's $F_{alt\text{-}aero}$. EMA suggested that EPA calculate two $F_{alt\text{-}aero}$ values and apply the average of those values to replace a manufacturer's value. We agree with EMA's suggestions to clarify the connections to the SEA procedures of § 1037.305 and the coastdown test procedures of § 1037.528 and we updated § 1037.150(s) accordingly. While we generally agree that additional data is preferable, we are not committing to calculating multiple $F_{alt\text{-}aero}$ values, as requested by EMA, due to consideration of potential resource constraints; however, we have revised the regulatory language to allow for it. We also are not finalizing an approach to calculate the final $F_{alt\text{-}aero}$ when there are multiple values. Our revised § 1037.150(s) states that EPA will ''will generate a replacement value of $F_{alt\text{-}aero}$ based on *at least one* C_dA value and corresponding effective yaw angle''.

Additionally, as noted in the proposal regarding § 1037.150(s), we recognize that test conditions for coastdown testing are an important consideration. For our confirmatory testing, EPA intends to minimize the differences between our test conditions and those of the manufacturer and we proposed a note in § 1037.150(s) stating our intent to test at similar times of the year. EMA requested additional regulatory language regarding our intent to test at the same location as well as time of year. We are expanding our proposed note in § 1037.150(s) to include our intent to test at both the same time of year and the same location, subject to

[18] Good engineering judgment is defined in 40 CFR 1068.30 as judgments made consistent with generally accepted scientific and engineering principles and all available relevant information. See 40 CFR 1068.5 for requirements regarding applying good engineering judgment.

certain considerations. More specifically, we emphasize that the note in § 1037.150(s) is not a commitment by the agency due to the limited number of coastdown test facilities, the challenges of scheduling time for testing, and our prerogative to choose an alternative facility if we have concerns about the original test location. Our revised language in § 1037.150(s) states that we intend to test ''at similar times of the year where possible and at the same location where possible and when appropriate.''

b. Selective Enforcement Audits for Tractors

We proposed and received no adverse comments to three typographical edits to our aerodynamic testing audit procedures for tractors in § 1037.305. We are finalizing those three edits as proposed and additional editorial edits as follows:

- Section 1037.305—Replaced reference to 40 CFR 1068.420 with the range ''40 CFR 1068.415 through 1068.425'' as proposed.
- Section 1037.305(a)—Rephrased ''whether or not a tractor fails to meet'' to the more concise ''whether a tractor meets''.
- Section 1037.305(a)(2)—Corrected ''coastdown effective'' to ''coastdown effective yaw angle'' as proposed.
- Section 1037.305(a)(7)—Added a missing ''m2'' following the bin value of 5.95 in the example as proposed. Editorial revisions to remove passive voice.

In comment, EMA suggested additional revisions to § 1037.305(a) allowing manufacturers to apply good engineering judgment in their selective enforcement audit (SEA) testing if a production vehicle could not be configured to meet the trailer height specified in § 1037.501(g)(1)(i). We accept that a future production vehicle may be designed such that it cannot be configured to match a trailer that meets our current definition of standard trailer. We are finalizing a broader revision to address all such scenarios where a production vehicle cannot be configured to match a trailer that meets our current definition of standard trailer, including but not limited to height, that will address EMA's specific concern with meeting the standard trailer's height requirements. We are adding language to clarify that a manufacturer may seek EPA approval to use an alternate or modified vehicle configuration, consistent with good engineering judgment, if EPA chooses to audit a production vehicle configuration that cannot meet any of the standard trailer requirements specified in § 1037.501(g)(1).

As noted in Section II.C.1.a, we proposed and are finalizing a provision in § 1037.150(s) to require EPA to perform a minimum of 100 valid runs before replacing a manufacturer's $F_{alt\text{-}aero}$ value in confirmatory testing. Similarly, we are finalizing our corresponding proposed language in the audit procedures of § 1037.305(a)(5) clarifying that manufacturers must perform a minimum of 24 runs to pass and a minimum of 100 runs to fail. Finally, we received no adverse comments and are finalizing the proposed regulatory language in § 1037.305(a)(7)(v) allowing manufacturers to continue testing and to generate additional data that EPA may consider in our pass/fail determinations.

2. Idle Reduction Technologies

EPA proposed several provisions related to idle reduction technologies. This section presents the changes we are adopting after consideration of the comments received. See Chapter 2 of our Response to Comments for further details, including additional idle reduction amendments or clarifications requested by commenters and our responses.

a. Extended-Idle Reduction for Tractors

The Phase 1 version of GEM gives credit for extended idle emission reduction technologies that include a tamper-proof automatic engine shutoff system (AESS), with few override provisions. Phase 2 GEM gives credit for a wider variety of idle reduction strategies, recognizing technologies that are available on the market today, such as auxiliary power units (APUs), diesel fired heaters, and battery powered units. For example, a tamper-proof AESS with a diesel APU would be credited with a 4 percent reduction in emissions, while an adjustable AESS with a diesel fired heater would be credited with a 2 percent reduction in emissions (81 FR 73601, October 25, 2016).

Our proposal to revise § 1037.520(j)(4) to include GEM input values for combinations of these technologies received support from CARB, EMA, and Volvo and we are finalizing our proposed combinations of idle reduction technologies as shown in Table II–5. Adding these values to GEM reduces the compliance burden for manufacturers who would otherwise need to apply for off-cycle credits for these technology combinations. The values of these technology benefits were determined using the same methodology used in the Phase 2 final rule.

TABLE II–5—GEM INPUT VALUES FOR AES SYSTEMS

Technology	GEM input values	
	Adjustable	Tamper-resistant
Standard AES system	1	4
With diesel APU	3	4
With battery APU	5	6
With automatic stop-start	3	3
With fuel-operated heater (FOH)	2	3
With diesel APU and FOH	4	5
With battery APU and FOH	5	6
With stop-start and FOH	4	5

b. Idle Reduction Overrides

In 40 CFR 1037.660, we identify three idle reduction technologies (*i.e.*, automatic engine shutdown, neutral idle, and stop-start) and specify how these systems must operate to qualify for GEM credit. Included among those provisions are allowances for overriding these systems where it may damage the engine or create a safety issue for the vehicle occupants or service personnel. This section highlights the some of the idle reduction override provisions we are adopting, either as proposed or further revisions after consideration of comments received.

i. Automatic Engine Shutdown (AES) Overrides

While we did not specifically propose or request comment on AES overrides, New Flyer (a bus manufacturer) commented that the override condition for AES systems during servicing in § 1037.660(b)(1)(ii) (cross-referenced under the existing regulations for vocational vehicles in § 1037.660(b)(2)(i)) could pose a safety risk to maintenance personnel. They stated that maintenance personnel may not have a diagnostic scan tool required to deactivate the system and some maintenance may require longer than the current 60-minute limit before reactivation. New Flyer suggested an ''open engine compartment'' would be a more appropriate override condition.

After consideration of New Flyer's safety concern for vocational vehicles, we are revising § 1037.660(b)(2) to allow a vocational vehicle's AES system to delay shutdown if necessary while servicing the vehicle without the scan tool requirement and time limit. Our final revision removes the cross-reference in § 1037.660(b)(2)(i) to that particular provision in § 1037.660(b)(1) and replaces it with a new provision in § 1037.660(b)(2)(ii). Our new provision allows a delay in shutdown for vocational vehicles if the engine compartment is open and replaces the

regulatory text regarding unsafe cab temperatures in the current § 1037.660(b)(2)(ii), which is redundant with the existing cross-reference to paragraph (b)(1) in paragraph (b)(2)(i). For vocational vehicles, we believe an open engine compartment sufficiently indicates that a vocational vehicle is being serviced and automatic engine shutdown would provide limited environmental benefit. We are not taking final action to revise the tractor-specific provision of § 1037.660(b)(1)(ii) to allow an open engine compartment as a condition for AES override, since the environmental benefits of AES on tractors occurs when these vehicles are parked for extended durations where an open engine compartment may not be a sufficient deterrent for the operator to circumvent the AES.[19]

We are finalizing editorial revisions to § 1037.660(b) so the paragraphs consistently begin with ''When''. Additionally, we reordered the paragraphs of § 1037.660(b)(1) to move the servicing provision previously located at paragraph (b)(1)(ii) to paragraph (b)(1)(vi) such that the vocational vehicle AES provisions can continue to reference the range of relevant (b)(1) paragraphs in paragraph (b)(2)(i).

ii. Neutral Idle Overrides

EPA proposed and is finalizing a provision in § 1037.660(b)(3)(ii) that would allow the neutral idle system to delay shifting the transmission into neutral if the transmission is in reverse gear (85 FR 28271, May 12, 2020). New Flyer requested an additional override when the vehicles is on a road grade of 6.0 percent or more to prevent the safety concern of vehicle rollback. EPA agrees with this safety concern and is finalizing a provision in § 1037.660(b)(3)(iii) to allow a delay in neutral idle when the vehicle is on a grade greater than or equal to 6.0 percent. EMA requested additional overrides for ''safety; thermal protection of the emissions aftertreatment; and maintenance of aftertreatment temperature within a range for adequate emissions control''. EPA is not adopting EMA's suggested override conditions as we do not think that they would likely be appropriate without more specific criteria. Manufacturers continue to have the option to justify the need for additional overrides for their individual systems and seek EPA approval through § 1037.660(b).

[19] Tractor manufacturers have the option to request and we may approve additional override criteria as needed to protect the engine and vehicle from damage and to ensure safe vehicle operation, as stated in § 1037.660(b).

iii. Stop-Start Overrides

We requested comment on a specific list of override conditions for stop-start systems (85 FR 28151, May 12, 2020). CARB expressed concern that additional overrides may compromise emissions and requested a requirement that manufacturers bring their proposed overrides to EPA for approval. We are not requiring a ''case-by-case'' approval process for these overrides, as suggested by CARB, but we note that, in the certification application provisions of § 1037.205(b)(5), manufacturers are required to include a description of their idle reduction technology, including the override conditions of § 1037.660. We believe this continues to be an appropriate level of oversight for these idle technologies and their associated override conditions.

EMA and New Flyer supported the inclusion of all override conditions listed in the proposed rule for comment, but their comments did not expand on the need for any of the individual conditions to be adopted. Each commenter requested additional override conditions and included the rationale for those requests. Our final revisions to § 1037.660(b)(4) cross-reference the provisions for vocational vehicle AES (paragraph (b)(2)) and neutral idle (paragraphs (b)(3)(ii) and (iii)) such that the new open engine compartment, reverse gear, and road grade provisions for those systems also apply for stop-start systems. EPA considered the original list and the commenters' additional suggested override conditions and we are adopting the following additional override criteria specific to stop-start systems to ensure safety and/or effective system operation as noted in § 1037.660(b)(4):

- When the steering angle is at or near the limit of travel to avoid steering wheel kickback during engine start.
- When a wheel speed sensor failure may prevent the anti-lock braking system from detecting vehicle speed.
- When an automatic transmission is in ''park'' or in ''neutral'' with the parking brake engaged because the feature is intended to be used during driving operation.
- When a component failure protection mode is active, such as starter motor overheating, which may prevent the engine from restarting.
- When a fault is active on a system component needed to start the engine, which may prevent the engine from restarting.
- When the flow of diesel exhaust fluid is limited due to freezing, because an engine-off condition may further delay thawing and SCR operation.

It was not clear that the remaining override conditions suggested by commenters or presented for comment in the proposed rule pose a widespread concern for safety, vehicle operation, or serviceability, or could not be easily overridden by the driver, and we are not adopting those overrides in our final revisions. However, manufacturers continue to have the option to seek EPA approval for these or additional criteria they believe are needed to protect the engine and vehicle from damage and to ensure safe vehicle operation (see § 1037.660(b)).

3. Weight Reduction

EPA proposed minor revisions to the weight reduction provisions (see 85 FR 28150). This section presents the changes we are adopting after consideration of comments received. See Chapter 2 of our Response to Comments for additional details on some of these amendments, including other amendments or clarifications requested by commenters and our responses.

The regulations in 40 CFR 1037.520 include tables to calculate weight reduction values for using certain lightweight components. The sum of the weight reductions is used as an input to GEM. As noted in Section II.A.2, EPA proposed two changes to Table 8 of that section allowing manufacturers to use the heavy heavy-duty (HHD) values for medium heavy-duty (MHD) vehicles with three axles (*i.e.*, 6x4 and 6x2 configurations) and adding a footnote to the table to clarify that the weight reduction values apply per vehicle (instead of per component) unless otherwise noted. We received no adverse comments to the proposed updates to Table 8 and we are finalizing the two changes.

We received comment from EMA requesting ''a process for adding in other weight-savings technologies''. As described in § 1037.520(e)(5), this process is available in the existing off-cycle provisions of § 1037.610 and no further action is needed or being finalized in this rule. EMA also requested clarification on the origin of certain weight reduction values for tires and recommended use of a ''base'' value for comparison. We note that all the values in Table 6 through Table 8 of § 1037.520 were developed through notice and comment in the HD Greenhouse Gas Emissions Phase 1 and Phase 2 rulemakings based on information as described in the Regulatory Impact Analysis for the rules. We did not propose changes to the weight reduction tables and are not taking any final action at this time to

update values to refer to a base weight, but manufacturers continue to have the ability to apply through our off-cycle process.

4. Self-Contained Air Conditioning Units

We proposed a revision to § 1037.115(e) to clarify that it is ''intended to address air conditioning systems for which the primary purpose is to cool the driver compartment (85 FR 28151). This would generally include all complete pickups and vans, but not self-contained air conditioning or refrigeration units on vocational vehicles.'' CARB and New Flyer requested additional clarification on the phrase ''self-contained''. After consideration of submitted comments, we are finalizing a modified version of the proposed changes to § 1037.115(e)(1) that incorporates some of the feedback from commenters. We are maintaining the proposed statement that this provision is intended for A/C systems that cool the driver compartment. We're clarifying that it generally applies to ''cab-complete'' pickups and vans (see definition at § 86.1803–01) which is more appropriate for heavy-duty than ''complete pickups and vans'' as proposed. We are expanding the existing statement that the paragraph does not apply for self-contained A/C or refrigeration units by adding the phrases ''used to cool passengers'' and ''used to cool cargo''. Finally, we further clarify that a self-contained system for purposes of this provision is an ''enclosed unit with its own evaporator and condenser even if it draws power from the engine.''

5. Manufacturer Testing of Production Vehicles

The regulations require tractor manufacturers to annually chassis test five production vehicles over the GEM cycles to verify that relative reductions simulated in GEM are being achieved in actual production. See 40 CFR 1037.665. We do not expect absolute correlation between GEM results and chassis testing. GEM makes many simplifying assumptions that do not compromise its usefulness for certification but do cause it to produce emission rates different from what would be measured during a chassis dynamometer test. Given the limits of correlation possible between GEM and chassis testing, we would not expect such testing to accurately reflect whether a vehicle was compliant with the GEM standards. Therefore, § 1037.665 does not apply compliance liability to such testing.

The regulation also allows manufacturers to request approval of alternative testing ''that will provide equivalent or better information.'' Manufacturers have asked us to clarify this allowance and we proposed to revise § 1037.665 to provide an example that the EPA may allow manufacturers to provide CO_2 data from in-use operation, and CO_2 data from manufacturer-run on-road testing, as long as the data allows for reasonable year-to-year comparisons and includes testing from non-prototype vehicles (85 FR 28148). We didn't receive any comments on the proposed changes to § 1037.665, and we are finalizing changes to the regulation as proposed. To qualify, the vehicles would need to be actual production vehicles rather than custom-built prototype vehicles. Such vehicles could be covered by testing or manufacturer owned exemptions but would need to be produced on an assembly line or other normal production practices. Manufacturers would also need to ensure test methods are sufficiently similar from year to year to allow for a meaningful analysis of trends.

6. Vehicle Model Year Definition

For Phase 2 tractors and vocational vehicles, the vehicle's regulatory model year is usually the calendar year corresponding to the vehicle's date of manufacture. However, the Phase 2 regulations allow the vehicle's model year to be designated as the year before the calendar year corresponding to the vehicle's date of manufacture if the engine's model year is from an earlier year. We are amending as proposed the definition of model year in § 1037.801 to allow vehicle manufacturers to extend the period during which a vehicle's certification is valid to account for this flexibility. This clarification more explicitly explains how vehicle manufacturers utilize this existing flexibility.

After promulgation of the Phase 2 final rule, it became apparent that the Phase 2 vehicle model year definition does not allow starting vehicle production before the start of the named year if the engine model year also begins in the earlier year. For example, if a manufacturer would start its 2024 engine model year in December 2023, the definition would not allow vehicles produced in 2023 to be model year 2024.

To address this issue, EPA is allowing the option for the vehicle's model year to be designated as the year after the calendar year corresponding to the vehicle's date of manufacture. This has the effect of allowing manufacturers to meet standards earlier with aligned engine and vehicle model years. Model years would still be constrained to reflect annual (rather than multi-year) production periods and include January 1 of the named year.

We did not receive comments on these proposed change to the definition of model year for vehicles. We are accordingly adopting the revised definition for model year in 40 CFR 1037.801 for tractors and vocational vehicles with a date of manufacture on or after January 1, 2021, as proposed, except that the final rule includes additional text to make explicit the requirement for the model year to be based on the manufacturer's annual production period for new models. This is consistent with the definition of model year for vehicles subject to Phase 1 standards in the same section.

7. Compliance Margins for GEM Inputs

The regulations at 40 CFR 1037.620(d) allow component manufacturers to conduct testing for vehicle manufacturers, but they do not specify restrictions for the format of the data. Vehicle manufacturers have raised concerns about component manufacturers including compliance margins in GEM inputs—in other words, inputting a value that is significantly worse than the tested result. They state that many component suppliers are providing GEM inputs with compliance margins, rather than raw test results. However, when stacked together, the compliance margins would result in inappropriately high GEM results that would not represent the vehicles being produced.

We proposed to note in 40 CFR 1037.501(i) that declared GEM inputs for fuel maps and aerodynamic drag area will typically include compliance margins to account for testing variability and that, for other measured GEM inputs, the declared values will typically be the measured values, and received comment requesting additional clarification and providing additional suggested revisions as described in Chapter 2 of the Response to Comments document. One commenter suggested that EPA finalize default allowance values at this time, however we lack adequate data to make a thorough determination on what these values should be. In addressing manufacturers' concern, it is important to distinguish between engine fuel maps (which are certified separately) and other GEM inputs that are not certified. As is discussed in Section II.B.3, certified engine fuel maps are expected to include compliance margins to account for manufacturing and test variability. However, EPA did not expect each of the other GEM input to have a

significant compliance margin of its own. (Note that the aerodynamic bin structure serves to provide an inherent compliance margin for most vehicles.) Rather, we expected the certifying original equipment manufacturer (OEM) to include compliance margins in their Family Emission Limits (FELs) relative to the GEM outputs.

For vehicle GHG standards, the primary role for FEL compliance margins is to protect against SEA failures. Without a compliance margin under the Phase 2 regulations, normal production variability would cause some vehicles to fail, which would require the testing of additional vehicles. Even if the family ultimately passed the SEA, it would probably require the manufacturer to test a large number of vehicles. However, because SEAs and confirmatory tests for particular components would not target GEM inputs for other components, a modest vehicle FEL compliance margin determined by the vehicle manufacturer, that accounts for the component input with the highest uncertainty used to determine the vehicle FEL, would be sufficient to cover the full range of uncertainty for all components.

While we are not adopting explicit changes with respect to compliance margins that were requested in comments, we are finalizing the revision in § 1037.501(i) as with clarifying edits that, for other measured GEM inputs, the declared values are typically the measured values without adjustment, and finalizing a related provision after consideration of comments on this proposed revision and on conducting a confirmatory test and SEA for an axle or transmission apart from a specific vehicle. Specifically, the additional change clarifies this intent for confirmatory testing in 40 CFR 1037.235(c)(2) by stating that the results will only affect your vehicle FEL if the results of our confirmatory testing result in a GEM vehicle emission value that is higher than the vehicle FEL declared by the manufacturer.

These revisions further obviate a need for component-specific compliance margins and should thus further clarify that component-specific suppliers should be providing GEM inputs with raw test results, rather than values that include an associated compliance margin. While we do not believe that suppliers should normally include compliance margins when providing test data to OEMs for GEM inputs, we do believe they should provide to OEMs some characterization of the statistical confidence they have in their data. This allows the OEM to apply an appropriate overall compliance margin for their vehicle FEL. During a confirmatory test, EPA would compare the GEM results using our measured inputs with the declared FEL for the vehicles, which means that the compliance margin for measurement variability should be built into the FEL of the vehicle. Again, EPA notes that the certified engine fuel maps are expected to include small compliance margins to account for manufacturing and test variability.

Finally, none of this is intended to discourage suppliers and OEMs from entering into commercial agreements related to the accuracy of test results or SEA performance.

8. SEAs for Axles and Transmissions

Under 40 CFR 1037.320, a selective enforcement audit (SEA) for axles or transmissions would consist of performing measurements with a production axle or transmission to determine mean power loss values as declared for GEM simulations, and running GEM over one or more applicable duty cycles based on those measured values. The axle or transmission is considered passing for a given configuration if the new modeled emission result for every applicable duty cycle is at or below the modeled emission result corresponding to the declared GEM inputs. As described below, EPA is revising the provision regarding where an axle or transmission does not pass.

We believe special provisions are needed for axles and transmissions given their importance as compliance technologies and a market structure in which a single axle or transmission could be used by multiple certifying OEMs. Under the existing SEA regulations, if an axle or transmission family from an independent supplier fails a SEA, vehicle production could be disrupted for multiple OEMs and have serious economic impacts on them. We are finalizing a revision that will minimize the disruption to vehicle production.

Under the revised provision, if the initial axle or transmission passes, then the family would pass, and no further testing would be required. This is the same as under the existing regulations. However, if the initial axle or transmission does not pass, two additional production axles or transmissions, as applicable, would need to be tested. We are finalizing this revision as proposed, except we are finalizing additional changes to § 1037.320(c) after consideration of comments received to the proposal in a couple respects. We further clarified that these additional production axels or transmissions to be tested could be different axle and transmission configurations within the family to cover the range of product included in the family. We also are finalizing an additional clarification in 40 CFR 1037.320(c) that further address how the results from the SEA will be used to determine if the manufacturer declared map should be replaced, by stating that if you fail the audit test for any of the axles or transmissions tested, the audit result becomes the declared map, also requiring revision of any analytically derived maps if applicable, and that these would become official test results for the family. In other words, this approach would correct the data used by the OEM for their end-of-year report.

After consideration of comments, we are also finalizing changes to 40 CFR 1037.320(b) to clarify that the test transmission's gear ratios and not the default ratios in 40 CFR 1036.540 should be used in GEM. After consideration of comment regarding the lack of an engine defined for use as a GEM input when a component-level SEA is being performed, we have specified the use of the default engine map in 40 CFR part 1036, appendix C, and a default torque curve that we have added as Table 1 to 40 CFR 1037.520. The axle and transmission GEM inputs can now be determined based on the default map and torque curve. See Chapter 2 of the Response to Comments for further details on comments received and our responses.

9. Electric and Hybrid Vehicles in Vocational Applications

Prior to the proposal, manufacturers expressed concern that the Phase 2 regulations are not specific enough regarding how to classify hybrid vocational vehicles (see § 1037.140). This is not an issue for tractors, which are classified based on gross vehicle weight rating (GVWR). However, vocational vehicles are generally classified by the class of the engines. Obviously, this approach does not work for electric vehicle without engines. This approach could also misrepresent a hybrid vehicle that is able to use an undersized engine. To address these problems, we proposed changes to § 1037.140(g)(1) to clarify that the classification for tractors where provisions are the same as vocational vehicles applies for hybrid and non-hybrid vehicles, and paragraph (g)(4) to clarify that Class 8 hybrid and electric vehicles are Heavy HDVs and all other vehicles are classified by GVWR classes. CARB and Tesla supported the regulation changes proposed in § 1037.140(g). We did not receive any

adverse comments on these proposed revisions and we are finalizing the proposed revisions with the addition of ''electric'' to paragraph (g)(1) for consistency with the rest of the section and an expanded clarification in paragraph (g)(4)(iii) that Class 8 hybrid and electric vehicles are considered Heavy HDV, *regardless of the engine's primary intended service class.*

CARB suggested tying certification provisions such as warranty and useful life to the vehicle GVWR to avoid allowing a downsized hybrid powertrain installed in a heavier vehicle weight class to have shorter useful life and emission warranty obligations. We note that useful life (§ 1037.105(e)) and warranty (§ 1037.120(b)) for vocational vehicles are defined by vehicle service class (*i.e.*, Light HDV, Medium HDV, and Heavy HDV) and our final revision to § 1037.140(g)(4) ensures all Class 8 hybrid and electric vehicles are classified in our heaviest weight class with the longest useful life and warranty periods. Consequently, any powertrain in a Class 8 vehicle, including a downsized hybrid, would be a Heavy HDV and subject to all corresponding certification provisions for Heavy HDVs.

We also requested comment on alternative approaches, such as specifying the useful life in hours rather than miles for these vocational vehicles or allowing electric vehicles to step down one weight class, with justification from the manufacturer. With respect to the potential alternative approaches we requested comment on, Ford supported specifying useful life in hours rather than miles for vocational vehicles. However, CARB raised questions on how the useful life in miles correlates to engine hours. Tesla encouraged EPA to continue to use a single, miles-based criteria for useful life. In addition, Ford expressed support for allowing electric vehicles to step down one weight class. We are not taking final action on any of the potential alternative approaches at this time. Regarding adopting useful life criteria based on engine hours, we currently lack the data required to link engine hours to miles for the range of vocational vehicles. Regarding potentially allowing electric vehicles to step down one weight class, we currently have concerns that this may allow for inappropriate useful life and warranty requirements.

Section 1037.140(g)(5) references § 1037.106(f) in specifying that, in certain circumstances, you may certify vehicles to standards that apply for a different vehicle service class. We received comments from EMA and Volvo and agree with the commenters' suggestion to clarify how our revision to § 1037.140(g)(1) regarding hybrid and electric tractors interacts with the cross-referenced § 1037.106(f). Consistent with our explanation at proposal that the current requirements in § 1037.140(g) applied to all tractors, we are also finalizing a corresponding clarification in § 1037.106(f)(2) regarding Class 7 hybrid and electric tractor's ability to certify to the Class 8 standards, by adding a sentence that ''[t]his applies equally for hybrid and electric vehicles.'' See Chapter 2 of the Response to Comments for further details on comments received and our responses.

10. Vocational Vehicle Segmentation

The Phase 2 regulatory structure applies the primary vocational standards by subcategory. Manufacturers are generally allowed to certify vocational vehicles in the particular duty-cycle subcategory they believe to be most appropriate, consistent with good engineering judgment.[20] This process for selecting the correct subcategory is often called ''segmentation.'' Under this structure, EPA expects manufacturers to choose a subcategory for each vehicle configuration that best represents the type of operation that vehicle will actually experience in use. This is important because several technologies provide very different emission reductions depending on the actual in-use drive cycle. For example, stop-start would provide the biggest emission reductions for urban vehicles and much less reduction for vehicles that operate primary on long intercity drives.

Vocational vehicles are classified based upon the gross vehicle weight rating (GVWR) as defined in § 1037.140(g). Once classified, manufacturers identify the intended regulatory subcategory duty cycles (*i.e.*, Urban, Multi-purpose, or Regional) for each vocational vehicle configuration as indicated in § 1037.140(h). There are constraints for vocational duty cycle and regulatory subcategory, specified in § 1037.150(z).

Prior to the proposal, manufacturers raised concerns about the impact of this structure on their ability to plan for and monitor compliance. They suggested that more objective and quantitative ''good engineering judgment'' criteria would be helpful. In response to these concerns, EPA proposed an interim ''safe harbor'' provision in § 1037.150(bb) for vocational vehicle segmentation. Under the proposal, manufacturers meeting the safe harbor criteria would be presumed to have applied good engineering judgment, and we explained that we thought the criteria were consistent with the intent of the Phase 2 program and would not allow manufacturers to reduce the effective stringency the standards.

The first principle of the proposed safe harbor was that any vehicle could be classified as Multi-purpose. The Multi-purpose duty cycle weighting factors include significant weightings for highway operation, lower speed transient operation, and idle. Thus, it would not generally overvalue an individual technology. The second principle of the proposed safe harbor was that vehicles not classified as Multi-purpose should not be exclusively Regional or Urban. We proposed a quantitative measure that evaluates the ratio of Regional vehicles to Urban vehicles within an averaging set. Specifically, we proposed that the ratio of Regional vehicles to Urban vehicles must be between 1:5 and 5:1. EPA requested comment on the proposed approach overall and the range of acceptable ratios.

CARB supported the proposed provision of allowing any vocational vehicle to be classified as Multi-purpose. However, both EMA and CARB questioned the ratios for vocational vehicle categories in the proposed provisions of § 1037.150(bb). EMA commented that the proposed ratios were ''arbitrary'' and may not be represent a manufacturer's model mix during any specific year. Instead, EMA suggested that more appropriate ''good engineering judgment'' would be to base the vehicle category on ''the duty cycle weighting under which it performs most efficiently in GEM.'' CARB commented that the ratio could inadvertently drive manufacturers to certify the vehicles with an inappropriate duty cycle and recommended all vehicles be certified as Multi-purpose unless the manufacturer could provide ''good justification'' for a Regional or Urban categorization.

We are finalizing a revision in § 1037.140(h) and throughout § 1037.150(z) to replace ''duty cycle'' with the term ''regulatory subcategory'' that more appropriately reflects the intent of classifying a vehicle and its connection to a standard. Additionally, after considering the comments, EPA is finalizing one principle of the safe harbor provision proposed as § 1037.150(bb); specifically, the paragraph that allows manufacturers to select the Multi-purpose subcategory for any vocational vehicle, unless otherwise

[20] See 40 CFR 1068.5 for specifications on applying good engineering judgment.

specified in § 1037.150(z).[21] As noted previously, selecting this subcategory and associated duty cycle would require technologies that reduce emissions across all operation (*i.e.*, high speed, lower speed transient, and idle) and we believe it is an appropriate default duty cycle if a manufacturer is unsure of the final vehicle application when applying the good engineering judgment provision of § 1037.140(h). We agree with the concerns expressed by CARB and EMA and are not finalizing the ratios of Regional to Urban vehicles in paragraph § 1037.150(bb)(2) of the proposed safe harbor provision. Instead, as discussed further below, we continue to rely on the constraints listed in § 1037.150(z) to guide manufacturers in identifying an appropriate duty cycle, with the addition of a Multi-purpose safe harbor.

Section 1037.150(z) outlines the constraints manufacturers apply when determining the appropriate vocational subcategory for their vehicles as described in § 1037.140. Instead of adding a new paragraph (bb) as proposed, we are reordering § 1037.150(z) and incorporating a new paragraph to allow the Multi-purpose classification. The modified § 1037.150(z)(1) through (3) now include the current provisions that identify the vehicle configurations (designed for higher-speed cruise operation) for which manufacturers must select the Regional subcategory, specifically if certified based solely on testing with the high-speed Supplemental Emission Test, if certified as a coach bus or motor home, or if equipped with a manual transmission after MY 2024. Except where one of those existing three criteria for the Regional subcategory apply, a new paragraph (z)(4) allows manufacturers to select the Multi-purpose subcategory for any vocational vehicle. The remaining renumbered paragraphs (z)(5) through (7) describe the current regulation's existing allowances for and limitations on selecting the Urban subcategory that are based on the most appropriate transmission configurations for lower speed, stop-and-go driving.

We continue to believe market forces will induce manufacturers to design their vocational vehicles such that their GHG emission performance (and fuel efficiency) is optimized for their customers' specific applications and, in most cases, it will be clear which subcategory and associated duty cycle is appropriate for a given vocational vehicle configuration. Consequently, the vehicles and their associated technology packages will also be relatively optimized for one of the vocational duty cycles available for compliance using GEM, as shown in Table 1 of § 1037.510. Where it is unclear, we would evaluate whether a manufacturer has applied the good engineering judgment required under § 1037.140(h) taking into consideration whether the subcategory selected is best suited for the vehicle as indicated by the totality of its powertrain options, vehicle features, and duty cycle performance under which it demonstrates the most favorable emissions result relative to the emission standard. We note that in our review of a manufacturer's good engineering judgment request, we reserve the right to require the use of a more appropriate duty cycle and subcategory. We will continue to monitor use of the good engineering judgment provision of § 1037.140(h) and the constraints listed in § 1037.150(z) and may re-evaluate our approach in the future if we determine it is necessary.

Thus, the final regulations include consideration of both EMA and CARB's suggestions. As noted previously, we would consider the duty cycle weighting under which the vehicle performs most efficiently in GEM in considering whether good engineering judgment was used, and have provided manufacturers of vehicles not subject to the constraints listed in § 1037.150(z) with a clear pathway to certify those vehicles as Multi-purpose if they are otherwise unable to justify Regional or Urban duty cycle when exercising good engineering judgment.

In the proposed rule, we also requested comment on the need for the subcategory on the label. EMA commented that it is unnecessary and a complication and burden for manufacturers to identify whether the vehicle is in the Urban, Multi-Purpose or Regional subcategory on the label and requested that we ''remove the requirements in § 1037.135(c)(3) and (4)''. CARB commented and encouraged EPA to require the subcategory be on the label because it would help consumers choose the appropriate certified vehicles for their intended vehicle operation cycles. After consideration of EMA's and CARB's comments, we are removing the requirement to explicitly state the regulatory subcategory on the emission label as specified in § 1037.135(c)(4). In the Phase 2 final rulemaking, we concluded that it was unnecessary for the emission label to contain a comprehensive list of all emission components and that it is important to balance the manufacturers' ''need to limit label content with the [the agencies'] interest in providing the most useful information for inspectors'' (81 FR 73636, October 25, 2016). Since stating the regulatory subcategory on the label provides limited additional information inspectors could use to quickly determine if the vehicle is in its certified condition and the subcategory can be identified from the vehicle family name required by paragraph (c)(3), we believe it is appropriate to remove it as a requirement on the emission label. We are not revising the current requirement to print the standardized designation for the vehicle family name as required by § 1037.135(c)(3), which ensures consistency between the label and other compliance provisions that require the vehicle family name. As such, the regulatory subfamily can continue to be identified from the family name, which should help address CARB's concern if a consumer chooses to use the emissions label when deciding to purchase a vehicle.

11. Early Certification for Small Manufacturers

Vehicle manufacturers that qualify as small businesses are exempt from the Phase 1 standards, but must meet the Phase 2 standards beginning January 1, 2022.[22] However, some vehicle families have been certified voluntarily to Phase 1 standards by small manufacturers. In an effort to encourage more voluntary early certification to Phase 1 standards, we proposed a new interim provision in § 1037.150(y)(4) for small manufacturers that certify their entire U.S.-directed production volume to the Phase 1 standards for calendar year 2021 (85 FR 28150). Small manufacturers may delay complying with the Phase 2 standards by one year, and instead comply with the Phase 1 standards for that year, if they voluntarily comply with the Phase 1 standards for one full prior year. Specifically, small manufacturers may certify their model year 2022 vehicles to the Phase 1 greenhouse gas standards of §§ 1037.105 and 1037.106 if they certify all the vehicles from their annual U.S.-directed production volume to the Phase 1 standards starting on or before January 1, 2021. If the small manufacturers do so, the provision allows these manufacturers to certify to the Phase 1 standards for model year 2022 (instead of the otherwise applicable Phase 2 standards). Early compliance with the Phase 1 standards should more than offset any reduction in benefits that would otherwise be

[21] This portion of the proposed safe harbor provision was proposed as § 1037.150(bb)(1).

[22] See 40 CFR 1037.150(c).

achieved from meeting Phase 2 standards starting January 1, 2022.[23]

The provision we proposed also allows the Phase 1 vehicle credits that small manufacturers generate from model year 2018 through 2022 vocational vehicles to be used through model year 2027. Under the existing regulations, all manufacturers that generate credits under the Phase 1 program are allowed to use such Phase 1 vehicle credits in the Phase 2 vehicle averaging, banking, and trading program, but the credits are subject to the five-year credit life. As noted in the proposed rule, we believe the limit on credit life can be problematic for small manufacturers with limited product lines which allow them less flexibility in averaging, and the longer credit life will provide them additional flexibility to ensure all their products are fully compliant by the time the Phase 2 standards are fully phased in for model year 2027. We note that these Phase 1 emission credits are based on the degree to which the Family Emission Limit is below the Phase 1 standard.

We received no adverse comment to either proposal for small manufacturers in § 1037.150(y)(4). Our final revisions include minor edits to the proposed credit-related provision in § 1037.150(y)(4) to create a standalone sentence and moving the proposed provision that describes the certification flexibility for these small manufacturers to a new § 1037.150(c)(4) where the applicable standards and implementation dates for qualifying small businesses are introduced.

12. Delegated Assembly

In 40 CFR 1037.621, EPA specifies provisions to allow manufacturers to ship incomplete vehicles and delegate the final assembly to another entity. Manufacturers previously expressed the concern that these ''delegated assembly'' requirements are too burdensome in some cases, particularly in cases such as auxiliary power units and natural gas fuel tanks. EPA requested comment on this issue and proposed a single clarifying edit in § 1037.621(g). CARB encouraged EPA to maintain the existing delegated assembly provisions. We received no comments adverse these existing provisions or providing suggestions for updated text. The final rule adopts only the single clarifying edit in § 1037.621(g), as proposed.

13. Canadian Vehicle Standards

During the Phase 2 rulemaking, Environment and Climate Change Canada (ECCC) emphasized that the highway weight limitations in Canada are much greater than those in the U.S. Where the U.S. Federal highways have limits of 80,000 pounds gross combined weight, Canadian provinces have weight limits up to 140,000 pounds. This difference could potentially limit emission reductions that could be achieved if ECCC were to fully harmonize with the U.S.'s HD Phase 2 standards because a significant portion of the tractors sold in Canada have GCWR (Gross Combined Weight Rating) greater than EPA's 120,000-pound weight criterion for ''heavy-haul'' tractors.

EPA addressed this in Phase 2 by adopting provisions that allow the manufacturers the option for vehicles above 120,000 pounds GCWR to meet the more stringent standards that reflect the ECCC views on appropriate technology improvements, along with the powertrain requirements that go along with higher GCWR (see 81 FR 73582, October 25, 2016). Vehicles in the 120,000 to 140,000 pound GCWR range would normally be treated as simple ''heavy haul'' tractors in GEM, which eliminates the GEM input for aerodynamics. However, vehicles certified to the optional standards would be classified as ''heavy Class 8'' tractors in GEM, which then requires an aerodynamic input. Nevertheless, they both use the heavier payload for heavy haul.

ECCC has since adopted final standards for these 120,000 to 140,000 pound GCWR tractors, which differ from the optional standards finalized in Phase 2.[24] Since the purpose of these standards was to facilitate certification of vehicles intended for Canada, we proposed optional standards in § 1037.670 that would be the same as the final ECCC standards. We did not receive any comments adverse the proposed optional standards and we are finalizing the optional standards as proposed in § 1037.670. Note that these standards are not directly comparable to either the normal Class 8 standards or the heavy haul standards of § 1037.106 because GEM uses different inputs for them. Manufacturers who choose to opt into meeting the Canadian standards would achieve greater emission reductions compared to EPA's program.

ECCC has also adopted new standards for tractors in the 97,000 to 120,000 pound GCWR category. In general, EPA would classify a tractor in the 97,000 to 120,000 lb GCWR range in one of its Class 8 tractor subcategories. EPA's Class 8 tractor standards, which cover up to 120,000 lb GCWR, have standards that are *more stringent* than ECCC's standards for their 97,000 to 120,000 lb GCWR subcategory. We did not propose special provisions for these tractors, but requested comment on the need for special provisions for these vehicles. Both EMA and Volvo commented that special provisions are necessary to facilitate certification of 97,000 to 120,000-pound GCWR tractors for export to Canada. EMA suggested a similar approach for these 97,000 to 120,000-pound GCWR tractors as the one provided for the optional certification for tractors at or above 120,000 pounds GCWR, proposed in § 1037.670. Similarly, Volvo requested that EPA provide subcategories and standards for these tractors that align with the ECCC regulations. We have concerns with the suggestion of providing an option for tractor standards that are less stringent than our current standards. EPA did not propose and is not taking any final action on special provisions for such vehicles at this time.

14. Transmission Calibrations

Manufacturers with advanced transmission calibrations may use the powertrain test option in § 1037.550 to demonstrate the performance of their transmissions. We adopted this option to provide an incentive for the development of advanced transmissions with sophisticated calibrations.

Transmission manufacturers have developed some new efficient calibrations, but must also maintain less efficient calibrations to address special types of operation. Due to concerns about resale value, most customers want to retain the ability to select the correct calibration for their operation. For transmissions with such selectable calibrations, § 1037.235(a) requires that they test using the worst-case calibration, which can undermine the incentive to continue improving the calibrations. We received comment requesting that we allow averaging of the worst-case and best-case performance, however this request would be a significant departure from how engine families are certified and what 40 CFR part 1037 currently requires for transmissions. We also received comment on weighting the

[23] The magnitude of any impact on air quality would be small because of the low production volumes from these small business manufacturers.

[24] Government of Canada. Regulations Amending the Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations and Other Regulations Made Under the Canadian Environmental Protection Act, 1999: SOR/2018–98, Canada Gazette, Part II, Volume 152, Number 11, May 16, 2018. Available online: *http://gazette.gc.ca/rp-pr/p2/2018/2018-05-30/html/sor-dors98-eng.html.*

calibration performance based on the actual use of these calibrations in the field. We believe that this option will give the most representative use of these calibrations and their impact on CO_2 emissions. After consideration of these comments, we are finalizing a change to allow manufacturers to measure both the best- and worst-case calibrations and weight them by prior model year based on survey data, prior model year sales volume, or other appropriate means. This weighting will be accomplished by testing both calibrations and weighting the results in Table 2 of § 1037.550 as described in amendments made in § 1037.235(a). See Chapter 2 of the Response to Comments for further details on comments received and our responses.

15. Other Minor Heavy-Duty Vehicle Amendments

We received no adverse comments to the following proposed amendments. EPA is finalizing the following amendments to part 1037 as proposed:

- Section 1037.103(c)—Adding phrase ''throughout the useful life''.
- Section 1037.105 Table 5—Updating footnote format in table.
- Section 1037.106 Table 1—Updating footnote format in table.
- Section 1037.120(b)—Correcting the text with respect to tires and Heavy Heavy-Duty vehicles.
- Section 1037.150(c)—Adding a sentence pointing to additional interim provisions for small manufacturers.
- Section 1037.150(aa)—Clarifying the production limit for drayage tractors under the custom chassis allowance.
- Section 1037.201(h)—Correcting phrase ''except that § 1037.245 describes . . .'' to refer to § 1037.243.
- Section 1037.205(e)—Correcting parenthetical ''(see 40 CFR 1036.510)'' to refer to 40 CFR 1036.503.
- Section 1037.225(e)—Reorganizing paragraph with the introduction noting starting data, paragraph (e)(1) with existing text, and a new paragraph (e)(2) regarding the requirement that the amended application be ''correct and complete''.
- Section 1037.230(a)(2)—Adding two clarifying paragraphs for optional tractor subcategories.
- Section 1037.243(c)—Rephrasing for consistency with other paragraphs in the section.
- Section 1037.255—Replacing the possessive ''your'' with articles a/an/the throughout this section and added clarifying statements related to the information submitted in an application for a certificate of conformity.
- Section 1037.301(b)—Removing phrase ''matches or exceeds the efficiency improvement''.
- Section 1037.635(c)(1)—Editorial, adding a missing ''the''.
- Section 1037.701(h)—Editorial, fixing reference.
- Section 1037.705(c)(2)—Adding a clarification for exported vehicles.
- Section 1037.801—Correcting punctuation in Compression-ignition and Low rolling resistance tires definitions; adding the word ''motor'' to definition of Electric vehicle; adding definition of electronic control module; clarifying Heavy-duty vehicle definition with respect to incomplete vehicles; adding definition of High-strength steel; clarifying Light-duty truck definition; adding Tonne definition.
- Section 1037.805(c) and (d)—Editorial; updating to be consistent with format in other parts.

EPA is also finalizing the following additional amendments, that include revisions we are finalizing as proposed but with additional clarifications, editorial improvements, or to fix typographical errors, after consideration of comments, as noted. Chapter 2 of our Response to Comments includes additional details on some of these amendments, as well as other amendments or clarifications requested by commenters and our responses.

- Section 1037.150(c)—Reorganizing the section into subparagraphs; removing ''qualifying'' throughout; moving reference to NAICS codes into definition of ''small manufacturer'' in § 1037.801; and combining the statements regarding the MY 2022 implementation date for tractor and vocational vehicles and the additional delays in later years for alternatively-fueled tractors and vocational vehicles into the new paragraph (c)(2) to provide further clarification in response to CARB's seeming misinterpretation of the regulations in a submitted comment related to our proposed § 1037.150(y)(4) provision. Also moving the certification-focused portion of the early certification provision proposed as part of § 1037.150(y)(4) to a new paragraph (c)(4) as discussed in Section II.C.11.
- Section 1037.231(b)(7)—Adding an additional revision to provide clarification on forward gear availability, noting that available forward gear means the vehicle has the hardware and software to allow operation in those gears, consistent with our final revision to § 1037.520(g) as noted in Section II.A.2.
- Section 1037.235(h)—Providing an example of an ''untested configuration'' in response to EMA's request for clarification.
- Section 1037.601(a)(2)—Removing limit of ''up to 50'' and added a more general statement that we will limit the number of engines.
- Section 1037.615—Clarifying that fuel cells powered by hydrogen should have a Family Emission Limit of 0 g/ton-mile for calculating CO_2 credits. Vehicles fueled by hydrogen are inherently carbon-free, which supports treating these vehicles the same as electric vehicles. This clarification is responsive to a comment from EMA.
- Section 1037.660(a)(2)—Revising to specify the permissible delay before engaging neutral idle when the vehicle is stopped; updating from proposed value of two seconds to the final value of five seconds after consideration of a request from Ford that suggested ''two seconds is too short to account for normal stops and restarts in real on-road driving''. This request was posed in an email to EPA following the proposed rule.[25]
- Section 1037.740(b)—Updated naming convention to match vehicle service classes Our revised delay of five seconds for neutral idle accommodates Ford's request and is consistent with the permissible § 1037.740(b)—Updating the naming convention to match vehicle service classes.
- Section 1037.801—Updating the proposed definitions for ''hybrid engine or powertrain'' and ''hybrid vehicle'' to be consistent with the proposed and further developed hybrid powertrain test procedure revisions to part 1036, subpart F, and the definitions of ''hybrid powertrain'' and ''mild hybrid'' added to 40 CFR part 1036. These revisions add examples of systems that qualify as hybrid engines or powertrains, specifically systems that recover kinetic energy and use it to power an electric heater in the aftertreatment. Updating model year definition as discussed in Section II.C.6 and small manufacturer definition as discussed in II.C.11.
- Section 1037.805(b)—Updating quantity and quantity descriptions including additional revisions to those proposed to ensure that these descriptions were consistent throughout the part.
- Section 1037.805(f)—Adding an additional revision to those proposed to update gravitational constant after consideration of comments received on the proposal.
- Appendix III to part 1037—Updating the definition of the emission control identifier ''DWSW'' to clarify

[25] Memorandum to Docket EPA–HQ–OAR–2019–0307, Email from Ken McAlinden (Ford) Requesting Regulatory Change for Neutral Idle Credit, Christopher Laroo, September 23, 2020.

high-strength steel wheel and maintain consistency with the related requirements in Table 6 of § 1037.520, after consideration of comment by CARB.

D. Onboard Diagnostics (''OBD'')

EPA proposed several updates to the onboard diagnostic (OBD) provisions of 40 CFR part 86, subpart A, related to onboard diagnostic requirements for heavy-duty engines and requested comment on general improvements and efforts to harmonize EPA and CARB OBD requirements (see 85 FR 28152). This section presents the changes we are adopting to OBD requirements after consideration of comments received. Additional details on these and other OBD amendments or clarifications requested by commenters and our responses are available in Chapter 2 of our Response to Comments document.

EPA's OBD regulations for heavy-duty engines are contained in 40 CFR 86.010–18, and were promulgated February 24, 2009 (74 FR 8310). Although these regulations were originally harmonized with CARB's OBD program, CARB has since updated and made changes to their regulations which EPA has not adopted. Most recently, in October 2019, CARB approved revisions to the onboard diagnostics requirements that include implementation of real emissions assessment logging (REAL) for heavy-duty engines and other vehicles.

The proposed rule requested comment on differences between existing EPA and CARB OBD regulations and included specific proposed revisions intended to reduce these differences. EPA proposed six specific revisions to update existing OBD regulations and harmonize with CARB requirements. We received comments supportive of these proposals, as well as comments indicating that EPA should reconsider certain proposals to ensure the regulations are clear and have the desired effect. After further evaluation and consideration of comments, EPA is finalizing four of these six proposed revisions:

(1) Adopting as proposed the CARB 5% threshold for misfire in § 86.010–18(g)(2). This would allow manufacturers to not detect misfires under certain conditions, such as during aftertreatment regeneration and some low temperature operation.

(2) Adopting as proposed CARB's misfire flexibilities in 1971.1(e)(2.3.3) which include identifying when it is reasonable for a manufacturer to seek approval for systems that cannot detect all misfire under all required speed and load conditions and where they seek approval to disable misfire detections.

(3) Adopting with a clarification the proposed revision to our in-use compliance standards in § 86.010–18(p) to reflect the CARB approach for minimum ratios for representative samples where a system would be considered noncompliant if the representative test sample (or performance group) indicates that the in-use ratio is below 0.088. A clarification was added to specify that the in-use ratio is based on the ''average'' value for the test sample group.

(4) Adopting as proposed the allowance to use CARB OBD reporting templates for EPA OBD requirements.

EPA received comments on the 5% threshold for misfire indicating concern that the provision as proposed does not reflect CARB's most recent requirements. EPA's proposal in § 86.010–18(g)(2)(iii)(C) was to require misfire detection on those engines equipped with sensors that can detect misfire occurrences. Existing CARB requirements state that all diesel engines are required to continuously monitor for misfire, not just those engines equipped to detect for misfire. EPA is finalizing the misfire provision as proposed but may further review this provision and may consider harmonizing with existing CARB requirements that require misfire detection for all diesel engines as a part of a future rulemaking. For example, the Cleaner Trucks Initiative (''CTI'') rulemaking intends to consider updating existing EPA OBD regulations and harmonizing further with CARB OBD requirements as noted in the advance notice of proposed rulemaking (ANPR) (85 FR 3306, January 21, 2020). EPA received comment on the proposal to revise our in-use compliance standards that recommended adding a clarification to the proposed language to indicate that the in-use ratio is based on the average in-use ratio of the engines in the test sample group. The comment pointed out that the regulations as proposed were not clear as to how the in-use ratio would be determined. Existing EPA regulations in § 86.010–18(j)(3)(i) and (ii) specify that manufacturers must collect and report in-use monitoring performance data representative of production vehicles, separate production vehicles into monitoring performance groups and submit data that represents each of these groups. The purpose of this requirement is to analyze in-use data from more than one vehicle to ensure that the OBD system is functioning properly. The frequency that some OBD monitors run can vary depending on the duty cycle of a particular vehicle, therefore, using the average in-use ratio from to evaluate performance is most appropriate. Adding this clarification also increases the alignment of EPA and CARB OBD requirements. After consideration of these factors we have added the word ''average'' to § 86.010–18(p)(4)(ii) to provide this clarity. Comments were also received on the in-use requirements stating that an additional provision should be included to § 86.010–18(p)(4)(ii) to ensure that compliance with the in-use ratio requirement is not influenced by engines with very high ratios which could lower the average value. We are not finalizing this change at this time but intend to review whether or not revisions to this provision should be considered as a part of the CTI rulemaking effort. EPA received no adverse comments on the proposal to allow the use of CARB's OBD reporting template. Using the CARB template will help streamline certification processes and reduce the time manufacturers may spend entering duplicative information on different forms. EPA is finalizing this provision as proposed to help harmonize requirements and streamline the certification process.

EPA is not taking final action at this time on two proposed revisions: (1) To allow CARB certified configurations to not count as separate engines families for the purposes of determining OEM test requirements, and (2) to allow a simplified carryover OBD certification path intended for special engine families. We received comments indicating concern that these proposals were not clear. For example, CARB noted that the proposed regulatory requirements for both carryover certification and for determining required OBD demonstration testing requirements relied on the term ''special engine family'' which is not defined in EPA regulations. EPA intends to review these two issues and other comments received on existing OBD requirements as part of a more comprehensive effort to consider updating our existing OBD regulations in the intended CTI rulemaking.

II. Other Amendments

A. Ethanol-Blend Test Fuels for Nonroad Spark-Ignition Engines and Vehicles, Highway Motorcycles, and Portable Fuel Containers

EPA adopted exhaust and evaporative emission standards for gasoline-fueled nonroad engines, vehicles, and equipment before there was a Federal gasoline test fuel with 10 percent

ethanol (E10). Most of those programs therefore relied on testing with neat gasoline (E0) or with a splash-blended mix of neat gasoline and ethanol to make E10. In the meantime, EPA adopted a Federal gasoline test fuel with 10 percent ethanol for testing motor vehicles (79 FR 23414, April 28, 2014).

California ARB adopted its own specification for an E10 test fuel for testing motor vehicles, referred to as ''LEV III E10.'' California ARB revised its nonroad emission control programs to require manufacturers to start using LEV III E10 test fuel for certification starting in model year 2020, without allowing for carryover of previous data from testing with neat gasoline. California ARB's move to require use of LEV III E10 test fuel for certification has led manufacturers to express a concern about the test burden associated with separate testing to demonstrate compliance with EPA and California ARB emission standards.

The concern for aligning test requirements related to test fuel applies for marine spark-ignition engines (40 CFR part 1045), nonroad spark-ignition engines above 19 kW (40 CFR part 1048), and recreational vehicles (40 CFR part 1051).[26] We expect a similar situation to apply for highway motorcycles in the 2022–2025 time frame based on California ARB's plans for further rulemaking activity.

We have issued guidance for marine spark-ignition engines (40 CFR part 1045)[27] and for recreational vehicles (40 CFR part 1051)[28] describing how we may approve certification based on emission measurements with an E10 test fuel. We are revising 40 CFR parts 1045, 1048, and 1051, consistent with the recently issued guidance documents, to allow for certification based on emission measurements with EPA's E10 test fuel without requiring EPA approval, and without adjusting emission standards to account for fuel effects. For marine spark-ignition engines (40 CFR part 1045), this merely replaces the existing provision allowing for the alternative of using a splash-blended E10 test fuel. For recreational vehicles (40 CFR part 1051) and Large spark-ignition (Large SI) engines (40 CFR part 1048), naming EPA's E10 specification as the alternative test fuel is a new provision. We are not prepared in this rulemaking to justify adopting new emission standards or to otherwise change the stringency of the existing standards. It is therefore necessary for EPA to be able to do confirmatory testing with either the original E0 test fuel, or the manufacturer's selected alternative fuel.

We are also allowing the same approach for certification based on emission measurements with EPA's E10 test fuel for highway motorcycles (including EPA confirmatory testing with either E0 or E10).

We expect this approach of allowing E10 as an alternative test fuel to adequately address concerns for the identified sectors. Many of these engines have closed-loop fuel controls that reduce the effect of fuel variables on exhaust emissions. Many also have relatively large compliance margins relative to the standards that apply. These factors help manufacturers confidently test with E10 as an alternative fuel, knowing that they continue to be liable for meeting emission standards on the specified E0 test fuel.

In the proposed rule we described a process for approving the use of California ARB's LEV III E10 test fuel instead of EPA's E10 test fuel as the alternative test fuel. That process is detailed in the existing regulations at 40 CFR 1065.701(b). The National Marine Manufacturers Association, the Motorcycle Industry Council, and Polaris requested that we revise the regulation to include California ARB's LEV III E10 as an alternative test fuel. The two sets of fuel specifications are nearly identical, with the notable difference being that California ARB's LEV III E10 test fuel has a lower volatility, which corresponds to the fuel regulations that apply in California. For testing hot-stabilized engines, volatility has a very small effect on exhaust emissions.

We are not revising the regulation to specify California ARB's LEV III E10 test fuel as an alternative test fuel. We expect the approval process described in 40 CFR 1065.701(b) to allow for review that will typically result in approval to use the California test fuel. However, we remain concerned that there may be some limited circumstances in which testing with the California fuel may not be appropriate for EPA certification. For example, engine manufacturers might name a Family Emission Limit to earn emission credits with a very narrow compliance margin. In that case, we would want to be able to explore with the manufacturer whether its testing adequately supports the proposed application for certification. As another example, some nonroad sectors include standards and testing requirements for controlling off-cycle emissions. It may be appropriate for the manufacturer to perform some of this off-cycle testing for certification using EPA's E0 or E10 test fuel in addition to testing over specified duty cycles with California ARB's LEV III E10 test fuel. To illustrate this point, we observed from a recent experience exploring potential noncompliance that an engine that has electronic feedback control can have a sensitivity to fuel parameters that is much greater than we would expect based on a simple assessment of combustion chemistry. We also note that the experience of implementing these changes in test fuel requirements will inform our ongoing approach for approving requests. Data supporting the equivalence of EPA and California test fuels would lead us to reduce our concerns for approving requests. In contrast, if we learn that fuel effects are greater than expected, we would review requests more carefully. This more careful review could be limited to a single manufacturer or a single type of engine (or engine technology), or it may apply more broadly.

We specify evaporative emission standards and test procedures for portable fuel containers and nonroad spark-ignition equipment in 40 CFR part 59, subpart F, and 40 CFR part 1060, respectively. The gasoline test fuel is splash-blended E10. California ARB specifies their LEV III gasoline test fuel for the analogous procedures in California, but they allow manufacturers to submit data instead using EPA's specified test fuel. Accordingly, we believe manufacturers do not face the same burden of needing to perform duplicate measurements for the two agencies. We are therefore not changing the EPA test fuel for portable fuel containers.

Commenters largely affirmed the proposed approach for increased flexibility for using E10 test fuels.[29] We understand this approach—allowing testing with E10 testing as an alternative procedure—to be an interim measure. We expect to continue the move toward adopting E10 test fuel specifications, without referencing an E0 test fuel specification, as we consider updating emission standards for each sector over time. When we establish new standards, we would expect to evaluate the stringency of those standards based on

[26] EPA adopted amendments to address these concerns for nonroad spark-ignition engines at or below 19 kW in an earlier rulemaking (80 FR 9114, February 19, 2015).

[27] ''Marine Spark Ignition Engine Certification Testing with California ARB E10 Test Fuel,'' EPA guidance document CD–18–15, December 24, 2018.

[28] ''Off-Highway Recreational Vehicle Certification Testing with California ARB E10 Test Fuel,'' EPA guidance document CD–19–03, April 22, 2019.

[29] See the Response to Comments for detailed input from commenters.

testing with E10 test fuel, which will allow for adopting a singular test fuel.

B. Removing Obsolete CFR Content

EPA first adopted emission standards for light-duty motor vehicles and heavy-duty highway engines in the 1970s. Emission standards for the first categories of nonroad engines started to apply in the 1990s. Each of these programs include emission standards that apply by model year. For most of these programs over time, engines and vehicles were subject to increasingly stringent standards and improved certification and testing requirements. All these standards and regulatory provisions are codified in the Code of Federal Regulations. As time passes, the regulations for past model years become obsolete, but it remains in print until there is a rulemaking change to remove it from print. We are removing large portions of this regulatory content that no longer applies. The following sections describe these changes for different sectors.

Note that Section III.D describes several amendments to emission control programs for motor vehicles in 40 CFR parts 85 and 86. These amendments include several provisions that also remove obsolete regulatory content.

1. Clean Fuel Fleet Standards (40 CFR Part 88)

The Clean Air Act Amendments of 1990 included numerical standards for the Clean Fuel Fleet program that were intended to encourage innovation and reduce emissions for fleets of motor vehicles in certain nonattainment areas as compared to conventionally fueled vehicles available at the time. As originally adopted, those Clean Fuel Fleet standards were substantially more stringent than the standards that applied to vehicles and engines generally.

Now that we have begun implementing Tier 3 standards in 40 CFR part 86, subpart S, the Clean Fuel Fleet standards are either less stringent than or equivalent to the standards that apply to vehicles and engines generally. Because the statute continues to require Clean Fuel Fleet standards for state clean-fuel vehicle programs, we cannot simply remove the Clean Fuel Fleet program from the regulations. Rather, we are implementing the Clean Fuel Fleet standards in 40 CFR part 88 with a compliance option where vehicles and engines certified to current standards under 40 CFR parts 86 and 1036 would be deemed to comply with the Clean Fuel Fleet standards as Ultra Low-Emission Vehicles. Further, the Clean Fuel Fleet program as adopted included labeling requirements for engine and vehicle manufacturers to identify compliant engines and vehicles, and a restriction against including such engines or vehicles when calculating emission credits. Both provisions would also no longer be applicable because of the earlier mentioned increased stringency of standards for engines and vehicles, and under the compliance option we are establishing. Therefore, we are also removing these regulations. This will give clear instructions to vehicle and engine manufacturers as well as states that continue to have Clean Fuel Fleet provisions in their State Implementation Plans or become subject to these requirements in the future under the Clean Air Act (CAA) sections 182(c)(4)(A) and 246(a).

For states with areas that become subject to the clean-fuel vehicle program requirements in the future based on a new designation as an ozone nonattainment area, the required state implementation plan submission for the program or for a substitute measure is due within 42 months after the effective date of an area's nonattainment designation. The clean-fuel vehicle program requirements apply for ozone nonattainment areas with an initial designation as Serious, Severe, or Extreme. For marginal and moderate ozone nonattainment areas that are reclassified as Serious, Severe, or Extreme, the required state implementation plan submission for the program or for a substitute measure is due on the date specified in the EPA rulemaking finalizing the area's reclassification.

The Clean Fuel Fleet program also depends on vehicle classifications that include Zero Emission Vehicles and Inherently Low-Emission Vehicles. We are therefore preserving these defined terms in 40 CFR part 88. Under the new provisions, we will consider as Zero Emission Vehicles all electric vehicles and any vehicle that does not emit NO_X, PM, HC, CO, or formaldehyde (including evaporative emissions). We are simplifying the definition of Inherently Low-Emission Vehicles to mean any certified vehicle that is designed to not vent fuel vapors to the atmosphere.

2. Legacy Nonroad Standards (40 CFR Parts 89 Through 94)

The 1990 amendments to the Clean Air Act authorized EPA to set emission standards for nonroad engines. This led to a series of rulemakings to adopt emission control programs for different nonroad sectors. From 1994 through 1999, EPA adopted these emission control programs in 40 CFR parts 89, 90, 91, 92, and 94 (all part of subchapter C).

Starting in 2002, EPA adopted emission standards for additional nonroad emission control programs in a new subchapter, which allowed for improved organization and harmonization across sectors. We codified these new standards and related provisions in 40 CFR parts 1048, 1051, 1065, and 1068 (all part of subchapter U). Since then, we have migrated the ''legacy'' emission control programs from subchapter C to subchapter U. In each case, the migration corresponded to new emission standards and substantially updated compliance and testing provisions. This applies for the following sectors:

Sector	Legacy regulation	Current regulation
Land-based nonroad diesel engines	40 CFR part 89	40 CFR part 1039.
Nonroad spark-ignition engines at or below 19 kW	40 CFR part 90	40 CFR part 1054.
Marine spark-ignition engines	40 CFR part 91	40 CFR part 1045.
Locomotives and locomotive engines	40 CFR part 92	40 CFR part 1033.
Marine diesel engines	40 CFR part 94	40 CFR part 1042.

As a result of this migration, engine manufacturers have not certified engines under the legacy parts for the last 5–10 years. Removing these legacy parts reduces the cost to the Agency and prevents confusion for readers who think that the old provisions still apply.

While EPA's engine certification programs don't rely on these obsolete provisions, the new programs refer to the legacy parts for some specific provisions. For example, the new standard-setting part for each type of engine/equipment allows manufacturers to continue to certify carryover engine families based on test data from procedures specified in the legacy parts.

We are not discontinuing further use of carryover data from engines originally certified under the legacy parts. On the other hand, this provision will gradually sunset itself as manufacturers update engine designs and perform new testing for their engine families to meet current standards.

Another example of relying on the legacy parts in the new regulations is emission credits generated under the legacy parts. In most cases, current programs either disallow using those credits for certification, or they allow it without keeping separate accounts for credits generated under the legacy parts. We are making no changes where credits from legacy parts are either unavailable or indistinguishable from currently generated credits. One exception is for land-based nonroad diesel engines certified under 40 CFR parts 89 and 1039. Current provisions in § 1039.740 allow for limited use of Tier 2 and Tier 3 credits from part 89 for certifying Tier 4 engines. We are revising § 1039.740, as proposed, to continue to allow manufacturers to use credits generated from Tier 2 and Tier 3 engines by simply changing the relevant references 40 CFR part 89 to 40 CFR part 1039, appendix I.

We are also aware that other Federal and state regulations and compliance programs include numerous references to 40 CFR parts 89 through 94. To address this, we are replacing the full text of regulations in the legacy parts with a paragraph describing the historical scope and purpose for each part. The remaining paragraph also directs readers to the new regulations that apply in subchapter U and clarifies how the regulatory requirements transition to the new content. As an example, the statute and regulations prohibit tampering with certified engines throughout an engine's lifetime, even if the original text describing that prohibition no longer resides in its original location in the Code of Federal Regulations.

We are also including the emission standards from the legacy parts as reference material in an appendix in the appropriate CFR parts. This allows for readily citing the historical standards in our own emission control programs, and in any other Federal or state regulations or compliance materials that depend on citing emission standards that are no longer current for purposes of gaining EPA certification as part of our nonroad emission control program.

In addition to removing references to the legacy parts, we are taking the opportunity to remove additional obsolete content from the newer regulations. Most of these changes were adopted to address temporary concerns as part of transitioning to new standards or other new requirements. We adopted these changes in isolated regulatory sections as ''interim provisions.'' Most of these interim provisions have been obsolete for several years.

References to the legacy parts are especially common for stationary engines EPA regulates under 40 CFR part 60, subparts IIII and JJJJ. The emission standards for stationary engines in many cases rely on current or past nonroad emission standards in 40 CFR parts 89, 90, and 94. Including all the iterations of these emission standards as reference material allows us to preserve the existing set of standards and requirements for stationary engines. This rule includes numerous amendments to 40 CFR part 60 to change regulatory cites from the legacy parts to the new regulatory parts in subchapter U, or to copy referenced text directly into 40 CFR part 60.

Most of the changes for stationary engines in 40 CFR part 60 are intended to update references without changing standards or other provisions. We are making three more substantive changes. First, we are allowing all manufacturers of emergency stationary compression-ignition internal combustion engines and stationary emergency spark-ignition engines to certify using assigned deterioration factors. Since these emergency engines generally serve in standby status in anticipation of emergency situations, they often have lifetime operation that is much less extensive than non-emergency engines. Assigned deterioration factors would allow manufacturers to demonstrate the durability of emission controls without performing testing that might otherwise exceed the operating life of the engines being certified. We are prepared to publish assigned deterioration factors based on currently available information. We may need to revise those values in the future as additional information becomes available, so we are not including specific values for assigned deterioration factors in this rulemaking. We are adopting these provisions as proposed, except that we are referencing the relevant nonroad regulations that apply and we are clarifying that assigned deterioration factors for stationary engines are not limited to small-volume manufacturers.

Second, stationary spark-ignition engines are currently subject to emission standards and certification procedures adopted under 40 CFR part 90 for Phase 1 engines. Revising the requirements for these engines to instead rely on the certification procedures in 40 CFR part 1054 requires that we identify the Phase 1 standards as not including the following provisions that apply for Phase 3 engines (as noted in the amended regulatory text for appendix I of part 1054):

- The useful life and corresponding deterioration factors.
- Evaporative emission standards.
- Altitude adjustments.
- Warranty assurance provisions in § 1054.120(f).
- Emission-related installation instructions.
- Bonding.

Third, in response to a comment from the EMA, we are revising the instruction regarding VOC measurement methods to allow manufacturers to use any method that is specified for highway or nonroad engines in 40 CFR part 1065, subpart C. The current regulation at 40 CFR 60.4241(i) identifies specific measurement procedures. When we revised 40 CFR part 1065 to include fourier transform infrared analyzers as an additional measurement method, it would have been appropriate to modify 40 CFR 60.4241(i) to identify this additional measurement method. We are addressing that in this rule by broadly referencing test methods in 40 CFR part 1065, subpart C, which includes fourier transform infrared analyzers.

In addition, following the proposed rule, we realized that 40 CFR part 89 includes content that is, in fact, not obsolete. Specifically, there is an interpretation of the Clean Air Act regarding the preemption of state regulations related to nonroad engines in 40 CFR part 89, subpart A, appendix A (62 FR 67736, December 30, 1997). This interpretation describes EPA's belief that states may regulate the use and operation of nonroad engines within certain parameters. This final rule preserves appendix A by copying it into 40 CFR part 1074, where we more broadly describe a range of issues related to preemption of state regulation of nonroad engines.

C. Certification Fees (40 CFR Part 1027)

EPA is making several minor changes in 40 CFR part 1027 to update the procedures and align the instructions with current practices. None of these changes involve change or reconsideration of fee policies. We are finalizing the following changes:

- Correcting the name of the compliance program.
- Replacing the schedule of fees from 2005 with the fees that apply for applications submitted in 2020.
- Revising the timeline for announcing adjusted fees for the upcoming year from a January 31

deadline to a March 31 deadline. This will allow for a more orderly process of calculating the new fees using the information from the previous year.

- Correcting the equation for non-evaporative certificates to no longer apply the inflation adjustment to operating costs. This corrects a publishing error that mistakenly introduced parentheses in the equation.
- Correcting the internet address for the consumer price index used for inflation adjustments.
- Removing the sample calculation for determining fees for 2006.
- Revising submission and payment instructions to refer only to electronic forms and transactions through *www.Pay.gov.*
- Clarifying that deficient filings must be resolved before the end of the model year, and that the time limit for requesting refunds applies equally to deficient filings.

We received no comments on the proposed amendments to 40 CFR part 1027 and are adopting these amendments without modification.

D. Additional Amendments for Motor Vehicles and Motor Vehicle Engines (40 CFR Parts 85 and 86)

Motor vehicles and motor vehicle engines are subject to emission standards and certification requirements under 40 CFR part 86. This applies for light-duty vehicles, light-duty trucks, heavy-duty vehicles and engines, and highway motorcycles. There are additional compliance provisions in 40 CFR part 85. We are adopting the following amendments to these provisions:

- *Part 85:* We are amending the provisions for importation, exemptions, and model year to clarify that they no longer apply for heavy-duty engines. Those engines are already subject to analogous provisions under 40 CFR part 1068. While the two sets of provisions are largely the same, we want to avoid the ambiguity of having overlapping requirements. One aspect of this migration involves discontinuing the provisions that apply for Independent Commercial Importers for heavy-duty engines. No one has used these provisions for several years, and we have no reason to believe anyone will start to use these provisions. We are revising the regulatory text for the final rule, based on a comment, to clarify that the importation provisions continue to apply for highway motorcycles, and that references to engines in 40 CFR part 85, subpart P, continue to apply for replacement engines intended for installation in motor vehicles subject to the same importation provisions.
- *Part 85:* We are making several minor corrections to (1) refer to provisions in 40 CFR part 1068 related to confidential business information and hearing procedures, and (2) clarify organization names and addresses for submitting information.
- *Part 85, subpart O:* This subpart set emission standards for 1993 and older model year urban buses undergoing engine rebuilding. We have confirmed with the American Public Transportation Association that there are very few such urban buses still operating, and that none of them will have engine rebuilds. We are therefore removing this content from the CFR.
- *Section 85.1902(b)(2):* We are clarifying that defect-reporting requirements under paragraph (b)(2) apply for defects related to noncompliance with greenhouse gas emission standards, not criteria emission standards. This corrects an earlier amendment that inadvertently described the provisions as applying to noncompliance with any kind of emission standard. Defects related to criteria emission standards are covered by § 85.1902(b)(1).
- *Sections 86.113–04, 86.213, and 86.513:* Adding optional reference procedures for measuring aromatic and olefin content of E0 gasoline test fuel. These changes align with the reference procedures for EPA's Tier 3 E10 gasoline test fuel at 40 CFR 1065.710(b). These changes are needed because material limitations prevent laboratories from using the procedures in ASTM D1319. This change also applies for the E0 gasoline test fuel specified in 40 CFR 1065.710(c),
- *Section 86.129–00:* Revising the description of test weight basis to be loaded vehicle weight for all light-duty vehicles and light-duty trucks. This is a correction to align the regulation with current practice.
- *Section 86.130–96*: We are correcting the reference to a testing flowchart that was moved to 40 CFR 1066.801.
- *Sections 86.401–97 and 86.413–78:* We are removing obsolete sections to prevent confusion.
- *Sections 86.419–2006 and 86.427–78:* We are revising the table with service accumulation parameters to clarify how to perform testing separately for Class I–A and Class I–B, rather than treating them as a single class.
- *Sections 86.435–78 and 86.436–78:* We are correcting references to the regulation to clarify that a motorcycle is compliant if measured test results are at or below the standards.
- *Section 86.531–78:* We are adding instruction to seal exhaust system leaks as needed before testing highway motorcycles. The amendment also applies for testing off-highway motorcycles and all-terrain vehicles under 40 CFR part 1051. This same instruction also applies for light-duty vehicle testing under 40 CFR 1066.110(b)(1)(vi). We made minor wording changes after the proposed rule to clarify that manufacturers need to close all known leaks as part of the effort to prevent exhaust leaks from affecting the compliance demonstration.
- *Part 86, subpart P:* The idle test procedures for spark-ignition engine and vehicles are no longer needed for certification or other compliance demonstrations. We are therefore removing this content from the CFR.
- *Part 86, subpart Q:* Engine technology has advanced to include internal feedback controls and compensation to allow for operation at a wide range of altitudes. The certification requirements related to altitude adjustments are therefore mostly or completely obsolete. We are finalizing a simplified version of the altitude provisions for highway motorcycles at 40 CFR 86.408–78(c) and (d) in case there are some very small motorcycles that require adjustment for altitude.
- *Section 86.1803–01:* We are revising the definition for heavy-duty vehicle, with a conforming revision to the definition for light-duty truck, to clarify that the sole regulatory criterion for whether a complete vehicle is a heavy-duty vehicle for purposes of the regulation is whether its gross vehicle weight rating is above 8,500 pounds. The current approach remains unchanged for incomplete vehicles; that is, heavy-duty vehicles also include incomplete vehicles even if their gross vehicle weight rating is at or below 8,500 pounds, if their curb weight is above 6,000 pounds or if their basic vehicle frontal area is greater than 45 square feet. The revisions are intended to (1) prevent light-duty trucks from becoming heavy-duty vehicles in a configuration involving a hybrid powertrain due to the extra weight related to energy storage and (2) avoid an incentive for manufacturers to add vehicle weight or frontal area simply to avoid the standards that apply for light-duty vehicles. In these cases, under the current definition, the curb weight or frontal area would artificially increase to the point that the vehicle would qualify as a heavy-duty vehicle, even though it otherwise has the characteristics of a light-duty truck. This same change is not necessary for incomplete vehicles because certifying manufacturers have the option to select

the appropriate vehicle classification for those vehicles. Note that the change applies only for future certification; any certified heavy-duty vehicle that would no longer fit the description will not be affected by the amended definition.

- *Section 86.1811–17:* The **Federal Register** mistakenly published a reference to the Tier 3 p.m. standard. Since we intended for the standard to apply at all times, we are amending the regulation to properly refer to that as the Tier 3 p.m. standard.
- *Section 86.1813–01:* We are clarifying that electric vehicles and fuel cell vehicles are not subject to evaporative and refueling emission standards. The preamble to the final rule adopting the light-duty Tier 3 standards stated that these emission standards apply only for volatile fuels, but we did not include a clear statement excluding electric vehicles and fuel cell vehicles in the regulations (79 FR 23514, April 28, 2014).
- *Section 86.1818–12:* We are clarifying that manufacturers calculate the in-use CO2 standard using the appropriate test result for carbon-related exhaust emissions after adjustment with the deterioration factor to account for durability effects. In many cases, the deterioration factor is 0 (additive) or 1 (multiplicative), in which case the deterioration factor does not change the calculated in-use CO2 standard.
- *Section 86.1838–01:* We are restoring text that was inadvertently removed in an earlier amendment. The restored text specifies which mileage provisions from § 86.1845 do not apply for small-volume manufacturers doing in-use verification testing.
- *Section 86.1868:* We are adopting detailed provisions describing how reduced air conditioning test requirements apply for electric vehicles and plug-in hybrid electric vehicles. These provisions are consistent with current practice described in EPA guidance. We specify that plug-in hybrid electric vehicles qualify for relief from AC17 testing, like electric vehicles, if they have an adjusted all electric range of 60 miles or more and they do not need engine power for cabin cooling during vehicle operation represented by the AC17 procedure; in response to a comment on the proposed rule, we have revised the amended regulatory text to clarify that the specified driving range applies for combined city/highway driving. Specifying a 60-mile range is intended to include vehicles for which an owner can typically expect to avoid using the engine for daily commuting, including commutes on a hot summer day. Finally, we are clarifying that manufacturers do not need to make a demonstration to qualify for air conditioning efficiency credits for pure electric vehicles or for plug-in hybrid electric vehicles, provided that those vehicles qualify for waived AC17 testing as described above. This is due to the complexity of quantifying credit quantities in grams CO2 per mile for driving without engine power. We also specify that AC17 testing with plug-in hybrid electric vehicles, if required, always be done in charge-sustaining mode to avoid the confounding effect of intermittent engine operation during the test.

E. Additional Amendments for Locomotives (40 CFR Part 1033)

EPA is updating 40 CFR part 1033 to remove references to specific content in 40 CFR part 92, as described in Section III.B.2. In addition, we are adopting the following minor corrections and changes:

- *Section 1033.150:* Remove the interim provisions that no longer apply. This leaves paragraphs (e) and (k) as the only remaining paragraphs in this section.
- *Section 1033.255:* Clarify that doing anything to make information false or incomplete after submitting an application for certification is the same as submitting false or incomplete information. For example, if there is a change to any corporate information or engine parameters described in the manufacturer's previously submitted application for certification, the manufacturer must amend the application to include the new information. Amendments include additional minor changes to align regulatory text across programs.
- *Section 1033.601*: Correct references to specific provisions in 40 CFR part 1068.
- *Section 1033.701*: Correct a paragraph reference.
- *Section 1033.740:* Remove the reference to part 92 because the emission credit provisions of part 92 are being removed from the CFR. We are replacing the reference to emission credits from part 92 with the equivalent statement saying that manufacturers may continue to use emission credits from locomotives certified in 2008 and earlier model years. EPA's recordkeeping will not identify credits as being from either part 92 or 1033. Any credits generated under part 92 will continue to be available for certifying locomotives under part 1033.
- *Section 1033.901*: Name the date, January 1, 2000, that marked the start of the original locomotive emission standards, rather than describing the date with reference to publication of the original final rule and its effective date (18978 FR 63, April 16, 1998).
- *Section 1033.925*: Removing text in paragraph (e) that is already in paragraph (b) of the same section.

F. Additional Amendments for Land-Based Nonroad Diesel Engines (40 CFR Part 1039)

EPA's emission standards and certification requirements for land-based nonroad compression-ignition (CI) engines are identified in 40 CFR part 1039. We refer to these as Nonroad CI engines. Several changes to 40 CFR part 1039 that apply broadly are described above. Specifically, Section III.B.2 describes how we are removing regulatory content related to the Tier 1, Tier 2, and Tier 3 standards originally adopted in 40 CFR part 89. We are accordingly amending 40 CFR part 1039 to remove references to 40 CFR part 89 that no longer apply.

This section describes additional amendments for EPA's Nonroad CI program:

- *Section 1039.20:* Remove the option to use a branded name instead of the engine manufacturer's corporate name for uncertified stationary engines. Since these engines are not certified, there is no way for EPA to document any relationship between the engine manufacturer and the branded company. We also are not aware of anyone using this provision.
- *Section 1039.20:* Revise the label statement for stationary engines covered by § 1039.20 to avoid references to specific parts of the CFR. This is intended to prevent confusion. We can approve continued use of labels with the older previous statement under the provisions of § 1039.135(f). This may be needed, for example, if manufacturers have remaining labels in their inventory.
- *Section 1039.101:* Add a table entry to clarify how standards apply for engines with maximum engine power above 560 kW. The current rendering in the Code of Federal Regulations can be misleading.
- *Section 1039.102:* Correct the heading of Table 6 to include engines at or below 560 kW. The table was published in a way that inadvertently excluded 560 kW engines.
- *Section 1039.135:* Discontinue the equipment labeling requirement to state that engines must be refueled with ultra low-sulfur diesel fuel (ULSD). Since in-use diesel fuel for these engines must universally meet ULSD requirements, there is no longer a benefit to including this label information.
- *Section 1039.205:* Add text to clarify how engine manufacturers

should identify information in the application for certification related to engine diagnostic systems that are required under § 1039.110.

- *Section 1039.255:* Clarify that doing anything to make information false or incomplete after submitting an application for certification is the same as submitting false or incomplete information. For example, if there is a change to any corporate information or engine parameters described in the manufacturer's previously submitted application for certification, the manufacturer must amend the application to include the new information. Amendments include additional minor changes to align regulatory text across programs.
- *Section 1039.740:* Remove the reference to emission credits from part 89. There is no need for this since the records related to credit accounting do not identify credits as being from part 89 or 1039.
- *Section 1039.801:* Revise the definition of ''low-hour'' to state that engines with NO_X aftertreatment should qualify as ''low-hour'' up to 300 hours, with other engines qualifying as ''low-hour'' up to only 125 hours. This is intended to ensure that engines tested to establish the low-hour emission result for an engine family are properly represented as new engines that have not started to experience deterioration of emission controls. In line with the comments from EMA, we understand the longer stabilization period to be appropriate for engines with NO_X aftertreatment. In contrast, engines without NO_X aftertreatment reach a point of stabilized emission levels much sooner, which supports the shorter duration for low-hour testing before starting service accumulation. This does not preclude continued testing beyond 125 hours for engines without NO_X aftertreatment, but it would prevent manufacturers from planning test programs that extend well beyond 125 hours. This is similar to provisions that already apply for marine diesel engines under 40 CFR part 1042; however, we are also adjusting the definition of ''low-hour'' for marine diesel engines to reference NO_X aftertreatment instead of a power cutoff.
- *Section 1039.801:* Revise the definition of ''small-volume engine manufacturer'' to remove the requirement to have certified engines in the United States before 2003. This limitation was related to the transition to meeting the Tier 4 standards. Now that those phase-in provisions have expired, the remaining provisions relate to reporting CH_4 and N_2O emissions and using assigned deterioration factors. We believe these provisions can reasonably be applied to start-up small businesses meeting the Tier 4 standards.

G. Additional Amendments for Marine Diesel Engines (40 CFR Parts 1042 and 1043)

EPA's emission standards and certification requirements for marine diesel engines under the Clean Air Act are set out in 40 CFR part 1042. Emission standards and related fuel requirements that apply internationally are set out in 40 CFR part 1043.

Several changes to 40 CFR part 1042 that apply more broadly are described above. Specifically, Section III.B.2 describes how we are removing regulatory content related to the Tier 1 and Tier 2 standards originally adopted in 40 CFR part 94. We are accordingly amending 40 CFR part 1042 to remove references to 40 CFR part 94 that no longer apply.

This section describes additional amendments for our marine diesel engine program.

1. Marine Replacement Engine Exemption

We are adopting several adjustments to the replacement engine exemption in § 1042.615.

a. EPA's Advance Determination for Tier 4 Marine Replacement Engines

The proposed rule described that we were intending to clarify the regulatory determination that applies for cases involving new replacement engines that are normally subject to Tier 4 standards (see § 1042.615(a)(1)). In the 2008 final rule to adopt the Tier 4 standards, we finalized a determination ''that Tier 4 engines equipped with aftertreatment technology to control either NO_X or PM are not required for use as replacement engines for engines from previous tiers in accordance with this regulatory replacement engine provision.'' The preamble to that final rule made it clear that the determination was limited to ''Tier 4 marine diesel replacement engines that comply with the Tier 4 standards through the use of catalytic aftertreatment systems.'' (73 FR 37157) However, that limitation was not copied into the regulatory text. The development involving Tier 4 engines that rely on exhaust gas recirculation (EGR) instead of aftertreatment led us to revisit the discrepancy from the 2008 rule. The 2008 rule also stated that ''[s]hould an engine manufacturer develop a Tier 4 compliant engine solution that does not require the use of such technology, then this automatic determination will not apply.''

EMA and the California Air Resources Board (CARB) both commented on the proposed change to the replacement engine exemption in § 1042.615(a)(1). EMA's comment suggested that we should leave the regulatory text in § 1042.615(a)(1) unchanged from what we adopted in 2008. CARB suggested that we entirely abandon the advance determination that Tier 4 engines are not suitable as replacements for earlier engines, regardless of aftertreatment, which would require a case-by-case engineering analysis in all cases to demonstrate that an exemption is appropriate.

As we explained in the 2008 rulemaking, an engine manufacturer is generally prohibited from selling a marine engine that does not meet the standards that are in effect when that engine is produced. However, we recognized that there may be situations in which a vessel owner may require an engine certified to an earlier tier of standards, including (1) when a vessel has been designed to use a particular engine such that it cannot physically accommodate a different engine due to size or weight constraints (*e.g.*, a new engine model will not fit into the existing engine compartment); or (2) when the engine is matched to key vessel components such as the propeller, or when a vessel has a pair of engines that must be matched for the vessel to function properly. Our 2008 rule allows the engine manufacturer to make the relevant determinations, but we adopted a provision that requires the engine manufacturer to consider all previous tiers and use any of their own engine models from the most recent tier that meets the vessel's physical and performance requirements. If an engine manufacturer produces an engine that meets a previous tier of standards representing better control of emissions than that of the engine being replaced, the manufacturer would need to supply the engine meeting the tier of standards with the lowest emission levels.

At that time, we made an advance determination that Tier 4 engines would not be required as replacement engines for previous tier engines. As we explained in Section IV.C.2 of the final rule preamble, we expected that installing such a Tier 4 engine in a vessel that was originally designed and built with a previous tier engine could require extensive vessel modifications (*e.g.*, addition of a urea tank and associated plumbing; extra room for a SCR or PM filter; additional control equipment) that may affect important vessel characteristics such as vessel stability. We stated that we were not implying Tier 4 engines would never be

appropriate as replacements for engines from previous tiers; rather, the determination was intended to simplify the search across engines and was based on the presumption that Tier 4 engines would not fit in most cases. We also stated that the advance determination was made solely for Tier 4 marine diesel replacement engines that comply with the Tier 4 standards through the use of catalytic aftertreatment systems. We stated: ''Should an engine manufacturer develop a Tier 4 compliant engine solution that does not require the use of such technology, then this automatic determination will not apply. Instead our existing provision will apply and it would be necessary to show that a non-catalytic Tier 4 engine would not meet the required physical or performance needs of the vessel.''

We were also not intending to prevent states or local entities from including Tier 4 engines in incentive programs that encourage vessel owners to replace existing previous tier engines with new Tier 4 engines or to retrofit control technologies on existing engines, since those incentive programs often are designed to offset some of the costs of installing or using advanced emission control technology solutions. However, on a national basis, we continue to believe our original approach described in the 2008 final rule is appropriate. The characteristics of the national fleet are likely different from the fleet of vessels affected in California; taking away the Tier 4 determination should not be made lightly or without a thorough understanding of the impact on existing boats. It would therefore be appropriate for us to include the advance determination that Tier 4 engines with aftertreatment are not suitable as replacement for earlier engines. In particular, we stand by our 2008 assessment that it is appropriate to automatically consider SCR-equipped engines to not have ''the appropriate physical or performance characteristics to repower'' pre-Tier 4 vessels, which in turn qualifies the repower for an exempt replacement engine.

EMA objected to the proposed clarification to apply the advance determination only for engines that meet Tier 4 standards with aftertreatment. The EMA comment suggests that the same presumption and regulatory burden should apply for EGR-equipped engines because compliant engines with EGR instead of aftertreatment also necessarily involve significant costs and vessel redesigns. EGR-equipped engines use exhaust gas recirculation (EGR) instead of SCR to control NO_X emissions. Engines with EGR include additional hardware to manage airflow in and through the engine, and to manage wastewater.

Revising the regulation to make clear that the advance determination was not intended to include EGR-equipped engines from the advance determination is in fact a very minor change in policy. Engine manufacturers may still qualify for the replacement engine exemption based on a showing that an EGR-equipped engine does not have ''the appropriate physical or performance characteristics to repower the vessel.'' However, there are two reasons to believe that EGR-equipped engines may be suitable for repower. First, all EGR-equipped Tier 4 engines are locomotive-sized Category 2 engines. Vessels with Category 2 engines generally have engine compartments that have room for additional hardware and other componentry. Second, the additional hardware for EGR-equipped engines would generally involve a greater design effort than upgrading to a Tier 3 engine, but this kind of change would often fit within the scope of vessel repower projects. Vessel owners would also need to follow new protocols for maintaining the engines and dealing with wastewater and other technical issues. None of these challenges create any inherent conflict with installing the Tier 4 engines to replace earlier engines.

These factors together support a policy in which an EGR-equipped engine can be considered unsuitable for repower based on its physical or performance characteristics, but this conclusion should not be presumed. We would accomplish that policy objective by revising § 1042.615(a)(1) as proposed.

b. Other Amendments Related to Marine Replacement Engines

We are modifying the requirement that engine manufacturers notify EPA after shipping exempt replacement engines. As originally adopted, § 1042.615(a) requires an engine manufacturer to send EPA notification 30 days after shipping an exempt engine to demonstrate that the selected engine was the cleanest available for the given installation. We indicated that ''[t]hese records will be used by EPA to evaluate whether engine manufacturers are properly making the feasibility determination and applying the replacement engine provisions.'' We also indicated that we expected engine manufacturers to examine ''not just engine dimensions and weight but other pertinent vessel characteristics such as drive shafts, reduction gears, cooling systems, exhaust and ventilation systems, and propeller shafts; electrical systems; . . . and such other ancillary systems and vessel equipment that would affect the choice of an engine.'' While engine manufacturers have submitted these reports, the information provided has not supported our original objective. Specifically, the reports vary widely in information provided but in many instances are too case-specific. Therefore, we are requiring manufacturers to submit a single annual report that is due at the same time as the general requirement for reporting on replacement engines under 40 CFR 1068.240. The annual report would include the information described in our 2008 rule for all the affected engines and vessels. This change would provide a predictable schedule for EPA to review the submitted information. This would also allow EPA to standardize the format and substance of the reported information. Manufacturers would benefit from submitting a consistent set of information in an annual submission for all their replacement engine information.

We are revising the regulatory instructions for submitting replacement engine reports under § 1042.615. The replacement engine exemption applies only for engines that are shipped to boat owners or are otherwise designated for a specific vessel. Engine manufacturers may produce and ship exempt replacement engines (with per-cylinder displacement up to 7 liters) without making the specified demonstrations, as allowed under 40 CFR 1068.240(c), but manufacturers may produce only a limited number of those ''untracked'' engines in a given year. Those untracked replacement engines are covered by the reporting requirements that apply under § 1068.240 since the tracked exemption under §§ 1042.615 and 1068.240(b) does not allow for shipping engines to distributors without identifying a specific installation and making the necessary demonstrations for that installation. We are taking a streamlined approach for reporting related to Tier 3 engines since the demonstration for those engines consists of affirming EPA's regulatory determination that no suitable Tier 4 engines (without aftertreatment) are available for replacement. We do not expect engines with per-cylinder engine displacement below 7 liters to be able to meet Tier 4 standards without aftertreatment devices. As a result, Tier 3 replacement engines are limited only in that they may not be used to replace engines that were certified to Tier 4 standards.

Finally, we are clarifying that the determination related to Tier 4 replacement engines applies differently for engines that become new based on vessel modifications. Under the

definition of ''new vessel'' in § 1042.901, modification of an existing vessel may cause the vessel to become ''new'' if the vessel modifications cause the vessel's assessed value to at least double. In this case, all engines installed on the vessel are subject to standards for the model year based on the date of vessel modifications. Since the effective dates of the Tier 4 standards, we have learned that there may be circumstances in which vessel modifications may be substantial enough to qualify a vessel as ''new,'' but the installation of new Tier 4 engines may not be practical or feasible without cost-prohibitive additional vessel modifications. For example, a commercial vessel owner may want to substantially upgrade an older vessel, including engine replacement with a much lower-emitting engine. If the upgrade doubles the assessed value of the vessel, this would trigger a need for all installed or replacement engines above 600 kW to be certified to Tier 4 standards. We have learned that such a project may become cost-prohibitive based on the additional vessel modifications needed to accommodate the Tier 4 engine, which could cause the vessel to continue operating in the higher-emitting configuration. To address this scenario, we are allowing the replacement engine exemption for certain vessels that become new because of modifications, subject to a set of conditions. Specifically, the exemption would apply only with EPA's advance approval based on a demonstration that the installation of a Tier 4 engine would require significant vessel redesign that is infeasible or impractical. EPA's assessment may account for the extent of the modifications already planned for the project. EPA may approve installation of Tier 3 engines instead of Tier 4 engines for qualifying vessels. Recreational engines and commercial engines below 600 kW are not subject to Tier 4 standards. As a result, if a vessel becomes new through modification, it should be reasonable to expect such new engines to be certified to Tier 3 standards rather than being eligible for the replacement engine exemption.

2. Provisions Related to On-Off Controls for Marine Engines

EPA adopted the current set of emissions standards for Category 3 marine diesel engines in 2010 (75 FR 22932; April 30, 2010). The Tier 3 standards include provisions allowing engine manufacturers to design their engines with control systems that allow an engine to meet the Tier 3 standards while operating in U.S. waters, including the North American Emission Control Area and the U.S. Caribbean Sea Emission Control Area (ECAs), and the less stringent Tier 2 standards while operating outside of U.S. waters. We refer to this design strategy as ''on-off control.'' These provisions reflect the geographic nature of the NO_X engine standards contained in Regulation 13, MARPOL Annex VI.

Engine manufacturers have raised questions about the meaning of the regulatory provision at § 1042.101 that requires Category 3 engines to ''comply fully with the Tier 2 standards when the Tier 3 emission controls are disabled.'' This was intended to incorporate the ''on-off controls'' allowed under MARPOL Annex VI for the IMO Tier III NO_X limits. The HC and CO standards for Category 3 engines apply equally for EPA's Tier 2 and Tier 3 standards adopted under the Clean Air Act, so there should be no question that those standards apply even if NO_X controls are disabled. While 40 CFR 1042.104 includes a PM requirement, it is a reporting requirement only. The only other ''standard'' for Category 3 engines in 40 CFR part 1042 is the requirement related to mode caps in § 1042.104(c). The mode caps serve as separate emission standards for each test point in the duty cycle used for certifying the engines. The 2010 final rule describes how the mode caps are necessary for proper implementation of the Tier 3 standards for SCR-equipped engines (75 FR 22932). Since Category 3 engines with SCR systems would generally comply with the Tier 2 NO_X standard in the ''disabled'' configuration without SCR, we believe there would be no benefit to applying the mode caps as a part of the Tier 2 configuration for these Tier 3 engines with on-off controls. We are therefore clarifying that the mode caps are associated only with the Tier 3 NO_X standards. This approach is consistent with the on-off control provisions adopted under MARPOL Annex VI.

The regulation also allows for on-off controls for NO_X for auxiliary engines used on vessels powered by Category 3 engines. More broadly, § 1402.650(d) allows those auxiliary engines to be certified to MARPOL Annex VI standards instead of being certified to EPA's emission standards under 40 CFR part 1042. The regulation as originally written describes how these engines must comply with EPA's Tier 3 and Tier 4 standards in the same way that Category 3 engines must comply with EPA's Tier 2 and Tier 3 standards. However, since auxiliary engines installed on Category 3 vessels are certified to MARPOL Annex VI standards instead of EPA's emission standards, the regulation should describe how these auxiliary engines must meet the IMO Tier II and IMO Tier III NO_X standards to comply with the on-off control provisions under § 1042.115(g). These requirements related to the Engine International Air Pollution Prevention (EIAPP) certificates for engines with on-off controls are addressed under MARPOL Annex VI and 40 CFR part 1043.

3. Miscellaneous Marine Diesel Amendments

EPA is making several additional changes across 40 CFR part 1042 to correct errors, to add clarification, and to make adjustments based on lessons learned from implementing these regulatory provisions. Specifically, the final rule includes the following amendments:

- *Section 1042.101:* Revise the instruction for specifying a longer useful life. The regulation as originally adopted states that engine design, advertising, and marketing may equally serve as the basis for establishing a longer useful life. We would not expect manufacturers to specify a longer useful life based only on advertising and marketing claims. The amendment emphasizes that design life is the basis for specifying a longer useful life, with the further explanation that the recommended overhaul interval can be understood, together with advertising and marketing materials and other relevant factors, to properly represent an engine's design life.
- *Section 1042.101:* The **Federal Register** mistakenly published references to Tier 3 p.m. standards and Tier 4 p.m. standards. Since we intended for those standards to apply at all times, we are amending the regulation to properly refer to those as Tier 3 p.m. standards and Tier 4 p.m. standards.
- *Section 1042.115:* Revise the provision related to on-off controls to clarify that we have designated NO_X Emission Control Areas (ECAs) for U.S. waters. We no longer need to reference a possible future ECA. We will rely on the U.S. ECA boundaries to establish the area in which engines with on-off controls for aftertreatment-based standards need to be fully operational.
- *Section 1042.125:* Add maintenance requirements for fuel-water separator cartridges or elements as an additional example of maintenance that is not emission-related. This aligns with the maintenance specifications for land-based nonroad diesel engines in 40 CFR part 1039.
- *Section 1042.135:* Revise the labeling instruction for engines installed

in domestic-only vessels to clarify that it applies only for engines above 130 kW, and that it applies equally for commercial and recreational vessels. These changes both align the EPA regulations to more closely align with the international standards under MARPOL Annex VI.

- *Section 1042.145*: Remove obsolete paragraphs. We proposed to revise § 1042.145(j) to adjust the provision related to using certified land-based engines in marine vessels; however, we are reconsidering those changes and may again pursue such further amendments to those provisions.
- *Section 1042.255:* Clarify that doing anything to make information false or incomplete after submitting an application for certification is the same as submitting false or incomplete information. For example, if there is a change to any corporate information or engine parameters described in the manufacturer's previously submitted application for certification, the manufacturer must amend the application to include the new information. Amendments include additional minor changes to align regulatory text across programs.
- *Section 1042.302:* For emission testing during sea trials for Category 3 engines with on-off controls, allow manufacturers the flexibility to omit testing in Tier 2 mode if they do not need aftertreatment to meet the Tier 2 standards. We are most interested in compliance with the Tier 3 standards, since those controls are active anytime vessels are operating within ECA boundaries. System design and calibration with aftertreatment involves greater uncertainty than engines that comply using only in-cylinder controls. As a result, we believe the compliance demonstration for Tier 2 mode adds value only if it involves aftertreatment.
- *Section 1042.650:* Revise the introductory text to clarify that paragraphs (a) through (c) continue to apply only for Category 1 and Category 2 engines, and that the provisions related to auxiliary engines on Category 3 vessels in paragraph (d) apply equally for Category 3 auxiliary engines. By adding paragraph (d) with limitation described in the section's introductory text, we inadvertently excluded Category 3 auxiliary engines.
- *Section 1042.655:* Clarify that measuring engine-out emissions for engines that use exhaust aftertreatment must account for the backpressure and other effects associated with the aftertreatment devices. While improving the alignment between measured results and modeled results, this change also has the effect of removing the expectation that engine-out (pre-catalyst) emissions must meet Tier 2 standards; this is intended to address the case in which an engine may meet the Tier 2 standards with a different SCR dosing strategy rather than by completely disabling the SCR system.
- *Section 1042.701:* Remove the reference to emission credits from part 94. This reference is not needed since the records related to credit accounting do not identify credits as being from part 94 or 1042.
- *Section 1042.801:* Remove the requirement to register fuels used to certify remanufacturing systems. EPA does not register fuels such as natural gas or liquefied petroleum gas, so it is not appropriate to impose such a registration requirement. The requirement continues to apply for remanufacturing systems that are based on diesel fuel additives.
- *Section 1042.901:* Revise the definition of ''low-hour'' to state that engines with NO_X aftertreatment should qualify as ''low-hour'' up to 300 hours, with other engines qualifying as ''low-hour'' up to only 125 hours. This change shortens the low-hour testing period for recreational engines above 560 kW, and for commercial engines with maximum engine power between 560 and 600 kW. This change is intended to ensure that low-hour engine testing are properly represented as new engines that have not started to experience deterioration of emission controls. Engines with NO_X aftertreatment need extra time to achieve stabilized emission rates. In contrast, engines without NO_X aftertreatment reach a point of stabilized emission levels much sooner, which supports the shorter duration for low-hour testing before starting service accumulation. This does not preclude continued testing beyond 125 hours for engines without NO_X aftertreatment, but it would prevent manufacturers from planning test programs that extend well beyond 125 hours. We requested comment on this approach in the proposed rule, and EMA submitted comments supporting this adjustment.
- *Section 1043.41:* Clarify that engine manufacturers may continue to produce new engines under an established EIAPP certificate after a change in emission standards for purposes other than installation in a new vessel. For example, manufacturers may need to produce engines certified to IMO Tier II NO_X standards after 2016 for installation as replacement engines in vessels built before 2016.
- *Sections 1042.910 and 1043.100:* Incorporate by reference the 2017 edition of MARPOL Annex VI and the NO_X Technical Code, dated 2017, which contains all amendments through 2016.

H. Portable Fuel Containers (40 CFR Part 59)

EPA's emission standards and certification requirements for portable fuel containers are described in 40 CFR part 59. Section III.A describes an amendment related to test fuel specifications. In addition, we are adopting the following amendments:

- *Section 59.626:* Correct the reference to additional testing to recognize that the manufacturer may need to test multiple containers.
- *Section 59.628:* Align recordkeeping specifications with the provisions that apply for nonroad engines and equipment. This removes the ambiguity from applying specifications differently for different types of testing information. As noted in Section III.J, now that test records are stored electronically, there is no reason to differentiate testing information into routine and non-routine records.
- *Section 59.650:* Revise the blending instruction to specify a lower level of precision; specifying a range of 10.0 ± 1.0 percent, which is consistent with the approach we take in 40 CFR 1060.515 and 1060.520.
- *Section 59.653:* Correct the pressure specification for durability testing. The amendment adjusts the kPa value to match the psi value in the regulation. This aligns with the pressure testing specified for nonroad fuel tanks.
- *Section 59.653:* Clarify that the fuel fill level needs to stay at 40 percent full throughout slosh testing. The container should be closed for the duration of the test, so this clarification is mainly intended to ensure that the fuel tank does not leak during the test.
- *Section 59.660*: Revise the test exemption to clarify that anyone subject to regulatory prohibitions may ask for a testing exemption.
- *Section 59.664:* Correct the web address for U.S. Department of Treasury Circular 570.
- *Section 59.680:* Clarify how the definition of ''portable fuel container'' applies for different colors. The regulatory text states that red, yellow, and blue utility jugs qualify as portable fuel containers regardless of any contrary labeling or marketing. This is intended to prevent circumvention of emission standards with containers that would be commonly recognized as portable fuel containers. Containers that are not red, yellow, or blue qualify as fuel containers if they meet the criteria described in the definition. The amendment to clarify this point does not represent a change in policy. For

example, anyone who sold uncertified purple portable fuel containers that were subject to standards may be in violation of the prohibitions in 40 CFR 59.602.

We received no adverse comments on the proposed amendments to 40 CFR part 59 and are adopting these amendments without modification.

I. Evaporative Emission Standards for Nonroad Spark-Ignition Engines and Equipment (40 CFR Part 1060)

EPA adopted evaporative emission standards and test procedures in 40 CFR part 1060. Section III.A describes amendments related to test fuel specifications. EPA is also adopting numerous changes across 40 CFR part 1060 to correct errors, to add clarification, and to make adjustments based on lessons learned from implementing these regulatory provisions. This includes the following changes:

- *Sections 1060.1 and 1060.801:* Clarify how standards apply for portable nonroad fuel tanks.
- *Sections 1060.30 and 1060.825:* Consolidate information-collection provisions into a single section.
- *Section 1060.104:* Clarify that any approval from California ARB is sufficient for demonstrating compliance with running loss standards, rather than limiting this to approved Executive orders.
- *Section 1060.105:* Clarify the requirement for tanks to be sealed to recognize the exception allowed under the regulation.
- *Sections 1060.105 and 1060.240:* Allow manufacturers more generally to exercise the alternative of using procedures adopted by California ARB. This is necessary to allow testing with the E10 test fuel adopted by California ARB after the 2004 version of its regulation that is currently referenced in the Code of Federal Regulations.
- *Section 1060.120:* Update the terminology to refer to ''the date the equipment is sold to the ultimate purchaser'' instead of the ''point of first retail sale.'' We also don't want to prohibit manufacturers from including components in the warranty if they fail without increasing evaporative emissions. These changes align with similar amendments in our other programs.
- *Section 1060.130:* Clarify how manufacturers must identify limitations on the types of equipment covered by the application for certification, especially for fuel caps. We allow equipment manufacturers to certify their equipment using widely varying approaches for fuel caps. The equipment manufacturer's certification and testing method needs to be reflected in their instructions for anyone completing assembly of equipment from that equipment manufacturer.
- *Section 1060.135:* Clarify how the equipment labeling provisions apply for engine manufacturers, and clarify that manufacturers need to apply labels at the time of manufacture. In many cases, the labeling is integral to the production process, such as for molded fuel tanks.
- *Section 1060.135:* Allow for permanently identifying the date of manufacture somewhere other than the emission control information label using any method (not only stamping or engraving) and require that the manufacturer describe in the application for certification where the equipment identifies the date of manufacture.
- *Section 1060.135:* We proposed to revise paragraph (b)(5) to simplify the equipment labeling options; however, we decided to defer action on this change in this rulemaking. This leaves the regulatory text unchanged, which allows all the existing labeling options available for manufacturers. We may consider amending these labeling provisions in a future rulemaking.
- *Section 1060.137:* Clarify when and how to label fuel caps. This depends only on whether the fuel cap is certified, not on whether the fuel cap is mounted directly on the fuel tank. It is also important to include the part number on the fuel cap if the equipment is designed with a pressurized fuel tank.
- *Section 1060.205:* Clarify that the application for certification needs to identify the EPA-issued emission family name if the certified configuration relies on one or more certified components.
- *Section 1060.205:* Replace the requirement to submit data from invalid tests with a requirement to simply notify EPA in the application for certification if a test was invalidated.
- *Section 1060.225:* Clarify how manufacturers may amend the application for certification during and after the model year, consistent with the current policy regarding field fixes.
- *Section 1060.235:* Clarify that we can direct manufacturers to send test products to EPA for confirmatory testing, or to a different lab that we specify.
- *Section 1060.235:* Add an explicit allowance for carryover engine families to include the same kind of within-family running changes that are currently allowed over the course of a model year. The original text may have been understood to require that such running changes be made separate from certifying the engine family for the new model year.
- *Section 1060.250:* Remove references to routine and standard tests and remove the shorter recordkeeping requirement for routine data (or data from routine tests). We are adopting an amendment to require that all test records must be kept for eight years. With electronic recording of test data, there should be no advantage to keeping the shorter recordkeeping requirement for a subset of test data. EPA also notes that the eight-year period restarts with certification for a new model year if the manufacturer uses carryover data.
- *Section 1060.255:* Clarify that doing anything to make information false or incomplete after submitting an application for certification is the same as submitting false or incomplete information. For example, if there is a change to any corporate information or parameters described in the manufacturer's previously submitted application for certification, the manufacturer must amend the application to include the new information. Amendments include additional minor changes to align regulatory text across programs.
- *Section 1060.505:* Revise the provision describing alternative test procedures to align with parallel text in 40 CFR 1065.10(c). It is important to note that approved alternative procedures increase flexibility for certifying manufacturers without limiting available methods for EPA testing.
- *Section 1060.520:* For slosh testing and for the preconditioning fuel soak, specify that the fuel fill level should not decrease during testing, other than what would occur from permeation and from any appropriate testing steps to perform durability tests during the preconditioning fuel soak. We also specify that leaking fuel tanks are never suitable for testing, even if there is a potential to repair the leak.
- *Section 1060.601:* Remove the reference to fuel caps since there is no need for a separate description about how the regulatory prohibitions apply for fuel caps. As noted in § 1061.1(c), fuel cap manufacturers that choose to certify their fuel caps under 40 CFR part 1060 become subject to all the requirements associated with certification.
- *Section 1060.610:* Adopt provisions clarifying how manufacturers can ship products that are not yet certified if that is needed for completing assembly at multiple locations, including shipment between companies and shipment between two facilities from a single company. These provisions are

analogous to the provisions that apply for engines in 40 CFR 1068.260.

- *Section 1060.640:* Migrate engine branding to 40 CFR 1068.45.
- *Section 1060.801:* Update the contact information for the Designated Compliance Officer.
- *Section 1060.801:* Revise the definition of ''model year'' to clarify that the calendar year relates to the time that engines are produced under a certificate of conformity.
- *Section 1060.801:* Revise the definition of ''placed into service'' to prevent circumvention that may result from a manufacturer or dealer using a piece of equipment in a way that could otherwise cause it to no longer be new and subject to the prohibitions of 40 CFR 1068.101.
- *Section 1060.81:* Correct the web address for the American Boat and Yacht Council.
- *Section 1060.815:* Migrate provisions related to confidential business information to 40 CFR part 1068.

J. Additional Amendments for Nonroad Spark-Ignition Engines at or Below 19 kW (40 CFR Part 1054)

EPA's emission standards and certification requirements for nonroad spark-ignition engines at or below 19 kW are described in 40 CFR part 1054. EPA is adopting numerous changes across 40 CFR part 1054 to correct errors, to add clarification, and to make adjustments based on lessons learned from implementing these regulatory provisions. This includes the following changes:

- *Section 1054.1:* Clarify that the provision allowing for voluntary certification under 40 CFR part 1054 for larger engines applies only for engines up to 30 kW and up to 1,000 cubic centimeters.
- *Section 1054.2:* Add a clarifying note to say that a person or other entity other than a conventional ''manufacturer'' may need to certify engines that become new after being placed into service (such as engines converted from highway or stationary use). This is intended to address an assumption that only conventional manufacturers can certify engines.
- *Sections 1054.30, 1054.730, and 1054.825:* Consolidate information-collection provisions into a single section.
- *Section 1054.120:* Clarify that extended-warranty requirements apply for the emission-related warranty only to the extent that warranties are actually provided to the consumer, rather than to any published warranties that are offered. The principles are that the emission-related warranty should not be less effective for emission-related items than for items that are not emission-related, and that the emission-related warranty for a given component should not be less effective than the basic mechanical warranty for that same component.
- *Section 1054.125:* Allow for special maintenance procedures that address low-use engines. For example, operators in certain circumstances may perform engine maintenance after a smaller number of hours than would otherwise apply.
- *Section 1054.130:* Remove references to ''nonroad'' equipment to accommodate regulations for stationary engines in 40 CFR part 60, subpart JJJJ, that rely on these same provisions.
- *Section 1054.135:* Allow for including optional label content only if this does not cause the manufacturer to omit other information based on limited availability of space on the label.
- *Section 1054.145:* Remove obsolete content. Most of the provisions in this section were needed only for the transition to the Phase 3 standards. We are also clarifying that the provision that allows for testing with California Phase 2 test fuel applies only through model year 2019. California ARB requires testing with its Phase 3 test fuel starting in model year 2020.
- *Section 1054.205:* Replace the requirement to submit data from invalid tests with a requirement to simply notify EPA in the application for certification if a test was invalidated.
- *Section 1054.205:* Specify that the application for certification needs to include estimated initial and final dates for producing engines for the model year, and an estimated date for the initial introduction into U.S. commerce. This information helps with managing information in the application and overseeing testing and other compliance requirements. This amendment aligns with current practice.
- *Section 1054.225:* Simplify the instruction on changing the Family Emission Limit during the model year to specify that the manufacturer must identify the date of the change based only on the month and year. This change aligns with current practice for amending applications for certification.
- *Section 1054.225:* Clarify how manufacturers may amend the application for certification during and after the model year, consistent with the current policy regarding field fixes.
- *Section 1054.235:* Clarify that air-fuel ratio and other adjustable parameters are part of the selection of a worst-case test configuration for emission-data engines. If an engine has rich and lean settings, the manufacturer should determine which is the worst-case setting for emission measurements to determine deterioration factors. In particular, it is not appropriate to combine results from different settings to calculate any kind of average or composite value. Service accumulation between emission measurements may include any representative combination of those settings.
- *Section 1054.235:* Add an explicit allowance for carryover engine families to include the same kind of within-family running changes that are currently allowed over the course of a model year. The original text may have been understood to require that such running changes be made separate from certifying the engine family for the new model year.
- *Section 1054.235:* Clarify how EPA will calibrate engines within normal production tolerances for things that are not adjustable parameters.
- *Sections 1054.235, 1054.240, 1054.245, 1054.601, and 1054.801:* Describe how to demonstrate compliance with dual-fuel and flexible-fuel engines. This generally involves testing with each separate fuel, or with a worst-case fuel blend.
- *Section 1054.240:* Clarify that each measurement from emission-data vehicles must meet emission standards.
- *Section 1054.245:* Clarify the basis for EPA approval for using deterioration factors from other engines. EPA approval depends on the manufacturer demonstrating that emission measurements reasonably represent in-use deterioration for the engine family being certified. This copies in regulatory text that already applies under other EPA programs.
- *Section 1054.245:* Copy in the values and formulas used for assigned deterioration factors for handheld and nonhandheld engines. This includes a minor correction to the equation from 40 CFR 90.104(g) and a new description about combining deterioration factors for HC and NO_X, but otherwise maintains the current policy and practice for these deterioration factors.
- *Section 1054.250:* Remove references to routine and standard tests and remove the shorter recordkeeping requirement for routine data (or data from routine tests). We are adopting a requirement to keep all test records for eight years. With electronic recording of test data, there should be no advantage to keeping the shorter recordkeeping requirement for a subset of test data. EPA also notes that the eight-year period restarts with certification for a new model year if the manufacturer uses carryover data.

• *Section 1054.255:* Clarify that doing anything to make information false or incomplete after submitting an application for certification is the same as submitting false or incomplete information. For example, if there is a change to any corporate information or engine parameters described in the manufacturer's previously submitted application for certification, the manufacturer must amend the application to include the new information.

• *Section 1054.255:* Clarify that voiding certificates for a failure to comply with recordkeeping or reporting requirements will be limited to the certificates that relate to the particular recordkeeping or reporting failure.

• *Section 1054.301:* Clarify the process for requesting a small-volume exemption from production-line testing. This is better handled as preliminary approval under § 1054.210 rather than including it as part of the application for certification.

• *Section 1054.310:* Provide an example to illustrate how manufacturers may need to divide the annual production period into four quarters if it is longer (or shorter) than 52 weeks.

• *Section 1054.315:* Clarify that results from repeat tests can be averaged together, provided that the engine is not modified during the test program. This applies for engine modifications to switch to a different engine configuration or to improve emission control for a given engine configuration.

• *Sections 1054.315 and 1054.320:* Clarify how to manage test results for engines that fail an emission standard. Manufacturers must use the production line testing (PLT) test result from a failing engine regardless of the disposition of the failing engine. Manufacturers report test results after modifying a failing engine to show that it can be covered by the certificate of conformity, but manufacturers may factor these test results into PLT calculations only if the manufacturer changes production processes for all further engines to match the adjustments made to the failing engine. In that case, the test results from the modified engine count as a new test engine for the PLT calculations, rather than replacing the results from the engine before modifications. These regulatory changes codify the practice we have already established by guidance.[30]

• *Section 1054.505:* Clarify the instructions for controlling torque at non-idle test modes, and for demonstrating compliance with cycle-validation criteria. The revised language more carefully describes the current practice for testing engines.

• *Section 1054.620:* Clarify that provisions apply for any kind of competition, not just racing.

• *Sections 1054.625 and 1054.626:* Remove obsolete text.

• *Section 1054.640:* Migrate engine branding provisions to § 1068.45.

• *Section 1054.690:* Correct the web address for U.S. Department of Treasury Circular 570 and clarify how an automatic suspension of a certificate of conformity applies for certain numbers of engines, and how U.S. Customs incorporates the bonding requirements into its entry procedures.

• *Section 1054.701:* Change terminology for counting engines from ''intended for sale in the United States'' to ''U.S.-direction production volume.'' This conforms to the usual approach for calculating emission credits for nonroad engines.

• *Section 1054.710:* Clarify that it is not permissible to show a proper balance of credits for a given model by using emission credits from a future model year.

• *Section 1054.730:* Clarify terminology for ABT reports.

• *Section 1054.740:* Remove obsolete content.

• *Section 1054.801:* Update the contact information for the Designated Compliance Officer.

• *Section 1054.801:* Remove the note from the definition of ''handheld'' describing which standards apply for various types of equipment. The note does not cover all the provisions that apply, which has led to more confusion than clarity.

• *Section 1054.801:* Revise the definition of ''model year'' to clarify that the calendar year relates to the time that engines are produced under a certificate of conformity.

• *Section 1054.801:* Revise the definition of ''new nonroad engine'' to clarify that imported engines become new based on the original date of manufacture, rather than the original model year. This clarification is necessary because 40 CFR 1068.360 requires redesignation of an imported engine's model year in certain circumstances.

• *Section 1054.801:* Revise the definition of ''placed into service'' to prevent circumvention that may result from a manufacturer or dealer using a piece of equipment in a way that could otherwise cause it to no longer be new and subject to the prohibitions of 40 CFR 1068.101.

• *Section 1054.801:* Revise the definition of ''small-volume equipment manufacturer'' to state that the volume limits apply for all calendar years, not just 2007 through 2009. We no longer use this definition for limiting the scope of transition or phase-in provisions. The provisions for reduced production-line testing, assigned deterioration factors, and reduced bonding burdens should apply without regard to the specific years identified in the original regulation adopting the Phase 3 standards.

• *Section 1054.815:* Migrate provisions related to confidential business information to 40 CFR Part 1068.

K. Amendments for General Compliance Provisions (40 CFR Part 1068)

We are amending the replacement engine exemption in § 1068.240 to adjust the criteria by which manufacturers qualify exempted engines under the tracked option in § 1068.240(b). Engine manufacturers may produce any number of exempt replacement engines if they meet all the specified requirements and conditions. To account for the timing of making the necessary demonstrations, the regulation specifies that engines must be designated as either tracked or untracked by September 30 following each production year, which coincides with the reporting requirement to document the number of exempt replacement engines each manufacturer produces. The regulation as adopted specifies that manufacturers must meet ''all the requirements and conditions that apply under paragraph (b). . . .''

We proposed to amend the regulation to clarify that the requirement for the engine manufacturer to retrieve the replaced engine (or confirm that it had been destroyed) was not subject to the reporting deadline of September 30 following the production year. The Truck and EMA commented to suggest that it would be better to apply a later deadline rather than removing the deadline entirely. The specific suggestion was to require converting a replacement engine from tracked to untracked if the replaced engine was not recovered within five years. We agree that the suggested approach would be beneficial for ensuring that replaced engines are accounted for and believe that the reported information would fit within the scope of current compliance responsibilities for both manufacturers and EPA. We are therefore including this adjustment in the final rule.

We also requested comment on several possible adjustments to the replacement engine exemption to

[30] ''Production Line Testing (PLT) Report Clarification'', EPA guidance document CD–15–21, August 31, 2015.

address manufacturers' concerns about complying with the limit of producing only 0.5 percent of their production volume for specified sizes and types of engines under the untracked option. This is most challenging for large engines with very low production volumes. California ARB commented to recommend keeping the 0.5 percent limit because it should be rare to need more exempt replacement engines, and the regulation already allows for a greater number of exempt replacement engines where manufacturers are able to meet the tracking requirements.

EMA commented with a suggestion that the manufacturers should be allowed to produce up to five exempt replacement engines under the untracked option, in addition to the 0.5 percent. This was intended to account for the fact that 0.5 percent of a couple hundred engines does not allow for any substantial flexibility to supply distributors with these exempt replacement engines. We recognize the limit of the percentage-based approach and agree that allowing five engines per year to meet demand for these engines is appropriate. We are leaving the 0.5 percent limit in place in this rulemaking, but we are including an adjustment to address the engine manufacturers' concerns about low-volume production. Rather than adding an allowance for these five engines for all companies and all sectors/categories, we are amending the regulation to allow for the greater of five engines or 0.5 percent of production. This focuses the amendment on the companies and product line where the percentage-based approach provides no substantial ability to participate in the untracked option for replacement engines. Allowing five engines makes a difference for engine models with annual production volumes below 900 for a given type and displacement category.

EMA had additional comments related to the limits and oversight provisions for the untracked option of the replacement engine exemption. As noted in the Response to Comments, we are deferring action on those broader comments until a future rulemaking.

L. Other Requests for Comment

The proposed rule described several areas where we were interested in comments to gather information, perspectives, and feedback on possible future rulemaking amendments. These comments are included in Chapter 4 of the Response to Comments. The other chapters of the Response to Comments also include several issues with similar input regarding potential future rulemaking amendments.

IV. Statutory Authority and Executive Order Reviews

Additional information about these statutes and Executive orders can be found at *http://www2.epa.gov/laws-regulations/laws-and-executive-orders.*

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

This action is not a significant regulatory action and was therefore not submitted to the Office of Management and Budget (OMB) for review.

B. Paperwork Reduction Act (PRA)

This action does not impose any new information collection burden under the PRA. OMB has previously approved the information collection activities contained in the existing regulations and has assigned OMB control numbers 2060–0104, 2060–0287, 2060–0338, 2060–0545, 2060–0641. This rule clarifies and simplifies procedures without affecting information collection requirements.

C. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. This action is designed to reduce testing burdens, increase compliance flexibility, and make various corrections and adjustments to compliance provisions; as a result, we anticipate no costs associated with this rule. We have therefore concluded that this action will have no net regulatory burden for directly regulated small entities.

D. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. This action imposes no enforceable duty on any state, local or tribal governments. Requirements for the private sector do not exceed $100 million in any one year.

E. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the National Government and the states, or on the distribution of power and responsibilities among the various levels of government.

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

This action does not have tribal implications as specified in Executive Order 13175. This rule will be implemented at the Federal level and affects engine and vehicle manufacturers. Thus, Executive Order 13175 does not apply to this action.

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

This action is not subject to Executive Order 13045 because it is not economically significant as defined in Executive Order 12866, and because the EPA does not believe the environmental health or safety risks addressed by this action present a disproportionate risk to children.

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

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

I. National Technology Transfer and Advancement Act (NTTAA) and 1 CFR Part 51

Section 12(d) of the National Technology Transfer and Advancement Act of 1995 (''NTTAA''), Public Law 104–113, 12(d) (15 U.S.C. 272 note) directs EPA to use voluntary consensus standards in its regulatory activities unless to do so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (*e.g.*, materials specifications, test methods, sampling procedures, and business practices) that are developed or adopted by voluntary consensus standards bodies. NTTAA directs agencies to provide Congress, through OMB, explanations when the Agency decides not to use available and applicable voluntary consensus standards. This action involves technical standards.

Except for the standards discussed below, the standards included in the regulatory text as incorporated by reference (in parts 60, 86, 1036, 1037, 1060, and 1065) were all previously approved for IBR and no change is included in this action.

In accordance with the requirements of 1 CFR 51.5, we are incorporating by reference the use of test methods and standards from ASTM International. This includes the following standards and test methods:

Standard or test method	Regulation	Summary
ASTM D3588–98 (Reapproved 2017)e1, Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels.	40 CFR 1036.530 and 1036.810	Test method describes how to determine the lower heating value and other parameters for gaseous fuels.
ASTM D5769–20, Standard Test Method for Determination of Benzene, Toluene, and Total Aromatics in Finished Gasolines by Gas Chromatography/Mass Spectrometry.	40 CFR 86.1, 86.113–04, 86.213, and 86.513.	Test method describes how to measure aromatic content of gasoline. This would be an alternative to the currently specified method in ASTM D1319, as described in Section II.A.3 for 40 CFR 1065.710.
ASTM D6550–20, Standard Test Method for Determination of Olefin Content of Gasolines by Supercritical-Fluid Chromatography.	40 CFR 86.1, 86.113–04, 86.213, and 86.513.	Test method describes how to measure olefin content of gasoline. This would be an alternative to the currently specified method in ASTM D1319, as described in Section II.A.3 for 40 CFR 1065.710.
ASTM D6667–14 (Reapproved 2019), Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence.	40 CFR 1065.720 and 1065.1010.	Test method describes how to measure sulfur in liquefied petroleum gas.

The referenced standards and test methods may be obtained through the ASTM International website (*www.astm.org*) or by calling ASTM at (610) 832–9585.

As described in Section II.A.5, EPA is publishing a new version of the Greenhouse Gas emissions Model (GEM), which manufacturers will use for certifying heavy-duty highway vehicles to the Phase 2 GHG emission standards in 40 CFR part 1037. The model calculates GHG emission rates for heavy-duty highway vehicles based on input values defined by the manufacturer. GEM Version 3.5.1 applies for all Phase 2 vehicles. GEM also includes a Hardware-in-Loop submodel to simulate vehicle engines, transmissions, and other powertrain components. These models are referenced in §§ 1037.520, 1037.550, and 1037.801. The models are available as noted in the amended regulations at 40 CFR 1037.810.

We are removing numerous referenced documents as part of the effort to remove obsolete provisions in 40 CFR parts 85 through 94 and elsewhere.

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

The EPA believes this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). Due to the small environmental impact, this regulatory action will not have a disproportionate adverse effect on minority populations, low-income populations, or indigenous peoples.

K. Congressional Review Act (CRA)

This action is subject to the CRA, and EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. This action is not a ''major rule'' as defined by 5 U.S.C. 804(2).

L. Judicial Review

Under CAA section 307(b)(1), judicial review of this final rule is available only by filing a petition for review in the U.S. Court of Appeals for the District of Columbia Circuit by August 30, 2021. Under CAA section 307(d)(7)(B), only an objection to this final rule that was raised with reasonable specificity during the period for public comment can be raised during judicial review. Section 307(d)(7)(B) of the Clean Air Act also provides a mechanism for EPA to convene a proceeding for reconsideration, ''[i]f the person raising an objection can demonstrate to EPA that it was impracticable to raise such objection within [the period for public comment] or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule.'' Any person seeking to make such a demonstration should submit a Petition for Reconsideration to the Office of the Administrator, Environmental Protection Agency, Room 3000, William Jefferson Clinton Building, 1200 Pennsylvania Ave. NW, Washington, DC 20460, with an electronic copy to the person listed in **FOR FURTHER INFORMATION CONTACT**, and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), Environmental Protection Agency, 1200 Pennsylvania Ave. NW, Washington, DC 20004. Note that under CAA section 307(b)(2), the requirements established by this final rule may not be challenged separately in any civil or criminal proceedings brought by EPA to enforce these requirements.

List of Subjects

40 CFR Part 9

Reporting and recordkeeping requirements.

40 CFR Part 59

Air pollution control, Confidential business information, Labeling, Ozone, Reporting and recordkeeping requirements, Volatile organic compounds.

40 CFR Part 60

Administrative practice and procedure, Air pollution control, Aluminum, Beverages, Carbon monoxide, Chemicals, Coal, Electric power plants, Fluoride, Gasoline, Glass and glass products, Grains, Greenhouse gases, Household appliances, Incorporation by reference, Industrial facilities, Insulation, Intergovernmental relations, Iron, Labeling, Lead, Lime, Metals, Motor vehicles, Natural gas, Nitrogen dioxide, Petroleum, Phosphate, Plastics materials and synthetics, Polymers, Reporting and recordkeeping requirements, Rubber and rubber products, Sewage disposal, Steel, Sulfur oxides, Vinyl, Volatile organic compounds, Waste treatment and disposal, Zinc.

40 CFR Part 85

Confidential business information, Greenhouse gases, Imports, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements, Research, Warranties.

40 CFR Part 86

Administrative practice and procedure, Confidential business information, Incorporation by reference, Labeling, Motor vehicle pollution,

Reporting and recordkeeping requirements.

40 CFR Part 88

Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements.

40 CFR Part 89

Administrative practice and procedure, Confidential business information, Imports, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements, Research, Vessels, Warranties.

40 CFR Part 90

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

40 CFR Part 91

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

40 CFR Part 92

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

40 CFR Part 94

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

40 CFR Part 1027

Administrative practice and procedure, Air pollution control, Confidential business information, Imports, Reporting and recordkeeping requirements.

40 CFR Part 1033

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

40 CFR Part 1036

Administrative practice and procedure, Air pollution control, Confidential business information, Environmental protection, Greenhouse gases, Incorporation by reference, Labeling, Motor vehicle pollution, Reporting and recordkeeping requirements, Warranties.

40 CFR Part 1037

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

40 CFR Part 1039

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

40 CFR Part 1042

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

40 CFR Part 1043

Administrative practice and procedure, Air pollution control, Imports, Incorporation by reference, Reporting and recordkeeping requirements, Vessels.

40 CFR Part 1045

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

40 CFR Part 1048

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

40 CFR Part 1051

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

40 CFR Part 1054

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

40 CFR Part 1060

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

40 CFR Part 1065

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

40 CFR Part 1066

Air pollution control, Incorporation by reference, Reporting and recordkeeping requirements.

40 CFR Part 1068

Administrative practice and procedure, Air pollution control, Confidential business information, Imports, Motor vehicle pollution, Penalties, Reporting and recordkeeping requirements, Warranties.

40 CFR Part 1074

Administrative practice and procedure, Air pollution control.

Jane Nishida,

Acting Administrator.

For the reasons set out in the preamble, we are amending title 40, chapter I of the Code of Federal Regulations as set forth below.

PART 9—OMB APPROVALS UNDER THE PAPERWORK REDUCTION ACT

■ 1. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 *et seq.*, 136–136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601–2671; 21 U.S.C. 331j, 346a, 31 U.S.C. 9701; 33 U.S.C. 1251 *et seq.*, 1311, 1313d, 1314, 1318, 1321, 1326, 1330, 1342, 1344, 1345(d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–1, 300j–2, 300j–3, 300j–4, 300j–9, 1857 *et seq.*, 6901–6992k, 7401–7671q, 7542, 9601–9657, 11023, 11048.

■ 2. Amend § 9.1 by:
■ a. Removing entries for 85.1403 through 85.1415, 85.1514, 85.1712, 85.1808, 85.2208, and 85.2401–85.2409;
■ b. Revising the entries under the heading ''Control of Emissions From New and In-Use Highway Vehicles and Engine'';
■ c. Removing the heading ''Clean-Fuel Vehicles'' and the items under that heading;
■ d. Removing the heading ''Control of Emissions From New and In-Use

Nonroad Compression-Ignition Engines'' and the items under that heading;

■ e. Removing the heading ''Control of Emissions From New and In-use Nonroad Engines'' and the items under that heading;

■ f. Removing the heading ''Control of Emissions From New and In-Use Marine Compression-Ignition Engines'' and the items under that heading;

■ g. Revising the entries under the heading ''Fuel Economy of Motor Vehicles'';

■ h. Removing the entry for ''1033.825'' and adding the entry ''1033.925'' in its place; and

■ i. Removing the entry for ''1042.825'' and adding the entry ''1042.925'' in its place.

The revisions and additions read as follows:

§ 9.1 OMB approvals under the Paperwork Reduction Act.

* * * * *

40 CFR citation	OMB control No.
* * * * *	
Control of Air Pollution From Motor Vehicles and Motor Vehicle Engines	
85.503	2060–0104
85.505	2060–0104
85.1504	2060–0095
85.1505	2060–0095
85.1507	2060–0095
85.1508	2060–0095
85.1509	2060–0095
85.1511	2060–0095
85.1512	2060–0095
85.1705	2060–0104
85.1706	2060–0104
85.1708	2060–0104
85.1710	2060–0104
85.1802	2060–0104
85.1803	2060–0104
85.1806	2060–0104
85.1903	2060–0104
85.1904	2060–0104
85.1905	2060–0104
85.1906	2060–0104
85.1908	2060–0104
85.1909	2060–0104
85.2110	2060–0104
85.2114	2060–0060
85.2115	2060–0060
85.2116	2060–0060
85.2117	2060–0060
85.2118	2060–0060
85.2119	2060–0060
85.2120	2060–0060
Control of Emissions From New and In-Use Highway Vehicles and Engines	
86.000–7	2060–0104
86.000–24	2060–0104
86.001–21	2060–0104
86.001–23	2060–0104
86.001–24	2060–0104
86.004–28	2060–0104
86.004–38	2060–0104
86.004–40	2060–0104
86.079–31—86.079–33	2060–0104
86.079–39	2060–0104
86.080–12	2060–0104
86.082–34	2060–0104
86.085–37	2060–0104
86.090–27	2060–0104
86.091–7	2060–0104
86.094–21	2060–0104
86.094–25	2060–0104
86.094–30	2060–0104
86.095–14	2060–0104
86.095–35	2060–0104
86.096–24	2060–0104
86.098–23	2060–0104
86.099–10	2060–0104
86.107–98	2060–0104
86.108–00	2060–0104
86.111–94	2060–0104
86.113–15	2060–0104
86.113–94	2060–0104
86.129–00	2060–0104
86.142–90	2060–0104
86.144–94	2060–0104
86.150–98	2060–0104
86.155–98	2060–0104
86.159–08	2060–0104
86.160–00	2060–0104
86.161–00	2060–0104
86.162–03	2060–0104
86.163–00	2060–0104
86.412–78	2060–0104
86.414–78	2060–0104
86.415–78	2060–0104
86.416–80	2060–0104
86.421–78	2060–0104
86.423–78	2060–0104
86.427–78	2060–0104
86.428–80	2060–0104
86.429–78	2060–0104
86.431–78	2060–0104
86.432–78	2060–0104
86.434–78	2060–0104
86.435–78	2060–0104
86.436–78	2060–0104
86.437–78	2060–0104
86.438–78	2060–0104
86.439–78	2060–0104
86.440–78	2060–0104
86.445–2006	2060–0104
86.446–2006	2060–0104
86.447–2006	2060–0104
86.448–2006	2060–0104
86.449	2060–0104
86.513	2060–0104
86.537–90	2060–0104
86.542–90	2060–0104
86.603–98	2060–0104
86.604–84	2060–0104
86.605–98	2060–0104
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86.612–97	2060–0104
86.614–84	2060–0104
86.615–84	2060–0104
86.884–5	2060–0104
86.884–7	2060–0104
86.884–9	2060–0104
86.884–10	2060–0104
86.884–12	2060–0104
86.884–13	2060–0104
86.1106–87	2060–0104
86.1107–87	2060–0104
86.1108–87	2060–0104
86.1110–87	2060–0104
86.1111–87	2060–0104
86.1113–87	2060–0104
86.1114–87	2060–0104
86.1805–17	2060–0104
86.1806–17	2060–0104
86.1809–12	2060–0104
86.1811–17	2060–0104
86.1823–08	2060–0104
86.1826–01	2060–0104
86.1829–15	2060–0104
86.1839–01	2060–0104
86.1840–01	2060–0104
86.1842–01	2060–0104
86.1843–01	2060–0104
86.1844–01	2060–0104
86.1845–04	2060–0104
86.1847–01	2060–0104
86.1862–04	2060–0104
86.1920–86.1925	2060–0287
* * * * *	
Fuel Economy of Motor Vehicles	
600.005	2060–0104
600.006	2060–0104
600.007	2060–0104
600.010	2060–0104
600.113–12	2060–0104
600.206–12	2060–0104
600.207–12	2060–0104
600.209–12	2060–0104
600.301—600.314–08	2060–0104
600.507–12	2060–0104
600.509–12	2060–0104
600.510–12	2060–0104
600.512–12	2060–0104
* * * * *	
Control of Emissions From Locomotives	
1033.925	2060–0287
* * * * *	
Control of Emissions From New and In-Use Marine Compression-Ignition Engines and Vessels	
1042.925	2060–0827
* * * * *	

* * * * *

PART 59—NATIONAL VOLATILE ORGANIC COMPOUND EMISSION STANDARDS FOR CONSUMER AND COMMERCIAL PRODUCTS

■ 3. The authority citation for part 59 continues to read as follows:

Authority: 42 U.S.C. 7414 and 7511b(e).

Subpart F—Control of Evaporative Emissions From New and In-Use Portable Fuel Containers

■ 4. Amend § 59.626 by revising paragraph (e) to read as follows:

§ 59.626 What emission testing must I perform for my application for a certificate of conformity?

* * * * *

(e) We may require you to test units of the same or different configuration in addition to the units tested under paragraph (b) of this section.

* * * * *

■ 5. Amend § 59.628 by revising paragraph (b) to read as follows:

§ 59.628 What records must I keep and what reports must I send to EPA?

* * * * *

(b) Keep required data from emission tests and all other information specified in this subpart for five years after we issue the associated certificate of conformity. If you use the same emission data or other information for a later production period, the five-year period restarts with each new production period if you continue to rely on the information.

* * * * *

■ 6. Amend § 59.650 by revising paragraph (c) to read as follows:

§ 59.650 General testing provisions.

* * * * *

(c) The specification for gasoline to be used for testing is given in 40 CFR 1065.710(c). Use the grade of gasoline specified for general testing. Blend this grade of gasoline with reagent grade ethanol in a volumetric ratio of 90.0 percent gasoline to 10.0 percent ethanol to achieve a blended fuel that has 10.0 ±1.0 percent ethanol by volume. You may use ethanol that is less pure if you can demonstrate that it will not affect your ability to demonstrate compliance with the applicable emission standards.

* * * * *

■ 7. Amend § 59.653 by revising paragraphs (a)(1) and (3) and (a)(4)(ii)(C) to read as follows:

§ 59.653 How do I test portable fuel containers?

* * * * *

(a) * * *

(1) *Pressure cycling.* Perform a pressure test by sealing the container and cycling it between +13.8 and −3.4 kPa (+2.0 and −0.5 psig) for 10,000 cycles at a rate of 60 seconds per cycle. For this test, the spout may be removed, and the pressure applied through the opening where the spout attaches. The purpose of this test is to represent environmental wall stresses caused by pressure changes and other factors (such as vibration or thermal expansion). If your container cannot be tested using the pressure cycles specified by this paragraph (a)(1), you may ask to use special test procedures under § 59.652(c).

* * * * *

(3) *Slosh testing.* Perform a slosh test by filling the portable fuel container to 40 percent of its capacity with the fuel specified in paragraph (e) of this section and rocking it at a rate of 15 cycles per minute until you reach one million total cycles. Use an angle deviation of +15° to −15° from level. Take steps to ensure that the fuel remains at 40 percent of its capacity throughout the test run.

(4) * * *

(ii) * * *

(C) Actuate the spout by fully opening and closing without dispensing fuel. The spout must return to the closed position without the aid of the operator (*e.g.*, pushing or pulling the spout closed). Repeat for a total of 10 actuations. If at any point the spout fails to return to the closed position, the container fails the diurnal test.

* * * * *

■ 8. Amend § 59.660 by revising paragraph (b) to read as follows:

§ 59.660 Exemption from the standards.

* * * * *

(b) Manufacturers and other persons subject to the prohibitions in § 59.602 may ask us to exempt portable fuel containers to purchase, sell, or distribute them for the sole purpose of testing them.

* * * * *

■ 9. Amend § 59.664 by revising paragraph (c) to read as follows:

§ 59.664 What are the requirements for importing portable fuel containers into the United States?

* * * * *

(c) You may meet the bond requirements of this section by obtaining a bond from a third-party surety that is cited in the U.S. Department of Treasury Circular 570, ''Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies'' (*https://www.fiscal.treasury.gov/surety-bonds/circular-570.html*).

* * * * *

■ 10. Amend § 59.680 by revising the definition of ''Portable fuel container'' to read as follows:

§ 59.680 What definitions apply to this subpart?

* * * * *

Portable fuel container means a reusable container of any color that is designed and marketed or otherwise intended for use by consumers for receiving, transporting, storing, and dispensing gasoline, diesel fuel, or kerosene. For the purposes of this subpart, all utility jugs that are red, yellow, or blue in color are deemed to be portable fuel containers, regardless of how they are labeled or marketed.

* * * * *

PART 60—STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

■ 11. The authority citation for part 60 continues to read as follows:

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

■ 12. Amend § 60.4200 by revising paragraph (d) to read as follows:

§ 60.4200 Am I subject to this subpart?

* * * * *

(d) Stationary CI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C, except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

* * * * *

■ 13. Amend § 60.4201 by revising paragraphs (a), (d) introductory text, (f) introductory text, and (h) to read as follows:

§ 60.4201 What emission standards must I meet for non-emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their 2007 model year and later non-emergency stationary CI ICE with a maximum engine power less than or equal to 2,237 kilowatt (KW) (3,000 horsepower (HP)) and a displacement of less than 10 liters per cylinder to the certification emission standards for new nonroad CI engines in 40 CFR 1039.101, 1039.102, 1039.104, 1039.105, 1039.107, and 1039.115 and 40 CFR part 1039, appendix I, as applicable, for all pollutants, for the same model year and maximum engine power.

* * * * *

(d) Stationary CI internal combustion engine manufacturers must certify the following non-emergency stationary CI ICE to the appropriate Tier 2 emission standards for new marine CI engines as described in 40 CFR part 1042, appendix I, for all pollutants, for the same displacement and rated power:

* * * * *

(f) Notwithstanding the requirements in paragraphs (a) through (c) of this section, stationary non-emergency CI ICE identified in paragraphs (a) and (c) of this section may be certified to the provisions of 40 CFR part 1042 for commercial engines that are applicable for the engine's model year, displacement, power density, and maximum engine power if the engines will be used solely in either or both of the following locations:

* * * * *

(h) Stationary CI ICE certified to the standards in 40 CFR part 1039 and equipped with auxiliary emission control devices (AECDs) as specified in 40 CFR 1039.665 must meet the Tier 1 certification emission standards for new nonroad CI engines in 40 CFR part 1039, appendix I, while the AECD is activated during a qualified emergency situation. A qualified emergency situation is defined in 40 CFR 1039.665. When the qualified emergency situation has ended and the AECD is deactivated, the engine must resume meeting the otherwise applicable emission standard specified in this section.

■ 14. Amend § 60.4202 by revising paragraphs (a)(1)(i), (a)(2), (b)(2), (e) introductory text, and (g) introductory text to read as follows:

§ 60.4202 What emission standards must I meet for emergency engines if I am a stationary CI internal combustion engine manufacturer?

(a) * * *

(1) * * *

(i) The Tier 2 emission standards for new nonroad CI engines for the appropriate rated power as described in 40 CFR part 1039, appendix I, for all pollutants and the smoke standards as specified in 40 CFR 1039.105 for model year 2007 engines; and

* * * * *

(2) For engines with a rated power greater than or equal to 37 KW (50 HP), the Tier 2 or Tier 3 emission standards for new nonroad CI engines for the same rated power as described in 40 CFR part 1039, appendix I, for all pollutants and the smoke standards as specified in 40 CFR 1039.105 beginning in model year 2007.

(b) * * *

(2) For 2011 model year and later, the Tier 2 emission standards as described in 40 CFR part 1039, appendix I, for all pollutants and the smoke standards as specified in 40 CFR 1039.105.

* * * * *

(e) Stationary CI internal combustion engine manufacturers must certify the following emergency stationary CI ICE that are not fire pump engines to the appropriate Tier 2 emission standards for new marine CI engines as described in 40 CFR part 1042, appendix I, for all pollutants, for the same displacement and rated power:

* * * * *

(g) Notwithstanding the requirements in paragraphs (a) through (d) of this section, stationary emergency CI ICE identified in paragraphs (a) and (c) of this section may be certified to the provisions of 40 CFR part 1042 for commercial engines that are applicable for the engine's model year, displacement, power density, and maximum engine power if the engines will be used solely in either or both of the locations identified in paragraphs (g)(1) and (2) of this section. Engines that would be subject to the Tier 4 standards in 40 CFR part 1042 that are used solely in either or both of the locations identified in paragraphs (g)(1) and (2) of this section may instead continue to be certified to the appropriate Tier 3 standards in 40 CFR part 1042.

* * * * *

■ 15. Amend § 60.4204 by revising paragraphs (a) and (f) to read as follows:

§ 60.4204 What emission standards must I meet for non-emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of less than 10 liters per cylinder must comply with the emission standards in table 1 to this subpart. Owners and operators of pre-2007 model year non-emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder must comply with the Tier 1 emission standards in 40 CFR part 1042, appendix I.

* * * * *

(f) Owners and operators of stationary CI ICE certified to the standards in 40 CFR part 1039 and equipped with AECDs as specified in 40 CFR 1039.665 must meet the Tier 1 certification emission standards for new nonroad CI engines in 40 CFR part 1039, appendix I, while the AECD is activated during a qualified emergency situation. A qualified emergency situation is defined in 40 CFR 1039.665. When the qualified emergency situation has ended and the AECD is deactivated, the engine must resume meeting the otherwise applicable emission standard specified in this section.

■ 16. Amend § 60.4205 by revising paragraph (a) to read as follows:

§ 60.4205 What emission standards must I meet for emergency engines if I am an owner or operator of a stationary CI internal combustion engine?

(a) Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of less than 10 liters per cylinder that are not fire pump engines must comply with the emission standards in Table 1 to this subpart. Owners and operators of pre-2007 model year emergency stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder that are not fire pump engines must comply with the Tier 1 emission standards in 40 CFR part 1042, appendix I.

* * * * *

■ 17. Amend § 60.4210 by revising paragraphs (a) and (b), (c) introductory text, (c)(3), (d), (i), and (j) and adding paragraph (k) to read as follows:

§ 60.4210 What are my compliance requirements if I am a stationary CI internal combustion engine manufacturer?

(a) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of less than 10 liters per cylinder to the emission standards specified in §§ 60.4201(a) through (c) and 60.4202(a), (b), and (d) using the certification procedures required in 40 CFR part 1039, subpart C, and must test their engines as specified in 40 CFR part 1039. For the purposes of this subpart, engines certified to the standards in Table 1 to this subpart shall be subject to the same certification procedures required for engines certified to the Tier 1 standards in 40 CFR part 1039, appendix I. For the purposes of this subpart, engines certified to the standards in Table 4 to this subpart shall be subject to the same certification procedures required for engines certified to the Tier 1 standards in 40 CFR part 1039, appendix I, except that engines with NFPA nameplate power of less than 37 KW (50 HP) certified to model year 2011 or later standards shall be subject to the same requirements as engines certified to the standards in 40 CFR part 1039.

(b) Stationary CI internal combustion engine manufacturers must certify their stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder to the emission standards specified in §§ 60.4201(d) and (e) and 60.4202(e) and (f) using the certification procedures required in 40 CFR part 1042, subpart C, and must test their engines as specified in 40 CFR part 1042.

(c) Stationary CI internal combustion engine manufacturers must meet the requirements of 40 CFR 1039.120, 1039.125, 1039.130, and 1039.135 and 40 CFR part 1068 for engines that are certified to the emission standards in 40 CFR part 1039. Stationary CI internal combustion engine manufacturers must meet the corresponding provisions of 40 CFR part 1042 for engines that would be covered by that part if they were nonroad (including marine) engines. Labels on such engines must refer to stationary engines, rather than or in addition to nonroad or marine engines, as appropriate. Stationary CI internal combustion engine manufacturers must label their engines according to paragraphs (c)(1) through (3) of this section.

* * * * *

(3) Stationary CI internal combustion engines manufactured after January 1, 2007 (for fire pump engines, after January 1 of the year listed in table 3 to this subpart, as applicable) must be labeled according to paragraphs (c)(3)(i) through (iii) of this section.

(i) Stationary CI internal combustion engines that meet the requirements of this subpart and the corresponding requirements for nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR part 1039 or 1042, as appropriate.

(ii) Stationary CI internal combustion engines that meet the requirements of this subpart, but are not certified to the standards applicable to nonroad (including marine) engines of the same model year and HP must be labeled according to the provisions in 40 CFR part 1039 or 1042, as appropriate, but the words ''stationary'' must be included instead of ''nonroad'' or ''marine'' on the label. In addition, such engines must be labeled according to 40 CFR 1039.20.

(iii) Stationary CI internal combustion engines that do not meet the requirements of this subpart must be labeled according to 40 CFR 1068.230 and must be exported under the provisions of 40 CFR 1068.230.

(d) An engine manufacturer certifying an engine family or families to standards under this subpart that are identical to standards applicable under 40 CFR part 1039 or 1042 for that model year may certify any such family that contains both nonroad (including marine) and stationary engines as a single engine family and/or may include any such family containing stationary engines in the averaging, banking, and trading provisions applicable for such engines under those parts.

* * * * *

(i) The replacement engine provisions of 40 CFR 1068.240 are applicable to stationary CI engines replacing existing equipment that is less than 15 years old.

(j) Stationary CI ICE manufacturers may equip their stationary CI internal combustion engines certified to the emission standards in 40 CFR part 1039 with AECDs for qualified emergency situations according to the requirements of 40 CFR 1039.665. Manufacturers of stationary CI ICE equipped with AECDs as allowed by 40 CFR 1039.665 must meet all the requirements in 40 CFR 1039.665 that apply to manufacturers. Manufacturers must document that the engine complies with the Tier 1 standard in 40 CFR part 1039, appendix I, when the AECD is activated. Manufacturers must provide any relevant testing, engineering analysis, or other information in sufficient detail to support such statement when applying for certification (including amending an existing certificate) of an engine equipped with an AECD as allowed by 40 CFR 1039.665.

(k) Manufacturers of any size may certify their emergency stationary CI internal combustion engines under this section using assigned deterioration factors established by EPA, consistent with 40 CFR 1039.240 and 1042.240.

■ 18. Amend § 60.4211 by revising paragraphs (a)(3) and (b)(1) to read as follows:

§ 60.4211 What are my compliance requirements if I am an owner or operator of a stationary CI internal combustion engine?

(a) * * *

(3) Meet the requirements of 40 CFR part 1068, as they apply to you.

(b) * * *

(1) Purchasing an engine certified to emission standards for the same model year and maximum engine power as described in 40 CFR parts 1039 and 1042, as applicable. The engine must be installed and configured according to the manufacturer's specifications.

* * * * *

■ 19. Amend § 60.4212 by revising paragraphs (a) and (c) and removing the undesignated paragraph following the equation in paragraph (c) to read as follows:

§ 60.4212 What test methods and other procedures must I use if I am an owner or operator of a stationary CI internal combustion engine with a displacement of less than 30 liters per cylinder?

* * * * *

(a) The performance test must be conducted according to the in-use testing procedures in 40 CFR part 1039, subpart F, for stationary CI ICE with a displacement of less than 10 liters per cylinder, and according to 40 CFR part 1042, subpart F, for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder. Alternatively, stationary CI ICE that are complying with Tier 2 or Tier 3 emission standards as described in 40 CFR part 1039, appendix I, or with Tier 2 emission standards as described in 40 CFR part 1042, appendix I, may follow the testing procedures specified in § 60.4213, as appropriate.

* * * * *

(c) Exhaust emissions from stationary CI ICE subject to Tier 2 or Tier 3 emission standards as described in 40 CFR part 1039, appendix I, or Tier 2 emission standards as described in 40 CFR part 1042, appendix I, must not exceed the NTE numerical requirements, rounded to the same number of decimal places as the applicable standard, determined from the following equation:

$$\text{NTE requirement for each pollutant} = (1.25) \times (\text{STD}) \quad \text{(Eq. 1)}$$

Where:

STD = The standard specified for that pollutant in 40 CFR part 1039 or 1042, as applicable.

* * * * *

■ 20. Amend § 60.4216 by revising paragraphs (b) and (c) to read as follows:

§ 60.4216 What requirements must I meet for engines used in Alaska?

* * * * *

(b) Except as indicated in paragraph (c) of this section, manufacturers, owners and operators of stationary CI ICE with a displacement of less than 10 liters per cylinder located in remote areas of Alaska may meet the requirements of this subpart by manufacturing and installing engines meeting the Tier 2 or Tier 3 emission standards described in 40 CFR part 1042 for the same model year, displacement, and maximum engine power, as appropriate, rather than the otherwise

applicable requirements of 40 CFR part 1039, as indicated in §§ 60.4201(f) and 60.4202(g).

(c) Manufacturers, owners, and operators of stationary CI ICE that are located in remote areas of Alaska may choose to meet the applicable emission standards for emergency engines in §§ 60.4202 and 60.4205, and not those for non-emergency engines in §§ 60.4201 and 60.4204, except that for 2014 model year and later nonemergency CI ICE, the owner or operator of any such engine must have that engine certified as meeting at least the Tier 3 PM standards identified in appendix I of 40 CFR part 1039 or in 40 CFR 1042.101.

* * * * *

■ 21. Amend § 60.4219 by revising the definition for ''Certified emissions life'' to read as follows:

§ 60.4219 What definitions apply to this subpart?

* * * * *

Certified emissions life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary CI ICE with a displacement of less than 10 liters per cylinder are given in 40 CFR 1039.101(g). The values for certified emissions life for stationary CI ICE with a displacement of greater than or equal to 10 liters per cylinder and less than 30 liters per cylinder are given in 40 CFR 1042.101(e).

* * * * *

■ 22. Amend § 60.4230 by revising paragraph (e) to read as follows:

§ 60.4230 Am I subject to this subpart?

* * * * *

(e) Stationary SI ICE may be eligible for exemption from the requirements of this subpart as described in 40 CFR part 1068, subpart C (or the exemptions described in 40 CFR parts 1048 and 1054, for engines that would need to be certified to standards in those parts), except that owners and operators, as well as manufacturers, may be eligible to request an exemption for national security.

* * * * *

■ 23. Amend § 60.4231 by revising paragraphs (a) through (d) to read as follows:

§ 60.4231 What emission standards must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing such engines?

(a) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) manufactured on or after July 1, 2008 to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1054, as follows:

If engine displacement is . . .	and manufacturing dates are . . .	the engine must meet the following non-handheld emission standards identified in 40 CFR part 1054 and related requirements:
(1) Below 225 cc	July 1, 2008 to December 31, 2011	Phase 2.
(2) Below 225 cc	January 1, 2012 or later	Phase 3.
(3) At or above 225 cc	July 1, 2008 to December 31, 2010	Phase 2.
(4) At or above 225 cc	January 1, 2011 or later	Phase 3.

(b) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) (except emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) that use gasoline and that are manufactured on or after the applicable date in § 60.4230(a)(2), or manufactured on or after the applicable date in § 60.4230(a)(4) for emergency stationary ICE with a maximum engine power greater than or equal to 130 HP, to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers must certify their emergency stationary SI ICE with a maximum engine power greater than 25 HP and less than 130 HP that use gasoline and that are manufactured on or after the applicable date in § 60.4230(a)(4) to the Phase 1 emission standards in 40 CFR part 1054, appendix I, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR part 1054. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cubic centimeters (cc) that use gasoline to the certification emission standards and other requirements as appropriate for new nonroad SI engines in 40 CFR part 1054.

(c) Stationary SI internal combustion engine manufacturers must certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) (except emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) that are rich burn engines that use LPG and that are manufactured on or after the applicable date in § 60.4230(a)(2), or manufactured on or after the applicable date in § 60.4230(a)(4) for emergency stationary ICE with a maximum engine power greater than or equal to 130 HP, to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers must certify their emergency stationary SI ICE greater than 25 HP and less than 130 HP that are rich burn engines that use LPG and that are manufactured on or after the applicable date in § 60.4230(a)(4) to the Phase 1 emission standards in 40 CFR part 1054, appendix I, applicable to class II engines, and other requirements for new nonroad SI engines in 40 CFR part 1054. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc that are rich burn engines that use LPG to the certification emission standards and other requirements as appropriate for new nonroad SI engines in 40 CFR part 1054.

(d) Stationary SI internal combustion engine manufacturers who choose to certify their stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG and emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) under the voluntary manufacturer certification program described in this subpart must certify those engines to the certification emission standards for new nonroad SI engines in 40 CFR part 1048. Stationary SI internal combustion engine manufacturers who choose to certify

their emergency stationary SI ICE greater than 25 HP and less than 130 HP (except gasoline and rich burn engines that use LPG), must certify those engines to the Phase 1 emission standards in 40 CFR part 1054, appendix I, applicable to class II engines, for new nonroad SI engines in 40 CFR part 1054. Stationary SI internal combustion engine manufacturers may certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc (except gasoline and rich burn engines that use LPG) to the certification emission standards and other requirements as appropriate for new nonroad SI engines in 40 CFR part 1054. For stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) and less than 75 KW (100 HP) (except gasoline and rich burn engines that use LPG and emergency stationary ICE with a maximum engine power greater than 25 HP and less than 130 HP) manufactured prior to January 1, 2011, manufacturers may choose to certify these engines to the standards in Table 1 to this subpart applicable to engines with a maximum engine power greater than or equal to 100 HP and less than 500 HP.

* * * * *

■ 24. Revise § 60.4238 to read as follows:

§ 60.4238 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines ≤19 KW (25 HP) or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in § 60.4231(a) must certify their stationary SI ICE using the certification and testing procedures required in 40 CFR part 1054, subparts C and F. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

■ 25. Revise § 60.4239 to read as follows:

§ 60.4239 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that use gasoline or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in § 60.4231(b) must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must test their engines as specified in that part. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1054, and manufacturers of stationary SI emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 emission standards in 40 CFR part 1054, appendix I, applicable to class II engines, must certify their stationary SI ICE using the certification and testing procedures required in 40 CFR part 1054, subparts C and F. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

■ 26. Revise § 60.4240 to read as follows:

§ 60.4240 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines >19 KW (25 HP) that are rich burn engines that use LPG or a manufacturer of equipment containing such engines?

Stationary SI internal combustion engine manufacturers who are subject to the emission standards specified in § 60.4231(c) must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must test their engines as specified in that part. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI engines in 40 CFR part 1054, and manufacturers of stationary SI emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 emission standards in 40 CFR part 1054, appendix I, applicable to class II engines, must certify their stationary SI ICE using the certification and testing procedures required in 40 CFR part 1054, subparts C and F. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

■ 27. Amend § 60.4241 by revising paragraphs (a), (b), and (i) to read as follows:

§ 60.4241 What are my compliance requirements if I am a manufacturer of stationary SI internal combustion engines participating in the voluntary certification program or a manufacturer of equipment containing such engines?

(a) Manufacturers of stationary SI internal combustion engines with a maximum engine power greater than 19 KW (25 HP) that do not use gasoline and are not rich burn engines that use LPG can choose to certify their engines to the emission standards in § 60.4231(d) or (e), as applicable, under the voluntary certification program described in this subpart. Manufacturers who certify their engines under the voluntary certification program must meet the requirements as specified in paragraphs (b) through (g) of this section. In addition, manufacturers of stationary SI internal combustion engines who choose to certify their engines under the voluntary certification program, must also meet the requirements as specified in § 60.4247. Manufacturers of stationary SI internal combustion engines who choose not to certify their engines under this section must notify the ultimate purchaser that testing requirements apply as described in § 60.4243(b)(2); manufacturers must keep a copy of this notification for five years after shipping each engine and make those documents available to EPA upon request.

(b) Manufacturers of engines other than those certified to standards in 40 CFR part 1054 must certify their stationary SI ICE using the certification procedures required in 40 CFR part 1048, subpart C, and must follow the same test procedures that apply to Large SI nonroad engines under 40 CFR part 1048, but must use the D–1 cycle of International Organization for Standardization 8178–4: 1996(E) (incorporated by reference, see § 60.17) or the test cycle requirements specified in Table 3 to 40 CFR 1048.505, except that Table 3 of 40 CFR 1048.505 applies to high load engines only. Manufacturers of any size may certify their stationary emergency engines at or above 130 hp using assigned deterioration factors established by EPA, consistent with 40 CFR 1048.240. Stationary SI internal combustion engine manufacturers who certify their stationary SI ICE with a maximum engine power less than or equal to 30 KW (40 HP) with a total displacement less than or equal to 1,000 cc to the certification emission standards and other requirements for new nonroad SI

engines in 40 CFR part 1054, and manufacturers of emergency engines that are greater than 25 HP and less than 130 HP who meet the Phase 1 standards in 40 CFR part 1054, appendix I, applicable to class II engines, must certify their stationary SI ICE using the certification and testing procedures required in 40 CFR part 1054, subparts C and F. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, subpart C, to the extent they apply to equipment manufacturers.

* * * * *

(i) For engines being certified to the voluntary certification standards in Table 1 of this subpart, the VOC measurement shall be made by following the procedures in 40 CFR part 1065, subpart C, to determine the total NMHC emissions. As an alternative, manufacturers may measure ethane, as well as methane, for excluding such levels from the total VOC measurement.

■ 28. Revise § 60.4242 to read as follows:

§ 60.4242 What other requirements must I meet if I am a manufacturer of stationary SI internal combustion engines or equipment containing stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

(a) Stationary SI internal combustion engine manufacturers must meet the provisions of 40 CFR parts 1048, 1054, and 1068, as applicable, except that engines certified pursuant to the voluntary certification procedures in § 60.4241 are subject only to the provisions indicated in § 60.4247 and are permitted to provide instructions to owners and operators allowing for deviations from certified configurations, if such deviations are consistent with the provisions of § 60.4241(c) through (f). Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060, as applicable. Labels on engines certified to 40 CFR part 1048 must refer to stationary engines, rather than or in addition to nonroad engines, as appropriate.

(b) An engine manufacturer certifying an engine family or families to standards under this subpart that are identical to standards identified in 40 CFR part 1048 or 1054 for that model year may certify any such family that contains both nonroad and stationary engines as a single engine family and/or may include any such family containing stationary engines in the averaging, banking and trading provisions applicable for such engines under those parts. This paragraph (b) also applies to equipment or component manufacturers certifying to standards under 40 CFR part 1060.

(c) Manufacturers of engine families certified to 40 CFR part 1048 may meet the labeling requirements referred to in paragraph (a) of this section for stationary SI ICE by either adding a separate label containing the information required in paragraph (a) of this section or by adding the words ''and stationary'' after the word ''nonroad'' to the label.

(d) For all engines manufactured on or after January 1, 2011, and for all engines with a maximum engine power greater than 25 HP and less than 130 HP manufactured on or after July 1, 2008, a stationary SI engine manufacturer that certifies an engine family solely to the standards applicable to emergency engines must add a permanent label stating that the engines in that family are for emergency use only. The label must be added according to the labeling requirements specified in 40 CFR 1048.135(b).

(e) All stationary SI engines subject to mandatory certification that do not meet the requirements of this subpart must be labeled and exported according to 40 CFR 1068.230. Manufacturers of stationary engines with a maximum engine power greater than 25 HP that are not certified to standards and other requirements under 40 CFR part 1048 are subject to the labeling provisions of 40 CFR 1048.20 pertaining to excluded stationary engines.

(f) For manufacturers of gaseous-fueled stationary engines required to meet the warranty provisions in 40 CFR 1054.120, we may establish an hour-based warranty period equal to at least the certified emissions life of the engines (in engine operating hours) if we determine that these engines are likely to operate for a number of hours greater than the applicable useful life within 24 months. We will not approve an alternate warranty under this paragraph (f) for nonroad engines. An alternate warranty period approved under this paragraph (f) will be the specified number of engine operating hours or two years, whichever comes first. The engine manufacturer shall request this alternate warranty period in its application for certification or in an earlier submission. We may approve an alternate warranty period for an engine family subject to the following conditions:

(1) The engines must be equipped with non-resettable hour meters.

(2) The engines must be designed to operate for a number of hours substantially greater than the applicable certified emissions life.

(3) The emission-related warranty for the engines may not be shorter than any published warranty offered by the manufacturer without charge for the engines. Similarly, the emission-related warranty for any component shall not be shorter than any published warranty offered by the manufacturer without charge for that component.

■ 29. Amend § 60.4243 by revising paragraph (f) to read as follows:

§ 60.4243 What are my compliance requirements if I am an owner or operator of a stationary SI internal combustion engine?

* * * * *

(f) If you are an owner or operator of a stationary SI internal combustion engine that is less than or equal to 500 HP and you purchase a non-certified engine or you do not operate and maintain your certified stationary SI internal combustion engine and control device according to the manufacturer's written emission-related instructions, you are required to perform initial performance testing as indicated in this section, but you are not required to conduct subsequent performance testing unless the stationary engine undergoes rebuild, major repair or maintenance. Engine rebuilding means to overhaul an engine or to otherwise perform extensive service on the engine (or on a portion of the engine or engine system). For the purpose of this paragraph (f), perform extensive service means to disassemble the engine (or portion of the engine or engine system), inspect and/or replace many of the parts, and reassemble the engine (or portion of the engine or engine system) in such a manner that significantly increases the service life of the resultant engine.

* * * * *

■ 30. Amend § 60.4245 by revising paragraph (a)(3) to read as follows:

§ 60.4245 What are my notification, reporting, and recordkeeping requirements if I am an owner or operator of a stationary SI internal combustion engine?

* * * * *

(a) * * *

(3) If the stationary SI internal combustion engine is a certified engine, documentation from the manufacturer that the engine is certified to meet the emission standards and information as required in 40 CFR parts 1048, 1054, and 1060, as applicable.

* * * * *

■ 31. Amend § 60.4247 by revising paragraph (a) to read as follows:

§ 60.4247 What parts of the mobile source provisions apply to me if I am a manufacturer of stationary SI internal combustion engines or a manufacturer of equipment containing such engines?

(a) Manufacturers certifying to emission standards in 40 CFR part 1054 must meet the provisions of 40 CFR part 1054. Note that 40 CFR part 1054, appendix I, describes various provisions that do not apply for engines meeting Phase 1 standards in 40 CFR part 1054. Manufacturers of equipment containing stationary SI internal combustion engines meeting the provisions of 40 CFR part 1054 must meet the provisions of 40 CFR part 1060 to the extent they apply to equipment manufacturers.

* * * * *

■ 32. Amend § 60.4248 by revising the definition for ''Certified emissions life'' and ''Certified stationary internal combustion engine'' to read as follows:

§ 60.4248 What definitions apply to this subpart?

* * * * *

Certified emissions life means the period during which the engine is designed to properly function in terms of reliability and fuel consumption, without being remanufactured, specified as a number of hours of operation or calendar years, whichever comes first. The values for certified emissions life for stationary SI ICE with a maximum engine power less than or equal to 19 KW (25 HP) are given in 40 CFR 1054.107 and 1060.101, as appropriate. The values for certified emissions life for stationary SI ICE with a maximum engine power greater than 19 KW (25 HP) certified to 40 CFR part 1048 are given in 40 CFR 1048.101(g). The certified emissions life for stationary SI ICE with a maximum engine power greater than 75 KW (100 HP) certified under the voluntary manufacturer certification program of this subpart is 5,000 hours or 7 years, whichever comes first. You may request in your application for certification that we approve a shorter certified emissions life for an engine family. We may approve a shorter certified emissions life, in hours of engine operation but not in years, if we determine that these engines will rarely operate longer than the shorter certified emissions life. If engines identical to those in the engine family have already been produced and are in use, your demonstration must include documentation from such in-use engines. In other cases, your demonstration must include an engineering analysis of information equivalent to such in-use data, such as data from research engines or similar engine models that are already in production. Your demonstration must also include any overhaul interval that you recommend, any mechanical warranty that you offer for the engine or its components, and any relevant customer design specifications. Your demonstration may include any other relevant information. The certified emissions life value may not be shorter than any of the following:

(1) 1,000 hours of operation.

(2) Your recommended overhaul interval.

(3) Your mechanical warranty for the engine.

Certified stationary internal combustion engine means an engine that belongs to an engine family that has a certificate of conformity that complies with the emission standards and requirements in this part, or of 40 CFR part 1048 or 1054, as appropriate.

* * * * *

PART 85—CONTROL OF AIR POLLUTION FROM MOBILE SOURCES

■ 33. The authority citation for part 85 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

Subpart O—[Removed and Reserved]

■ 34. Remove and reserve subpart O, consisting of §§ 85.1401 through 85.1415.

■ 35. Amend § 85.1501 by revising paragraph (a) to read as follows:

§ 85.1501 Applicability.

(a) Except where otherwise indicated, this subpart is applicable to motor vehicles offered for importation or imported into the United States for which the Administrator has promulgated regulations under 40 CFR part 86, subpart D or S, prescribing emission standards, but which are not covered by certificates of conformity issued under section 206(a) of the Clean Air Act (*i.e.*, which are nonconforming vehicles as defined in § 85.1502), as amended, and part 86 at the time of conditional importation. Compliance with regulations under this subpart shall not relieve any person or entity from compliance with other applicable provisions of the Clean Air Act. This subpart no longer applies for heavy-duty engines certified under 40 CFR part 86, subpart A; references in this subpart to ''engines'' therefore apply only for replacement engines intended for installation in motor vehicles that are subject to this subpart.

* * * * *

■ 36. Amend § 85.1511 by adding introductory text and paragraph (b)(5) to read as follows:

§ 85.1511 Exemptions and exclusions.

The exemption provisions of 40 CFR part 1068, subpart D, apply instead of the provisions of this section for heavy-duty motor vehicles and heavy-duty motor vehicle engines regulated under 40 CFR part 86, subpart A, and 40 CFR parts 1036 and 1037. The following provisions apply for other motor vehicles and motor vehicle engines:

* * * * *

(b) * * *

(5) *Export exemption.* Vehicles may qualify for a temporary exemption under the provisions of 40 CFR 1068.325(d).

* * * * *

■ 37. Revise § 85.1514 to read as follows:

§ 85.1514 Treatment of confidential information.

The provisions of 40 CFR 1068.10 apply for information you consider confidential.

■ 38. Amend § 85.1701 by revising paragraph (a)(1) to read as follows:

§ 85.1701 General applicability.

(a) * * *

(1) Beginning January 1, 2014, the exemption provisions of 40 CFR part 1068, subpart C, apply instead of the provisions of this subpart for heavy-duty motor vehicle engines regulated under 40 CFR part 86, subpart A, except that the nonroad competition exemption of 40 CFR 1068.235 and the nonroad hardship exemption provisions of 40 CFR 1068.245, 1068.250, and 1068.255 do not apply for motor vehicle engines. Note that the provisions for emergency vehicle field modifications in § 85.1716 continue to apply for heavy-duty engines.

* * * * *

■ 39. Revise § 85.1712 to read as follows:

§ 85.1712 Treatment of confidential information.

The provisions of 40 CFR 1068.10 apply for information you consider confidential.

■ 40. Revise § 85.1801 to read as follows:

§ 85.1801 Applicability and definitions.

(a) The recall provisions of 40 CFR part 1068, subpart E, apply instead of the provisions of this subpart for heavy-duty motor vehicles and heavy-duty motor vehicle engines regulated under 40 CFR part 86, subpart A, and 40 CFR parts 1036 and 1037. The provisions of this subpart apply for other motor vehicles and motor vehicle engines.

(b) For the purposes of this subpart, except as otherwise provided, words

shall be defined as provided for by sections 214 and 302 of the Clean Air Act, 42 U.S.C. 1857, as amended.

(1) *Act* shall mean the Clean Air Act, 42 U.S.C. 1857, as amended.

(2) *Days* shall mean calendar days.

■ 41. Revise § 85.1807 to read as follows:

§ 85.1807 Public hearings.

Manufacturers may request a hearing as described in 40 CFR part 1068, subpart G.

■ 42. Revise § 85.1808 to read as follows:

§ 85.1808 Treatment of confidential information.

The provisions of 40 CFR 1068.10 apply for information you consider confidential.

■ 43. Amend § 85.1902 by revising paragraph (b)(2) to read as follows:

§ 85.1902 Definitions.

* * * * *

(b) * * *

(2) A defect in the design, materials, or workmanship in one or more emission-related parts, components, systems, software, or elements of design which must function properly to ensure continued compliance with greenhouse gas emission standards in 40 CFR part 86.

* * * * *

■ 44. Amend § 85.2102 by revising paragraph (a)(18) and adding and reserving paragraph (b) to read as follows:

§ 85.2102 Definitions.

(a) * * *

(18) *MOD Director* has the meaning given for ''Designated Compliance Officer'' in 40 CFR 1068.30.

(b) [Reserved]

■ 45. Amend § 85.2115 by revising paragraph (a)(4) to read as follows:

§ 85.2115 Notification of intent to certify.

(a) * * *

(4) Two complete and identical copies of the notification and any subsequent industry comments on any such notification shall be submitted by the aftermarket manufacturer to: MOD Director.

* * * * *

■ 46. Revise § 85.2301 to read as follows:

§ 85.2301 Applicability.

The definitions provided by this subpart are effective February 23, 1995 and apply to all motor vehicles regulated under 40 CFR part 86, subpart S, and to highway motorcycles regulated under 40 CFR part 86, subparts E and F. The definitions and related provisions in 40 CFR parts 1036, 1037, and 1068 apply instead of the provisions in this subpart for heavy-duty motor vehicles and heavy-duty motor vehicle engines regulated under 40 CFR part 86, subpart A, and 40 CFR parts 1036 and 1037.

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

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

Authority: 42 U.S.C. 7401–7671q.

■ 48. Section 86.1 is amended by:

■ a. Revising the last sentence of paragraph (a);

■ b. Redesignating paragraphs (b)(19) through (21) as paragraphs (b)(21) through (23); and

■ c. Adding new paragraphs (b)(19) and (20).

The revision and additions read as follows:

§ 86.1 Incorporation by reference.

(a) * * * For information on the availability of this material at NARA, email *fedreg.legal@nara.gov*, or go to *www.archives.gov/federal-register/cfr/ibr-locations.html*.

(b) * * *

(19) ASTM D5769–20, Standard Test Method for Determination of Benzene, Toluene, and Total Aromatics in Finished Gasolines by Gas Chromatography/Mass Spectrometry, approved June 1, 2020 (''ASTM5769''), IBR approved for §§ 86.113–04(a), 86.213(a), and 86.513(a).

(20) ASTM D6550–20, Standard Test Method for Determination of Olefin Content of Gasolines by Supercritical-Fluid Chromatography, approved July 1, 2020 (''ASTM D6550''), IBR approved for §§ 86.113–04(a), 86.213(a), and 86.513(a).

* * * * *

■ 49. Section 86.004–15 is amended by revising paragraph (a)(1) to read as follows:

§ 86.004–15 NO_X plus NMHC and particulate averaging, trading, and banking for heavy-duty engines.

(a) *Overview.* (1) Heavy-duty engines eligible for NO_X plus NMHC and particulate averaging, trading and banking programs are described in the applicable emission standards sections in this subpart. For manufacturers not selecting Options 1 or 2 contained in § 86.005–10(f), the ABT program requirements contained in § 86.000–15 apply for 2004 model year Otto-cycle engines, rather than the provisions contained in this section. Participation in these programs is voluntary.

* * * * *

■ 50. Section 86.010–18 is amended by—

■ a. Revising paragraphs (g)(2)(ii)(B) and (g)(2)(iii)(C).

■ b. Adding paragraph (g)(2)(iii)(D).

■ c. Removing and reserving paragraph (l)(2)(ii).

■ d. Revising paragraphs (p)(3) and (4).

The revisions and additions read as follows:

§ 86.010–18 On-board Diagnostics for engines used in applications greater than 14,000 pounds GVWR.

* * * * *

(g) * * *

(2) * * *

(ii) * * *

(B) For model years 2013 and later, on engines equipped with sensors that can detect combustion or combustion quality (*e.g.*, for use in engines with homogeneous charge compression ignition (HCCI) control systems), the OBD system must detect a misfire malfunction when the percentage of misfire is 5 percent or greater.

(iii) * * *

(C) For model years 2013 through 2018, on engines equipped with sensors that can detect combustion or combustion quality, the OBD system must monitor continuously for engine misfire when positive torque is between 20 and 75 percent of peak torque, and engine speed is less than 75 percent of maximum engine speed. If a monitoring system cannot detect all misfire patterns under all required engine speed and load conditions, the manufacturer may request that the Administrator approve the monitoring system nonetheless. In evaluating the manufacturer's request, the Administrator will consider the following factors: The magnitude of the region(s) in which misfire detection is limited; the degree to which misfire detection is limited in the region(s) (*i.e.*, the probability of detection of misfire events); the frequency with which said region(s) are expected to be encountered in-use; the type of misfire patterns for which misfire detection is troublesome; and demonstration that the monitoring technology employed is not inherently incapable of detecting misfire under required conditions (*i.e.*, compliance can be achieved on other engines). The evaluation will be based on the following misfire patterns: Equally spaced misfire occurring on randomly selected cylinders; single cylinder continuous misfire; and, paired cylinder (cylinders firing at the same crank angle) continuous misfire.

(D) For 20 percent of 2019 model year, 50 percent of 2020 model, and 100 percent of 2021 and later model year diesel engines (percentage based on the manufacturer's projected sales volume of all diesel engines subject to this regulation) equipped with sensors that can detect combustion or combustion quality, the OBD system must monitor continuously for engine misfire under all positive torque engine speed conditions except within the following range: The engine operating region bound by the positive torque line (*i.e.*, engine torque with transmission in neutral) and the two following points: engine speed of 50 percent of maximum engine speed with the engine torque at the positive torque line, and 100 percent of the maximum engine speed with the engine torque at 10 percent of peak torque above the positive torque line. If a monitoring system cannot detect all misfire patterns under all required engine speed and load conditions, the manufacturer may request that the Administrator approve the monitoring system nonetheless. In evaluating the manufacturer's request, the Administrator will consider the following factors: The magnitude of the region(s) in which misfire detection is limited; the degree to which misfire detection is limited in the region(s) (*i.e.*, the probability of detection of misfire events); the frequency with which said region(s) are expected to be encountered in-use; the type of misfire patterns for which misfire detection is troublesome; and demonstration that the monitoring technology employed is not inherently incapable of detecting misfire under required conditions (*i.e.*, compliance can be achieved on other engines). The evaluation will be based on the following misfire patterns: Equally spaced misfire occurring on randomly selected cylinders; single cylinder continuous misfire; and, paired cylinder (cylinders firing at the same crank angle) continuous misfire.

* * * * *

(p) * * *

(3) *For model years 2016 through 2018.* (i) On the engine ratings tested according to paragraph (l)(2)(iii) of this section, the certification emissions thresholds shall apply in-use.

(ii) On the manufacturer's remaining engine ratings, separate in-use emissions thresholds shall apply. These thresholds are determined by doubling the applicable thresholds as shown in Table 1 of paragraph (g) of this section and Table 2 of paragraph (h) of this section. The resultant thresholds apply only in-use and do not apply for certification or selective enforcement auditing.

(iii) For monitors subject to meeting the minimum in-use monitor performance ratio of 0.100 in paragraph (d)(1)(ii) of this section, the OBD system shall not be considered noncompliant unless a representative sample indicates the in-use ratio is below 0.088 except for filtering performance monitors for PM filters (paragraph (g)(8)(ii)(A) of this section) and missing substrate monitors (paragraph (g)(8)(ii)(D) of this section) for which the OBD system shall not be considered noncompliant unless a representative sample indicates the in-use ratio is below 0.050.

(iv) An OBD system shall not be considered noncompliant solely due to a failure or deterioration mode of a monitored component or system that could not have been reasonably foreseen to occur by the manufacturer.

(4) *For model years 2019 and later.* (i) On all engine ratings, the certification emissions thresholds shall apply in-use.

(ii) For monitors subject to meeting the minimum in-use monitor performance ratio of 0.100 in paragraph (d)(1)(ii) of this section, the OBD system shall not be considered noncompliant unless a representative sample indicates the in-use ratio is below 0.088.

(iii) An OBD system shall not be considered noncompliant solely due to a failure or deterioration mode of a monitored component or system that the manufacturer could not have reasonably foreseen.

* * * * *

■ 51. Section 86.113–04 is amended by revising paragraph (a)(1) to read as follows:

§ 86.113–04 Fuel specifications.

* * * * *

(a) * * *

(1) Gasoline meeting the following specifications, or substantially equivalent specifications approved by the Administrator, must be used for exhaust and evaporative testing:

TABLE 1 TO § 86.113–04—TEST FUEL SPECIFICATIONS FOR GASOLINE WITHOUT ETHANOL

Item	Regular	Reference procedure [1]
Research octane, Minimum [2]	93	ASTM D2699
Octane sensitivity [2]	7.5	ASTM D2700
Distillation Range (°F):		
Evaporated initial boiling point [3]	75–95	ASTM D86
10% evaporated	120–135.	
50% evaporated	200–230.	
90% evaporated	300–325.	
Evaporated final boiling point	415 Maximum.	
Total Aromatic Hydrocarbon (vol %)	35% Maximum	ASTM D1319 or ASTM D5769
Olefins (vol %) [4]	10% Maximum	ASTM D1319 or ASTM D6550
Lead, g/gallon (g/liter), Maximum	0.050 (0.013)	ASTM D3237
Phosphorous, g/gallon (g/liter), Maximum	0.005 (0.0013)	ASTM D3231
Total sulfur, wt. % [5]	0.0015–0.008	ASTM D2622
Dry Vapor Pressure Equivalent (*DVPE*), kPa (psi) [6]	60.0–63.4 (8.7–9.2)	ASTM D5191

[1] Incorporated by reference, see § 86.1.

[2] Octane specifications are optional for manufacturer testing.

[3] For testing at altitudes above 1,219 m (4,000 feet), the specified range is 75–105 °F.

[4] ASTM D6550 prescribes measurement of olefin concentration in mass %. Multiply this result by 0.857 and round to the first decimal place to determine the olefin concentration in volume %.

[5] Sulfur concentration will not exceed 0.0045 weight percent for EPA testing.

[6] For testing unrelated to evaporative emission control, the specified range is 54.8–63.7 kPa (8.0–9.2 psi). For testing at altitudes above 1,219 m (4,000 feet), the specified range is 52.0–55.4 kPa (7.6–8.0 psi). Calculate dry vapor pressure equivalent, *DVPE*, based on the measured total vapor pressure, p_T, using the following equation: *DVPE* (kPa) = 0.956 · p_T − 2.39 (or *DVPE* (psi) = 0.956 · p_T − 0.347). *DVPE* is intended to be equivalent to Reid Vapor Pressure using a different test method.

* * * * *

■ 52. Section 86.129–00 is amended by revising paragraph (f)(1)(ii)(C) to read as follows:

§ 86.129–00 Road load power, test weight, and inertia weight class determination.

* * * * *

(f)(1) * * *

(ii) * * *

(C) Regardless of other requirements in this section relating to the testing of HLDTs, for Tier 2 and Tier 3 HLDTs, the test weight basis for FTP and SFTP testing (both US06 and SC03), if applicable, is the vehicle curb weight plus 300 pounds. For MDPVs certified to standards in bin 11 in Tables S04–1 and 2 in § 86.1811–04, the test weight basis must be adjusted loaded vehicle weight (ALVW) as defined in this part.

* * * * *

■ 53. Section 86.130–96 is amended by revising paragraph (a) to read as follows:

§ 86.130–96 Test sequence; general requirements.

* * * * *

(a)(1) *Gasoline- and methanol-fueled vehicles.* The test sequence shown in Figure 1 of 40 CFR 1066.801 shows the steps encountered as the test vehicle undergoes the procedures subsequently described to determine conformity with the standards set forth. The full three-diurnal sequence depicted in Figure 1 of 40 CFR 1066.801 tests vehicles for all sources of evaporative emissions. The supplemental two-diurnal test sequence is designed to verify that vehicles sufficiently purge their evaporative canisters during the exhaust emission test. Sections 86.132–96, 86.133–96, and 86.138–96 describe the separate specifications of the supplemental two-diurnal test sequence.

(2) *Gaseous-fueled vehicles.* The test sequence shown in Figure 1 of 40 CFR 1066.801 shows the steps encountered as the test vehicle undergoes the procedures subsequently described to determine conformity with the standards set forth, with the exception that the fuel drain and fill and precondition canister steps are not required for gaseous-fueled vehicles. In addition, the supplemental two-diurnal test and the running loss test are not required.

* * * * *

■ 54. Section 86.213 is amended by revising paragraph (a)(2) to read as follows:

§ 86.213 Fuel specifications.

(a) * * *

(2) You may use the test fuel specified in this paragraph (a)(2) for vehicles that are not yet subject to exhaust testing with an ethanol-blend test fuel under § 86.113. Manufacturers may certify based on this fuel using carryover data until testing with the ethanol-blend test fuel is required. The following specifications apply for gasoline test fuel without ethanol:

TABLE 1 OF § 86.213—COLD TEMPERATURE TEST FUEL SPECIFICATIONS FOR GASOLINE WITHOUT ETHANOL

Item	Regular	Premium	Reference procedure [1]
(RON+MON)/2 [2]	87.8±0.3	92.3±0.5	ASTM D2699 ASTM D2700
Sensitivity [3]	7.5	7.5	ASTM D2699 ASTM D2700
Distillation Range (°F):			
Evaporated initial boiling point	76–96	76–96	ASTM D86
10% evaporated	98–118	105–125.	
50% evaporated	179–214	195–225.	
90% evaporated	316–346	316–346.	
Evaporated final boiling point	413 Maximum	413 Maximum.	
Total Aromatic Hydrocarbon (vol %)	26.4±4.0	32.0±4.0	ASTM D1319 or ASTM D5769
Olefins (vol %) [4]	12.5±5.0	10.5±5.0	ASTM D1319 or ASTM D6550
Lead, g/gallon	0.01, Maximum.	0.01, Maximum.	ASTM D3237
Phosphorous, g/gallon	0.005 Maximum.	0.005 Maximum.	ASTM D3231
Total sulfur, wt. % [3]	0.0015–0.008	0.0015–0.008	ASTM D2622
RVP, psi	11.5±0.3	11.5±0.3	ASTM D5191

[1] Incorporated by reference, see § 86.1.
[2] Octane specifications are optional for manufacturer testing. The premium fuel specifications apply for vehicles designed to use high-octane premium fuel.
[3] Sulfur concentration will not exceed 0.0045 weight percent for EPA testing.
[4] ASTM D6550 prescribes measurement of olefin concentration in mass %. Multiply this result by 0.857 and round to the first decimal place to determine the olefin concentration in volume %.

* * * * *

§ 86.401–97 [Removed]

■ 55. Remove § 86.401–97.

■ 56. Amend § 86.408–78 by adding paragraphs (c) and (d) to read as follows:

§ 86.408–78 General standards; increase in emissions; unsafe conditions.

* * * * *

(c) If a new motorcycle is designed to require manual adjustment to compensate for changing altitude, the manufacturer must include the appropriate instructions in the application for certification. EPA will review the instructions to ensure that properly adjusted motorcycles will meet emission standards at both low altitude and high altitude.

(d) An action to install parts, modify engines, or perform other adjustments to compensate for changing altitude is not prohibited under 42 U.S.C. 7522 as long as it is done consistent with the manufacturer's instructions.

§ 86.413–78 [Removed]

■ 57. Remove § 86.413–78.

■ 58. Amend § 86.419–2006 by revising paragraph (b) introductory text to read as follows:

§ 86.419–2006 Engine displacement, motorcycle classes.

* * * * *

(b) Motorcycles will be divided into classes and subclasses based on engine displacement.

* * * * *

■ 59. Amend § 86.427–78 by revising paragraph (a)(1) to read as follows:

§ 86.427–78 Emission tests.

(a)(1) Each test vehicle shall be driven with all emission control systems installed and operating for the following total test distances, or for such lesser distances as the Administrator may agree to as meeting the objectives of this procedure. (See § 86.419 for class explanation.)

TABLE 1 TO § 86.427–78—TEST SPECIFICATIONS BY DISPLACEMENT CLASS

Displacement class	Total test distance (kilometers)	Minimum test distance (kilometers)	Minimum number of tests
I–A	6,000	2,500	4
I–B	6,000	2,500	4
II	9,000	2,500	4
III	15,000	3,500	4

* * * * *

■ 60. Amend § 86.435–78 by revising paragraph (b)(1) to read as follows:

§ 86.435–78 Extrapolated emission values.

* * * * *

(b) * * *

(1) If the useful life emissions are at or below the standards, certification will be granted.

* * * * *

■ 61. Amend § 86.436–78 by revising paragraph (d) to read as follows:

§ 86.436–78 Additional service accumulation.

* * * * *

(d) To qualify for certification:

(1) The full life emission test results must be at or below the standards in this subpart; and

(2) The deterioration line must be below the standard at the minimum test distance and the useful life, or all points used to generate the line, must be at or below the standard.

* * * * *

■ 62. Amend § 86.513 by revising paragraph (a)(1) and adding paragraph (a)(3) to read as follows:

§ 86.513 Fuel and engine lubricant specifications.

(a) * * *

(1) Use gasoline meeting the following specifications for exhaust and evaporative emission testing:

TABLE 1 OF § 86.513—GASOLINE TEST FUEL SPECIFICATIONS

Item	Value	Procedure [1]
Distillation Range:		
1. Initial boiling point, °C	23.9–35.0 [2]	ASTM D86
2. 10% point, °C	48.9–57.2.	
3. 50% point, °C	93.3–110.0.	
4. 90% point, °C	148.9–162.8.	
5. End point, °C	212.8 maximum.	
Total aromatic hydrocarbon, volume %	35 maximum	ASTM D1319 or ASTM D5769
Olefins, volume % [3]	10 maximum	ASTM D1319 or ASTM D6550
Lead (organic), g/liter	0.013 maximum	ASTM D3237
Phosphorous, g/liter	0.0013 maximum	ASTM D3231
Sulfur, weight %	0.008 maximum	ASTM D2622
Dry Vapor Pressure Equivalent (*DVPE*), kPa	55.2 to 63.4 [4]	ASTM D5191

[1] Incorporated by reference, see § 86.1.

[2] For testing at altitudes above 1,219 m, the specified initial boiling point range is (23.9 to 40.6) °C.

[3] ASTM D6550 prescribes measurement of olefin concentration in mass %. Multiply this result by 0.857 and round to the first decimal place to determine the olefin concentration in volume %.

[4] For testing at altitudes above 1,219 m, the specified volatility range is 52 to 55 kPa. Calculate dry vapor pressure equivalent, *DVPE*, based on the measured total vapor pressure, p_T, using the following equation: *DVPE* (kPa) = 0.956 · p_T − 2.39 (or *DVPE* (psi) = 0.956 · p_T − 0.347). *DVPE* is intended to be equivalent to Reid Vapor Pressure using a different test method.

* * * * *

(3) Manufacturers may alternatively use ethanol-blended gasoline meeting the specifications described in 40 CFR 1065.710(b) for general testing without our advance approval. Manufacturers using the ethanol-blended fuel for certifying a given engine family may also use it for any testing for that engine family under this part. If manufacturers use the ethanol-blended fuel for certifying a given engine family, EPA may use the ethanol-blended fuel or the neat gasoline test fuel specified in this section for that engine family. Manufacturers may also request to use fuels meeting alternate specifications as described in 40 CFR 1065.701(b).

* * * * *

■ 63. Revise § 86.531–78 to read as follows:

§ 86.531–78 Vehicle preparation.

(a) The manufacturer shall provide additional fittings and adapters, as required by the Administrator, to accommodate a fuel drain at the lowest point possible in the tank(s) as installed on the vehicle, and to provide for exhaust sample collection.

(b) Connect the motorcycle's exhaust system to the analyzer for all exhaust emission measurements. Seal all known leaks in the exhaust system. Make sure any remaining leaks do not affect the demonstration that the motorcycle complies with standards in subpart E of this part.

■ 64. Revise § 86.1362 to read as follows:

§ 86.1362 Steady-state testing with a ramped-modal cycle.

(a) This section describes how to test engines under steady-state conditions. Perform ramped-modal testing as described in 40 CFR 1036.505 and 40 CFR part 1065, except as specified in this section.

(b) Measure emissions by testing the engine on a dynamometer with the following ramped-modal duty cycle to determine whether it meets the applicable steady-state emission standards in this part and 40 CFR part 1036:

Table 1 of §86.1362—Ramped-Modal Duty Cycle

RMC Mode	Engine testing			Hybrid powertrain testing									CO_2 weighting (percent)[5]
	Time in mode (seconds)	Engine Speed[1,2]	Torque (percent)[2,3]	Vehicle speed (mi/hr)[4]	Road-grade coefficients[4]								
					a	*b*	*c*	*d*	*e*	*f*	*g*	*h*	
1a Steady-state	170	Warm Idle	0	Warm Idle	0	0	0	0	0	0	0	0	6
1b Transition	20	Linear Transition	Linear Transition	Linear Transition	-1.898E-08	-5.895E-07	3.780E-05	4.706E-03	6.550E-04	-2.679E-02	-1.027E+00	1.542E+01	
2a Steady-state	173	A	100	v_{refA}	-1.235E-08	-5.506E-07	3.954E-05	1.248E-03	5.287E-04	-3.117E-02	-3.263E-01	1.627E+01	9
2b Transition	20	Linear Transition	Linear Transition	Linear Transition	-1.640E-09	-4.899E-07	2.493E-05	5.702E-04	4.768E-04	-2.389E-02	-2.712E-01	1.206E+01	
3a Steady-state	219	B	50	v_{refB}	8.337E-09	-4.758E-07	1.291E-05	2.874E-04	4.528E-04	-1.803E-02	-1.830E-01	8.808E+00	10
3b Transition	20	B	Linear Transition	v_{refB}	4.263E-09	-5.102E-07	2.010E-05	3.703E-04	4.852E-04	-2.242E-02	-2.068E-01	1.074E+01	
4a Steady-state	217	B	75	v_{refB}	1.686E-10	-5.226E-07	2.579E-05	5.521E-04	5.005E-04	-2.561E-02	-2.393E-01	1.285E+01	10
4b Transition	20	Linear Transition	Linear Transition	Linear Transition	6.556E-10	-4.971E-07	2.226E-05	5.293E-04	4.629E-04	-2.185E-02	-1.819E-01	1.086E+01	
5a Steady-state	103	A	50	v_{refA}	3.833E-09	-4.343E-07	1.369E-05	4.755E-04	4.146E-04	-1.605E-02	-1.899E-01	8.200E+00	12
5b Transition	20	A	Linear Transition	v_{refA}	-7.526E-11	-4.680E-07	2.035E-05	7.214E-04	4.478E-04	-2.012E-02	-2.306E-01	1.043E+01	
6a Steady-state	100	A	75	v_{refA}	-4.195E-09	-4.855E-07	2.624E-05	8.345E-04	4.669E-04	-2.338E-02	-2.547E-01	1.215E+01	12
6b Transition	20	A	Linear Transition	v_{refA}	3.185E-09	-4.545E-07	1.549E-05	6.220E-04	4.308E-04	-1.724E-02	-2.093E-01	8.906E+00	
7a Steady-state	103	A	25	v_{refA}	1.202E-08	-3.766E-07	6.943E-07	1.107E-04	3.579E-04	-8.468E-03	-1.243E-01	4.195E+00	12
7b Transition	20	Linear Transition	Linear Transition	Linear Transition	1.481E-09	-5.004E-07	2.151E-05	6.028E-04	4.765E-04	-2.197E-02	-2.669E-01	1.109E+01	
8a Steady-state	194	B	100	v_{refB}	-8.171E-09	-5.682E-07	3.880E-05	8.171E-04	5.462E-04	-3.315E-02	-2.957E-01	1.689E+01	9
8b Transition	20	B	Linear Transition	v_{refB}	3.527E-09	-5.294E-07	2.221E-05	4.955E-04	4.976E-04	-2.363E-02	-2.253E-01	1.156E+01	

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9a Steady-state	218	B	25	v_{refB}	1.665E-08	-4.288E-07	-1.393E-07	2.170E-05	4.062E-04	-1.045E-02	-1.266E-01	4.762E+00	9
9b Transition	20	Linear Transition	Linear Transition	Linear Transition	7.236E-09	-5.497E-07	1.998E-05	1.381E-04	5.110E-04	-2.333E-02	-2.154E-01	1.024E+01	
10a Steady-state	171	C	100	v_{refC}	-7.509E-10	-5.928E-07	3.454E-05	5.067E-04	5.670E-04	-3.353E-02	-2.648E-01	1.649E+01	2
10b Transition	20	C	Linear Transition	v_{refC}	1.064E-08	-5.343E-07	1.678E-05	2.591E-04	5.101E-04	-2.331E-02	-2.017E-01	1.119E+01	
11a Steady-state	102	C	25	v_{refC}	2.235E-08	-4.756E-07	-2.078E-06	-6.006E-05	4.509E-04	-1.213E-02	-1.261E-01	5.090E+00	1
11b Transition	20	C	Linear Transition	v_{refC}	1.550E-08	-5.417E-07	1.114E-05	8.438E-05	5.051E-04	-2.005E-02	-1.679E-01	8.734E+00	
12a Steady-state	100	C	75	v_{refC}	7.160E-09	-5.569E-07	2.234E-05	3.107E-04	5.301E-04	-2.644E-02	-2.177E-01	1.266E+01	1
12b Transition	20	C	Linear Transition	v_{refC}	9.906E-09	-5.292E-07	1.694E-05	2.460E-04	5.058E-04	-2.304E-02	-1.990E-01	1.103E+01	
13a Steady-state	102	C	50	v_{refC}	1.471E-08	-5.118E-07	9.881E-06	1.002E-04	4.864E-04	-1.904E-02	-1.678E-01	8.738E+00	1
13b Transition	20	Linear Transition	Linear Transition	Linear Transition	-1.482E-09	-1.992E-06	6.475E-05	-1.393E-02	1.229E-03	-3.967E-02	1.135E+00	-7.267E+00	
14 Steady-state	168	Warm Idle	0	Warm Idle	0	0	0	0	0	0	0	0	6

[1]Engine speed terms are defined in 40 CFR part 1065.

[2]Advance from one mode to the next within a 20 second transition phase. During the transition phase, command a linear progression from the settings of the current mode to the settings of the next mode.

[3]The percent torque is relative to maximum torque at the commanded engine speed.

[4]See 40 CFR 1036.505(c) for a description of powertrain testing with the ramped-modal cycle, including the equation that uses the road-grade coefficients.

[5]Use the specified weighting factors to calculate composite emission results for CO_2 as specified in 40 CFR 1036.501.

Subpart P—[Removed and Reserved]

■ 65. Remove and reserve subpart P.

Subpart Q—[Removed and Reserved]

■ 66. Remove and reserve subpart Q.

■ 67. Amend § 86.1803–01 by revising the definitions for ''Heavy-duty vehicle'' and ''Light-duty truck'' to read as follows:

§ 86.1803–01 Definitions.

* * * * *

Heavy-duty vehicle means any complete or incomplete motor vehicle rated at more than 8,500 pounds GVWR. Heavy-duty vehicle also includes incomplete vehicles that have a curb weight above 6,000 pounds or a basic vehicle frontal area greater than 45 square feet. Note that MDPVs are heavy-duty vehicles that are in many cases subject to requirements that apply for light-duty trucks.

* * * * *

Light-duty truck means any motor vehicle that is not a heavy-duty vehicle, but is:

(1) Designed primarily for purposes of transportation of property or is a derivation of such a vehicle; or

(2) Designed primarily for transportation of persons and has a capacity of more than 12 persons; or

(3) Available with special features enabling off-street or off-highway operation and use.

* * * * *

■ 68. Amend § 86.1811–17 by revising paragraph (b)(8)(iii)(C) to read as follows:

§ 86.1811–17 Exhaust emission standards for light-duty vehicles, light-duty trucks and medium-duty passenger vehicles.

* * * * *

(b) * * *

(8) * * *

(iii) * * *

(C) Vehicles must comply with the Tier 2 SFTP emission standards for NMHC + NO_X and CO for 4,000-mile testing that are specified in § 86.1811–04(f)(1) if they are certified to transitional Bin 85 or Bin 110 standards, or if they are certified based on a fuel without ethanol, or if they are not certified to the Tier 3 p.m. standard. Note that the standards in this paragraph (b)(8)(iii)(C) apply under this section for alternative fueled vehicles, for flexible fueled vehicles when operated on a fuel other than gasoline or diesel fuel, and for MDPVs, even though these vehicles were not subject to the SFTP standards in the Tier 2 program.

* * * * *

■ 69. Amend § 86.1813–17 by revising the introductory text and paragraph (a)(2)(i) introductory text to read as follows:

§ 86.1813–17 Evaporative and refueling emission standards.

Vehicles must meet evaporative and refueling emission standards as specified in this section. These emission standards apply for heavy duty vehicles above 14,000 pounds GVWR as specified in § 86.1801. These emission standards apply for total hydrocarbon equivalent (THCE) measurements using the test procedures specified in subpart B of this part, as appropriate. Note that § 86.1829 allows you to certify without testing in certain circumstances. These evaporative and refueling emission standards do not apply for electric vehicles, fuel cell vehicles, or diesel-fueled vehicles, except as specified in paragraph (b) of this section. Unless otherwise specified, MDPVs are subject to all the same provisions of this section that apply to LDT4.

(a) * * *

(2) * * *

(i) The emission standard for the sum of diurnal and hot soak measurements from the two-diurnal test sequence and the three-diurnal test sequence is based on a fleet average in a given model year. You must specify a family emission limit (FEL) for each evaporative family. The FEL serves as the emission standard for the evaporative family with respect to all required diurnal and hot soak testing. Calculate your fleet-average emission level as described in § 86.1860 based on the FEL that applies for low-altitude testing to show that you meet the specified standard. For multi-fueled vehicles, calculate fleet-average emission levels based only on emission levels for testing with gasoline. You may generate emission credits for banking and trading and you may use banked or traded credits for demonstrating compliance with the diurnal plus hot soak emission standard for vehicles required to meet the Tier 3 standards, other than gaseous-fueled vehicles, as described in § 86.1861 starting in model year 2017. You comply with the emission standard for a given model year if you have enough credits to show that your fleet-average emission level is at or below the applicable standard. You may exchange credits between or among evaporative families within an averaging set as described in § 86.1861. Separate diurnal plus hot soak emission standards apply for each evaporative/refueling emission family as shown for high-altitude conditions. The sum of diurnal and hot soak measurements may not exceed the following Tier 3 standards:

* * * * *

■ 70. Amend § 86.1817–05 by revising paragraph (a)(1) to read as follows:

§ 86.1817–05 Complete heavy-duty vehicle averaging, trading, and banking program.

(a) * * *

(1) Complete heavy-duty vehicles eligible for the NO_X averaging, trading, and banking program are described in the applicable emission standards section of this subpart. Participation in this averaging, trading, and banking program is voluntary.

* * * * *

■ 71. Amend § 86.1818–12 by revising paragraph (d) to read as follows:

§ 86.1818–12 Greenhouse gas emission standards for light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles.

* * * * *

(d) *In-use CO_2 exhaust emission standards.* The in-use CO_2 exhaust emission standard shall be the combined city/highway carbon-related exhaust emission value calculated for the appropriate vehicle carline/subconfiguration according to the provisions of § 600.113–12(g)(4) of this chapter adjusted by the deterioration factor from § 86.1823–08(m). Multiply the result by 1.1 and round to the nearest whole gram per mile. For in-use vehicle carlines/subconfigurations for which a combined city/highway carbon-related exhaust emission value was not determined under § 600.113–12(g)(4) of this chapter, the in-use CO_2 exhaust emission standard shall be the combined city/highway carbon-related exhaust emission value calculated according to the provisions of § 600.208 of this chapter for the vehicle model type (except that total model year production data shall be used instead of sales projections) adjusted by the deterioration factor from § 86.1823–08(m). Multiply the result by 1.1 and round to the nearest whole gram per mile. For vehicles that are capable of operating on multiple fuels, except plug-in hybrid electric vehicles, a separate in-use standard shall be determined for each fuel that the vehicle is capable of operating on. The standards in this paragraph (d) apply to in-use testing performed by the manufacturer pursuant to regulations at §§ 86.1845 and 86.1846 and to in-use testing performed by EPA.

* * * * *

■ 72. Amend § 86.1838–01 by revising paragraph (c)(2)(iii) to read as follows:

§ 86.1838–01 Small-volume manufacturer certification procedures.

* * * * *

(c) * * *

(2) * * *

(iii) The provisions of § 86.1845–04(c)(2) that require one vehicle of each test group during high mileage in-use verification testing to have a minimum odometer mileage of 75 percent of the full useful life mileage do not apply.

* * * * *

■ 73. Amend § 86.1868–12 by revising paragraph (g) introductory text and adding paragraph (g)(5) to read as follows:

§ 86.1868–12 CO_2 credits for improving the efficiency of air conditioning systems.

* * * * *

(g) *AC17 validation testing and reporting requirements.* For 2020 and later model years, manufacturers must validate air conditioning credits by using the AC17 Test Procedure in 40 CFR 1066.845 as follows:

* * * * *

(5) AC17 testing requirements apply as follows for electric vehicles and plug-in hybrid electric vehicles:

(i) Manufacturers may omit AC17 testing for electric vehicles. Electric vehicles may qualify for air conditioning efficiency credits based on identified technologies, without testing. The application for certification must include a detailed description of the vehicle's air conditioning system and identify any technology items eligible for air conditioning efficiency credits. Include additional supporting information to justify the air conditioning credit for each technology.

(ii) The provisions of paragraph (g)(5)(i) of this section also apply for plug-in hybrid electric vehicles if they have an all electric range of at least 60 miles (combined city and highway) after adjustment to reflect actual in-use driving conditions (see 40 CFR 600.311(j)), and they do not rely on the engine to cool the vehicle's cabin for the ambient and driving conditions represented by the AC17 test.

(iii) If AC17 testing is required for plug-in hybrid electric vehicles, perform this testing in charge-sustaining mode.

* * * * *

■ 74. Part 88 is revised to read as follows:

PART 88—CLEAN-FUEL VEHICLES

Sec.
88.1 General applicability.
88.2 through 88.3 [Reserved]

Authority: 42 U.S.C. 7410, 7418, 7581, 7582, 7583, 7584, 7586, 7588, 7589, 7601(a).

§ 88.1 General applicability.

(a) The Clean Air Act includes provisions intended to promote the development and sale of clean-fuel vehicles (see 42 U.S.C. 7581–7589). This takes the form of credit incentives for State Implementation Plans. The specified clean-fuel vehicle standards to qualify for these credits are now uniformly less stringent than the emission standards that apply for new vehicles and new engines under 40 CFR parts 86 and 1036.

(b) The following provisions apply for purposes of State Implementation Plans that continue to reference the Clean Fuel Fleet Program:

(1) Vehicles and engines certified to current emission standards under 40 CFR part 86 or 1036 are deemed to also meet the Clean Fuel Fleet standards as Ultra Low-Emission Vehicles.

(2) Vehicles and engines meeting requirements as specified in paragraph (a)(1) of this section with a fuel system designed to not vent fuel vapors to the atmosphere are also deemed to meet the Clean Fuel Fleet standards as Inherently Low-Emission Vehicles. This paragraph (b)(2) applies for vehicles using diesel fuel, liquefied petroleum gas, or compressed natural gas. It does not apply for vehicles using gasoline, ethanol, methanol, or liquefied natural gas.

(3) The following types of vehicles qualify as Zero Emission Vehicles:

(i) Electric vehicles (see 40 CFR 86.1803–01).

(ii) Any other vehicle with a fuel that contains no carbon or nitrogen compounds, that has no evaporative emissions, and that burns without forming oxides of nitrogen, carbon monoxide, formaldehyde, particulate matter, or hydrocarbon compounds. This paragraph (b)(3)(i) applies equally for all engines installed on the vehicle.

§§ 88.2 through 88.3 [Reserved]

■ 75. Part 89 is revised to read as follows:

PART 89—CONTROL OF EMISSIONS FROM NEW AND IN-USE NONROAD COMPRESSION-IGNITION ENGINES

Sec.
89.1 Applicability.
89.2 through 89.3 [Reserved]

Authority: 42 U.S.C. 7401–7671q.

§ 89.1 Applicability.

The Environmental Protection Agency adopted emission standards for model year 1996 and later nonroad compression-ignition engines under this part. EPA has migrated regulatory requirements for these engines to 40 CFR part 1039, with additional testing and compliance provisions in 40 CFR parts 1065 and 1068. The Tier 1, Tier 2, and Tier 3 standards originally adopted in this part are identified in 40 CFR part 1039, appendix I. See 40 CFR 1039.1 for information regarding the timing of the transition to 40 CFR part 1039, and for information regarding regulations that continue to apply for engines that manufacturers originally certified or otherwise produced under this part.

§§ 89.2 through 89.3 [Reserved]

■ 76. Part 90 is revised to read as follows:

PART 90—CONTROL OF EMISSIONS FROM NONROAD SPARK-IGNITION ENGINES AT OR BELOW 19 KILOWATTS

Sec.
90.1 Applicability.
90.2 through 90.3 [Reserved]

Authority: 42 U.S.C. 7401–7671q.

§ 90.1 Applicability.

The Environmental Protection Agency adopted emission standards for model year 1997 and later nonroad spark-ignition engines below 19 kW under this part. EPA has migrated regulatory requirements for these engines to 40 CFR part 1054, with additional testing and compliance provisions in 40 CFR parts 1065 and 1068. The Phase 1 and Phase 2 standards originally adopted in this part are identified in 40 CFR part 1054, appendix I. See 40 CFR 1054.1 for information regarding the timing of the transition to 40 CFR part 1054, and for information regarding regulations that continue to apply for engines that manufacturers originally certified or otherwise produced under this part.

§§ 90.2 through 90.3 [Reserved]

■ 77. Part 91 is revised to read as follows:

PART 91—CONTROL OF EMISSIONS FROM MARINE SPARK-IGNITION ENGINES

Sec.
91.1 Applicability.
91.2 through 91.3 [Reserved]

Authority: 42 U.S.C. 7401–7671q.

§ 91.1 Applicability.

The Environmental Protection Agency adopted emission standards for model year 1998 and later marine spark-ignition engines under this part, except that the standards of this part did not apply to sterndrive/inboard engines. EPA has migrated regulatory requirements for these engines to 40 CFR part 1045, with additional testing

and compliance provisions in 40 CFR parts 1065 and 1068. The standards originally adopted in this part are identified in 40 CFR part 1045, appendix I. See 40 CFR 1045.1 for information regarding the timing of the transition to 40 CFR part 1045, and for information regarding regulations that continue to apply for engines that manufacturers originally certified or otherwise produced under this part.

§§ 91.2 through 91.3 [Reserved]

■ 78. Part 92 is revised to read as follows:

PART 92—CONTROL OF AIR POLLUTION FROM LOCOMOTIVES AND LOCOMOTIVE ENGINES

Sec.
92.1 Applicability.
92.2 through 92.3 [Reserved]

Authority: 42 U.S.C. 7401–7671q.

§ 92.1 Applicability.

The Environmental Protection Agency first adopted emission standards for freshly manufactured and remanufactured locomotives under this part in 1998. EPA has migrated regulatory requirements for these engines to 40 CFR part 1033, with additional testing and compliance provisions in 40 CFR parts 1065 and 1068. The Tier 0, Tier 1, and Tier 2 standards originally adopted in this part are identified in 40 CFR part 1033, appendix I. See 40 CFR 1033.1 for information regarding the timing of the transition to 40 CFR part 1033, and for information regarding regulations that continue to apply for engines that manufacturers originally certified or otherwise produced or remanufactured under this part. Emission standards started to apply for locomotive and locomotive engines if they were—

(a) Manufactured on or after January 1, 2000;

(b) Manufactured on or after January 1, 1973 and remanufactured on or after January 1, 2000; or

(c) Manufactured before January 1, 1973 and upgraded on or after January 1, 2000.

§§ 92.2 through 92.3 [Reserved]

■ 79. Part 94 is revised to read as follows:

PART 94—CONTROL OF EMISSIONS FROM MARINE COMPRESSION-IGNITION ENGINES

Sec.
94.1 Applicability.
94.2 through 94.3 [Reserved]

Authority: 42 U.S.C. 7401–7671q.

§ 94.1 Applicability.

The Environmental Protection Agency adopted emission standards for model year 2004 and later marine compression-ignition engines under this part. EPA has migrated regulatory requirements for these engines to 40 CFR part 1042, with additional testing and compliance provisions in 40 CFR parts 1065 and 1068. The Tier 1 and Tier 2 standards originally adopted in this part are identified in 40 CFR part 1042, appendix I. See 40 CFR 1042.1 for information regarding the timing of the transition to 40 CFR part 1042, and for information regarding regulations that continue to apply for engines that manufacturers originally certified or otherwise produced under this part.

§§ 94.2 through 94.3 [Reserved]

PART 1027—FEES FOR VEHICLE AND ENGINE COMPLIANCE PROGRAMS

■ 80. The authority citation for part 1027 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

■ 81. The heading for part 1027 is revised to read as set forth above.
■ 82. Amend § 1027.101 by:
■ a. Revising paragraph (a); and
■ b. Removing and reserving paragraph (b).

The revision reads as follows:

§ 1027.101 To whom do these requirements apply?

(a) This part prescribes fees manufacturers must pay for activities related to EPA's motor vehicle and engine compliance program (MVECP). This includes activities related to approving certificates of conformity and performing tests and taking other steps to verify compliance with emission standards in this part. You must pay fees as described in this part if you are a manufacturer of any of the following products:

(1) Motor vehicles and motor vehicle engines we regulate under 40 CFR part 86. This includes light-duty vehicles, light-duty trucks, medium-duty passenger vehicles, highway motorcycles, and heavy-duty highway engines and vehicles.

(2) The following nonroad engines and equipment:

(i) Locomotives and locomotive engines we regulate under 40 CFR part 1033.

(ii) Nonroad compression-ignition engines we regulate under 40 CFR part 1039.

(iii) Marine compression-ignition engines we regulate under 40 CFR part 1042 or 1043.

(iv) Marine spark-ignition engines and vessels we regulate under 40 CFR part 1045 or 1060. We refer to these as Marine SI engines.

(v) Nonroad spark-ignition engines above 19 kW we regulate under 40 CFR part 1048. We refer to these as Large SI engines.

(vi) Recreational vehicles we regulate under 40 CFR part 1051.

(vii) Nonroad spark-ignition engines and equipment at or below 19 kW we regulate under 40 CFR part 1054 or 1060. We refer to these as Small SI engines.

(3) The following stationary internal combustion engines:

(i) Stationary compression-ignition engines we certify under 40 CFR part 60, subpart IIII.

(ii) Stationary spark-ignition engines we certify under 40 CFR part 60, subpart JJJJ.

(4) Portable fuel containers we regulate under 40 CFR part 59, subpart F.

* * * * *

■ 83. Revise § 1027.105 to read as follows:

§ 1027.105 How much are the fees?

(a) Fees are determined based on the date we receive a complete application for certification. Each reference to a year in this subpart refers to the calendar year, unless otherwise specified. Paragraph (b) of this section specifies baseline fees that apply for certificates received in 2020. See paragraph (c) of this section for provisions describing how we calculate fees for 2021 and later years.

(b) The following baseline fees apply for each application for certification:

(1) Except as specified in paragraph (b)(2) of this section for Independent Commercial Importers, the following fees apply in 2020 for motor vehicles and motor vehicle engines:

Category [1]	Certificate type	Fee
(i) Light-duty vehicles, light-duty trucks, medium-duty passenger vehicle, and complete heavy-duty highway vehicles.	Federal	$27,347

Category [1]	Certificate type	Fee
(ii) Light-duty vehicles, light-duty trucks, medium-duty passenger vehicle, and complete heavy-duty highway vehicles.	California-only	14,700
(iii) Heavy-duty highway engine	Federal	56,299
(iv) Heavy-duty highway engine	California-only	563
(v) Heavy-duty vehicle	Evap	563
(vi) Highway motorcycle, including Independent Commercial Importers	All	1,852

[1] The specified categories include engines and vehicles that use all applicable fuels.

(2) A fee of $87,860 applies in 2020 for Independent Commercial Importers with respect to the following motor vehicles:

(i) Light-duty vehicles and light-duty trucks.

(ii) Medium-duty passenger vehicles.

(iii) Complete heavy-duty highway vehicles.

(3) The following fees apply in 2020 for nonroad and stationary engines, vehicles, equipment, and components:

Category [1]	Certificate type	Fee
(i) Locomotives and locomotive engines	All	$563
(ii) Marine compression-ignition engines and stationary compression-ignition engines with per-cylinder displacement at or above 10 liters.	All, including EIAPP	563
(iii) Other nonroad compression-ignition engines and stationary compression-ignition engines with per-cylinder displacement below 10 liters.	All	2,940
(iv) Large SI engines and stationary spark-ignition engines above 19 kW	All	563
(v) Marine SI engines. Small SI engines, and stationary spark-ignition engines at or below 19 kW.	Exhaust only	563
(vi) Recreational vehicles	Exhaust (or combined exhaust and evap)	563
(vii) Equipment and fuel-system components associated with nonroad and stationary spark-ignition engines, including portable fuel containers..	Evap (where separate certification is required).	397

(c) We will calculate adjusted fees for 2021 and later years based on changes in the Consumer Price Index and the number of certificates. We will announce adjusted fees for a given year by March 31 of the preceding year.

(1) We will adjust the values specified in paragraph (b) of this section for years after 2020 as follows:

(i) Use the following equation for certification related to evaporative emissions from nonroad and stationary engines when a separate fee applies for certification to evaporative emission standards:

$$\text{Certificate Fee}_{CY} = \left[\left(Op + L \cdot \frac{CPI_{CY-2}}{CPI_{2006}}\right)\right] \cdot \frac{OH}{\left[\left(\text{cert\#}_{MY-2} + \text{cert\#}_{MY-3}\right) \cdot 0.5\right]}$$

Where:

Certificate FeeCY = Fee per certificate for a given year.

Op = operating costs are all of EPA's nonlabor costs for each category's compliance program, including any fixed costs associated with EPA's testing laboratory, as described in paragraph (d)(1) of this section.

L = the labor costs, to be adjusted by the Consumer Price Index, as described in paragraph (d)(1) of this section.

CPI_{CY-2} = the Consumer Price Index for the month of November two years before the applicable calendar year, as described in paragraph (d)(2) of this section.

CPI_{2006} = 201.8. This is based on the October 2006 value of the Consumer Price Index. as described in paragraph (d)(2) of this section

OH = 1.169. This is based on EPA overhead, which is applied to all costs.

$cert\#_{MY-2}$ = the total number of certificates issued for a fee category in the model year two years before the calendar year for the applicable fees as described in paragraph (d)(3) of this section.

$cert\#_{MY-3}$ = the total number of certificates issued for a fee category in the model year three years before the calendar year for the applicable fees as described in paragraph (d)(3) of this section.

(ii) Use the following equation for all other certificates:

$$\text{Certificate Fee}_{CY} = \left[\left(Op + L \cdot \frac{CPI_{CY-2}}{CPI_{2002}}\right)\right] \cdot \frac{OH}{\left[\left(\text{cert\#}_{MY-2} + \text{cert\#}_{MY-3}\right) \cdot 0.5\right]}$$

Where:

CPI_{2002} = 180.9. This is based on the December 2002 value of the Consumer Price Index as described in paragraph (d)(2) of this section.

(2) The fee for any year will remain at the previous year's amount until the value calculated in paragraph (c)(1) of this section differs by at least $50 from the amount specified for the previous year.

(d) Except as specified in § 1027.110(a) for motor vehicles and motor vehicle engines, we will use the following values to determine adjusted fees using the equation in paragraph (c) of this section:

(1) The following values apply for operating costs and labor costs:

Engine or vehicle category	Op	L
(i) Light-duty, medium-duty passenger, and complete heavy-duty highway vehicle certification	$3,322,039	$2,548,110
(ii) Light-duty, medium-duty passenger, and complete heavy-duty highway vehicle in-use testing	2,858,223	2,184,331
(iii) Independent Commercial Importers identified in paragraph (b)(2) of this section	344,824	264,980
(iv) Highway motorcycles	225,726	172,829
(v) Heavy-duty highway engines	1,106,224	1,625,680
(vi) Nonroad compression-ignition engines that are not locomotive or marine engines, and stationary compression-ignition engines with per-cylinder displacement below 10 liters	486,401	545,160
(vii) Evaporative certificates related to nonroad and stationary engines	5,039	236,670
(viii) All other	177,425	548,081

(2) The applicable Consumer Price Index is based on the values published by the Bureau of Labor Statistics for All Urban Consumers at *https://www.usinflationcalculator.com/*under ''Inflation and Prices'' and ''Consumer Price Index Data from 1913 to. . . .''. For example, we calculated the 2006 fees using the Consumer Price Index for November 2004, which is 191.0.

(3) Fee categories for counting the number of certificates issued are based on the grouping shown in paragraph (d)(1) of this section.

■ 84. Amend § 1027.110 by revising paragraph (a) introductory text to read as follows:

§ 1027.110 What special provisions apply for certification related to motor vehicles?

(a) We will adjust fees for light-duty, medium-duty passenger, and complete heavy-duty highway vehicles as follows:

* * * * *

■ 85. Amend § 1027.125 by revising paragraph (e) to read as follows:

§ 1027.125 Can I get a refund?

* * * * *

(e) Send refund and correction requests online at *www.Pay.gov*, or as specified in our guidance.

* * * * *

■ 86. Amend § 1027.130 by revising paragraphs (a) and (b) to read as follows:

§ 1027.130 How do I make a fee payment?

(a) Pay fees to the order of the Environmental Protection Agency in U.S. dollars using electronic funds transfer or any method available for payment online at *www.Pay.gov*, or as specified in EPA guidance.

(b) Submit a completed fee filing form at *www.Pay.gov.*

* * * * *

■ 87. Amend § 1027.135 by revising paragraph (b) to read as follows:

§ 1027.135 What provisions apply to a deficient filing?

* * * * *

(b) We will hold a deficient filing along with any payment until we receive a completed form and full payment. If the filing remains deficient at the end of the model year, we will continue to hold any funds associated with the filing so you can make a timely request for a refund. We will not process an application for certification if the associated filing is deficient.

■ 88. Revise § 1027.155 to read as follows:

§ 1027.155 What abbreviations apply to this subpart?

The following symbols, acronyms, and abbreviations apply to this part:

TABLE 1 TO § 1027.155

CFR	Code of Federal Regulations.
CPI	Consumer Price Index.
EPA	U.S. Environmental Protection Agency.
Evap	Evaporative emissions.
EIAPP	Engine International Air Pollution Prevention (from MARPOL Annex VI).
ICI	Independent Commercial Importer.
MVECP	Motor vehicle and engine compliance program.
MY	Model year.
U.S	United States.

PART 1033—CONTROL OF EMISSIONS FROM LOCOMOTIVES

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

Authority: 42 U.S.C. 7401–7671q.

■ 90. Amend § 1033.150 by:

■ a. Removing and reserving paragraphs (a) and (d).

■ b. Revising paragraph (e) introductory text.

■ c. Removing and reserving paragraphs (h) through (j).

■ d. Removing paragraphs (l) and (m).

The revision reads as follows:

§ 1033.150 Interim provisions.

* * * * *

(e) *Producing switch locomotives using certified nonroad engines.* You may use the provisions of this paragraph (e) to produce any number of freshly manufactured or refurbished switch locomotives in model years 2008 through 2017. Locomotives produced under this paragraph (e) are exempt from the standards and requirements of this part subject to the following provisions:

* * * * *

■ 91. Revise § 1033.255 to read as follows:

§ 1033.255 EPA decisions.

(a) If we determine an application is complete and shows that the engine family meets all the requirements of this part and the Clean Air Act, we will issue a certificate of conformity for the engine family for that model year. We may make the approval subject to additional conditions.

(b) We may deny an application for certification if we determine that an engine family fails to comply with emission standards or other requirements of this part or the Clean Air Act. We will base our decision on all available information. If we deny an application, we will explain why in writing.

(c) In addition, we may deny your application or suspend or revoke a certificate of conformity if you do any of the following:

(1) Refuse to comply with any testing or reporting requirements in this part.

(2) Submit false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete.

(3) Cause any test data to become inaccurate.

(4) Deny us from completing authorized activities (see 40 CFR 1068.20). This includes a failure to provide reasonable assistance.

(5) Produce locomotives for importation into the United States at a location where local law prohibits us from carrying out authorized activities.

(6) Fail to supply requested information or amend an application to include all locomotives being produced.

(7) Take any action that otherwise circumvents the intent of the Clean Air Act or this part.

(d) We may void a certificate of conformity if you fail to keep records, send reports, or give us information as required under this part or the Act. Note that these are also violations of 40 CFR 1068.101(a)(2).

(e) We may void a certificate of conformity if we find that you

intentionally submitted false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete.

(f) If we deny an application or suspend, revoke, or void a certificate, you may ask for a hearing (see § 1033.920).

■ 92. Amend § 1033.601 by revising paragraphs (c)(4) and (5) to read as follows:

§ 1033.601 General compliance provisions.

* * * * *

(c) * * *

(4) The provisions for importing engines and equipment under the identical configuration exemption of 40 CFR 1068.315(h) do not apply for locomotives.

(5) The provisions for importing engines and equipment under the ancient engine exemption of 40 CFR 1068.315(i) do not apply for locomotives.

* * * * *

■ 93. Amend § 1033.701 by revising paragraph (k)(1) to read as follows:

§ 1033.701 General provisions.

* * * * *

(k) * * *

(1) You may retire emission credits generated from any number of your locomotives. This may be considered donating emission credits to the environment. Identify any such credits in the reports described in § 1033.730. Locomotives must comply with the applicable FELs even if you donate or sell the corresponding emission credits under this paragraph (k). Those credits may no longer be used by anyone to demonstrate compliance with any EPA emission standards.

* * * * *

■ 94. Amend § 1033.740 by revising the introductory text and paragraph (a) to read as follows:

§ 1033.740 Credit restrictions.

Use of emission credits generated under this part is restricted depending on the standards against which they were generated.

(a) *Pre-2008 credits.* NO_X and PM credits generated before model year 2008 may be used under this part in the same manner as NO_X and PM credits generated under this part.

* * * * *

■ 95. Amend § 1033.901 by revising paragraph (1) of the definition of ''New'' to read as follows:

§ 1033.901 Definitions.

* * * * *

New, * * *

(1) A locomotive or engine is new if its equitable or legal title has never been transferred to an ultimate purchaser. Where the equitable or legal title to a locomotive or engine is not transferred prior to its being placed into service, the locomotive or engine ceases to be new when it is placed into service. A locomotive or engine also becomes new if it is remanufactured or refurbished (as defined in this section). A remanufactured locomotive or engine ceases to be new when placed back into service. With respect to imported locomotives or locomotive engines, the term ''new locomotive'' or ''new locomotive engine'' also means a locomotive or locomotive engine that is not covered by a certificate of conformity under this part or 40 CFR part 92 at the time of importation, and that was manufactured or remanufactured after January 1, 2000, which would have been applicable to such locomotive or engine had it been manufactured or remanufactured for importation into the United States. Note that replacing an engine in one locomotive with an unremanufactured used engine from a different locomotive does not make a locomotive new.

* * * * *

■ 96. Amend § 1033.925 by revising paragraph (e) introductory text to read as follows:

§ 1033.925 Reporting and recordkeeping requirements.

* * * * *

(e) Under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*), the Office of Management and Budget approves the reporting and recordkeeping specified in the applicable regulations in this chapter. The following items illustrate the kind of reporting and recordkeeping we require for locomotives regulated under this part:

* * * * *

PART 1036—CONTROL OF EMISSIONS FROM NEW AND IN-USE HEAVY-DUTY HIGHWAY ENGINES

■ 97. The authority citation for part 1036 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

■ 98. Amend § 1036.1 by adding paragraph (b)(3) to read as follows:

§ 1036.1 Does this part apply for my engines?

* * * * *

(b) * * *

(3) The provisions of § 1036.501(h)(1) apply.

* * * * *

■ 99. Amend § 1036.108 by revising paragraph (a) to read as follows:

§ 1036.108 Greenhouse gas emission standards.

* * * * *

(a) *Emission standards.* The emission standards in this paragraph (a) apply for engines and optionally powertrains measured using the test procedures specified in subpart F of this part as follows:

(1) CO_2 emission standards in this paragraph (a)(1) apply based on testing as specified in subpart F of this part. The applicable test cycle for measuring CO_2 emissions differs depending on the engine family's primary intended service class and the extent to which the engines will be (or were designed to be) used in tractors. For medium and heavy heavy-duty engines certified as tractor engines, measure CO_2 emissions using the steady-state duty cycle specified in § 1036.501 (referred to as the Supplemental Emission Test, or SET, even though emission sampling involves measurements from discrete modes). This testing with the SET duty cycle is intended for engines designed to be used primarily in tractors and other line-haul applications. Note that the use of some SET-certified tractor engines in vocational applications does not affect your certification obligation under this paragraph (a)(1); see other provisions of this part and 40 CFR part 1037 for limits on using engines certified to only one cycle. For medium and heavy heavy-duty engines certified as both tractor and vocational engines, measure CO_2 emissions using the steady-state duty cycle and the transient duty cycle (sometimes referred to as the Federal Test Procedure (FTP) engine cycle) specified in § 1036.501. Testing with both SET and FTP duty cycles is intended for engines that are designed for use in both tractor and vocational applications. For all other engines (including engines meeting spark-ignition standards), measure CO_2 emissions using the appropriate transient duty cycle specified in § 1036.501.

(i) The CO_2 standard is 627 g/hp·hr for all spark-ignition engines for model years 2016 through 2020. This standard continues to apply in later model years for all spark-ignition engines that are not heavy heavy-duty engines.

(ii) The following CO_2 standards apply for compression-ignition engines (in g/hp·hr):

TABLE 1 OF § 1036.108—COMPRESSION-IGNITION ENGINE STANDARDS FOR MY 2014–2020

Model years	Light heavy-duty	Medium heavy-duty-vocational	Heavy heavy-duty-vocational	Medium heavy-duty-tractor	Heavy heavy-duty-tractor
2014–2016	600	600	567	502	475
2017–2020	576	576	555	487	460

(iii) The following CO_2 standards apply for compression-ignition engines and all heavy heavy-duty engines (in g/hp·hr):

TABLE 2 OF § 1036.108—COMPRESSION-IGNITION ENGINE STANDARDS FOR MY 2021 AND LATER

Model years	Light heavy-duty	Medium heavy-duty-vocational	Heavy heavy-duty-vocational	Medium heavy-duty-tractor	Heavy heavy-duty-tractor
2021–2023	563	545	513	473	447
2024–2026	555	538	506	461	436
2027 and later	552	535	503	457	432

(iv) You may certify spark-ignition engines to the compression-ignition standards for the appropriate model year under this paragraph (a). If you do this, those engines are treated as compression-ignition engines for all the provisions of this part.

(2) The CH4 emission standard is 0.10 g/hp·hr when measured over the applicable transient duty cycle specified in 40 CFR part 86, subpart N. This standard begins in model year 2014 for compression-ignition engines and in model year 2016 for spark-ignition engines. Note that this standard applies for all fuel types just like the other standards of this section.

(3) The N_2O emission standard is 0.10 g/hp·hr when measured over the transient duty cycle specified in 40 CFR part 86, subpart N. This standard begins in model year 2014 for compression-ignition engines and in model year 2016 for spark-ignition engines.

* * * * *

■ 100. Amend § 1036.150 by revising paragraphs (e), (g), and (p)(2) and adding paragraph (q) to read as follows:

§ 1036.150 Interim provisions.

* * * * *

(e) *Alternate phase-in standards.* Where a manufacturer certifies all of its model year 2013 compression-ignition engines within a given primary intended service class to the applicable alternate standards of this paragraph (e), its compression-ignition engines within that primary intended service class are subject to the standards of this paragraph (e) for model years 2013 through 2016. This means that once a manufacturer chooses to certify a primary intended service class to the standards of this paragraph (e), it is not allowed to opt out of these standards. Engines certified to these standards are not eligible for early credits under paragraph (a) of this section.

TABLE 1 OF § 1036.150—ALTERNATE PHASE-IN STANDARDS

Vehicle type	Model years	LHD Engines	MHD Engines	HHD Engines
Tractors	2013–2015	NA	512 g/hphr	485 g/hphr.
	2016 and later [1]	NA	487 g/hphr	460 g/hphr.
Vocational	2013–2015	618 g/hphr	618 g/hphr	577 g/hphr.
	2016 through 20201	576 g/hphr	576 g/hphr	555 g/hphr.

[1] These alternate standards for 2016 and later are the same as the otherwise applicable standards for 2017 through 2020.

* * * * *

(g) *Assigned deterioration factors.* You may use assigned deterioration factors (DFs) without performing your own durability emission tests or engineering analysis as follows:

(1) You may use an assigned additive DF of 0.0 g/hp-hr for CO_2 emissions from engines that do not use advanced or off-cycle technologies. If we determine it to be consistent with good engineering judgment, we may allow you to use an assigned additive DF of 0.0 g/hp-hr for CO_2 emissions from your engines with advanced or off-cycle technologies.

(2) You may use an assigned additive DF of 0.010 g/hphr for N2O emissions from any engine through model year 2021, and 0.020 g/hp-hr for later model years.

(3) You may use an assigned additive DF of 0.020 g/hp-hr for CH4 emissions from any engine.

* * * * *

(p) * * *

(2) You may certify your model year 2024 through 2026 engines to the following alternative standards:

TABLE 2 OF § 1036.150—ALTERNATIVE STANDARDS FOR MODEL YEARS 2024 THROUGH 2026

Model years	Medium heavy-duty-vocational	Heavy heavy-duty-vocational	Medium heavy-duty-tractor	Heavy heavy-duty-tractor
2024–2026	542	510	467	442

(q) *Confirmatory testing of fuel maps defined in § 1036.503(b).* For model years 2021 and later, where the results from Eq. 1036.235–1 for a confirmatory test is less than or equal to 2.0%, we will not replace the manufacturer's fuel maps.

■ 101. Amend § 1036.225 by revising paragraphs (e) and (f)(1) to read as follows:

§ 1036.225 Amending my application for certification.

* * * * *

(e) The amended application applies starting with the date you submit the amended application, as follows:

(1) For engine families already covered by a certificate of conformity, you may start producing a new or modified engine configuration any time after you send us your amended application and before we make a decision under paragraph (d) of this section. However, if we determine that the affected engines do not meet applicable requirements in this part, we will notify you to cease production of the engines and may require you to recall the engines at no expense to the owner. Choosing to produce engines under this paragraph (e) is deemed to be consent to recall all engines that we determine do not meet applicable emission standards or other requirements in this part and to remedy the nonconformity at no expense to the owner. If you do not provide information required under paragraph (c) of this section within 30 days after we request it, you must stop producing the new or modified engines.

(2) [Reserved]

(f) * * *

(1) You may ask to raise your FEL for your engine family at any time before the end of the model year. In your request, you must show that you will still be able to meet the emission standards as specified in subparts B and H of this part. Use the appropriate FELs/FCLs with corresponding production volumes to calculate emission credits for the model year, as described in subpart H of this part.

* * * * *

■ 102. Amend § 1036.230 by revising paragraph (d) and adding paragraph (f) to read as follows:

§ 1036.230 Selecting engine families.

* * * * *

(d) Except as described in paragraph (f) of this section, engine configurations within an engine family must use equivalent greenhouse gas emission controls. Unless we approve it, you may not produce nontested configurations without the same emission control hardware included on the tested configuration. We will only approve it if you demonstrate that the exclusion of the hardware does not increase greenhouse gas emissions.

* * * * *

(f) Engine families may be divided into subfamilies with respect to compliance with CO_2 standards.

■ 103. Amend § 1036.235 by revising the introductory text and paragraphs (b) and (c) to read as follows:

§ 1036.235 Testing requirements for certification.

This section describes the emission testing you must perform to show compliance with the greenhouse gas emission standards in § 1036.108. When testing hybrid powertrains substitute ''hybrid powertrain'' for ''engine'' as it applies to requirements for certification.

* * * * *

(b) Test your emission-data engines using the procedures and equipment specified in subpart F of this part. In the case of dual-fuel and flexible-fuel engines, measure emissions when operating with each type of fuel for which you intend to certify the engine. (Note: Measurement of criteria emissions from flexible-fuel engines generally involves operation with the fuel mixture that best represents in-use operation, or with the fuel mixture with the highest emissions.) Measure CO_2, CH_4, and N_2O emissions using the specified duty cycle(s), including cold-start and hot-start testing as specified in 40 CFR part 86, subpart N. The following provisions apply regarding test cycles for demonstrating compliance with tractor and vocational standards:

(1) If you are certifying the engine for use in tractors, you must measure CO_2 emissions using the applicable SET specified in § 1036.501, and measure CH_4 and N_2O emissions using the specified transient cycle.

(2) If you are certifying the engine for use in vocational applications, you must measure CO_2, CH_4, and N_2O emissions using the specified transient duty cycle, including cold-start and hot-start testing as specified in § 1036.501.

(3) You may certify your engine family for both tractor and vocational use by submitting CO_2 emission data from both SET and transient cycle testing and specifying FCLs for both.

(4) Some of your engines certified for use in tractors may also be used in vocational vehicles, and some of your engines certified for use in vocational may be used in tractors. However, you may not knowingly circumvent the intent of this part (to reduce in-use emissions of CO_2) by certifying engines designed for tractors or vocational vehicles (and rarely used in the other application) to the wrong cycle. For example, we would generally not allow you to certify all your engines to the SET without certifying any to the transient cycle.

(c) We may perform confirmatory testing by measuring emissions from any of your emission-data engines. If your certification includes powertrain testing as specified in § 1036.630, this paragraph (c) also applies for the powertrain test results.

(1) We may decide to do the testing at your plant or any other facility. If we do this, you must deliver the engine to a test facility we designate. The engine you provide must include appropriate manifolds, aftertreatment devices, electronic control units, and other emission-related components not normally attached directly to the engine block. If we do the testing at your plant, you must schedule it as soon as possible and make available the instruments, personnel, and equipment we need.

(2) If we measure emissions on your engine, the results of that testing become the official emission results for the engine as specified in this paragraph (c). Unless we later invalidate these data, we may decide not to consider your data in determining if your engine family meets applicable requirements in this part.

(3) Before we test one of your engines, we may set its adjustable parameters to any point within the physically adjustable ranges.

(4) Before we test one of your engines, we may calibrate it within normal production tolerances for anything we do not consider an adjustable parameter. For example, we may calibrate it within normal production tolerances for an engine parameter that is subject to production variability because it is adjustable during production, but is not considered an adjustable parameter (as defined in § 1036.801) because it is permanently sealed. For parameters that relate to a level of performance that is itself subject to a specified range (such as maximum power output), we will generally perform any calibration under this paragraph (c)(4) in a way that keeps performance within the specified range.

(5) We may use our emission test results for steady-state, idle, cycle-average and powertrain fuel maps defined in § 1036.503(b) as the official emission results. We will not replace individual points from your fuel map.

(i) We will determine fuel masses, $m_{\text{fuel[cycle]}}$, and mean idle fuel mass flow rates, $\overline{m}_{\text{fuelidle}}$, if applicable, using the method described in § 1036.535(h).

(ii) We will perform this comparison using the weighted results from GEM, using vehicles that are appropriate for the engine under test. For example, we may select vehicles that the engine went into for the previous model year.

(iii) If you supply cycle-average engine fuel maps for the highway cruise cycles instead of generating a steady-state fuel map for these cycles, we may perform a confirmatory test of your engine fuel maps for the highway cruise cycles by either of the following methods:

(A) Directly measuring the highway cruise cycle-average fuel maps.

(B) Measuring a steady-state fuel map as described in paragraph (c)(5) of this section and using it in GEM to create our own cycle-average engine fuel maps for the highway cruise cycles.

(iv) We will replace fuel maps as a result of confirmatory testing as follows:

(A) Weight individual duty cycle results using the vehicle categories determined in paragraph (c)(5)(i) of this section and respective weighting factors in Table 1 of 40 CFR 1037.510 to determine a composite CO_2 emission value for each vehicle configuration; then repeat the process for all the unique vehicle configurations used to generate the manufacturer's fuel maps.

(B) The average percent difference between fuel maps is calculated using the following equation:

$$difference = \left(\frac{\sum_{i=1}^{N} \frac{e_{\text{CO2compEPA}i} - e_{\text{CO2compManu}i}}{e_{\text{CO2compManu}i}}}{N} \right) \cdot 100\ \%$$

Eq. 1036.235-1

Where:

i = an indexing variable that represents one individual weighted duty cycle result for a vehicle configuration.

N = total number of vehicle configurations.

$e_{\text{CO2compEPA}i}$ = unrounded composite mass of CO_2 emissions in g/ton-mile for vehicle configuration i for the EPA confirmatory test.

$e_{\text{CO2compManu}i}$ = unrounded composite mass of CO_2 emissions in g/ton-mile for vehicle configuration i for the manufacturer-declared map.

(C) Where the unrounded average percent difference between our composite weighted fuel map and the manufacturer's is greater than or equal to 0%, we will not replace the manufacturer's maps, and we will consider an individual engine to have passed the fuel map confirmatory test.

* * * * *

■ 104. Revise § 1036.255 to read as follows:

§ 1036.255 What decisions may EPA make regarding a certificate of conformity?

(a) If we determine an application is complete and shows that the engine family meets all the requirements of this part and the Act, we will issue a certificate of conformity for the engine family for that model year. We may make the approval subject to additional conditions.

(b) We may deny an application for certification if we determine that an engine family fails to comply with emission standards or other requirements of this part or the Clean Air Act. We will base our decision on all available information. If we deny an application, we will explain why in writing.

(c) In addition, we may deny your application or suspend or revoke a certificate of conformity if you do any of the following:

(1) Refuse to comply with any testing or reporting requirements in this part.

(2) Submit false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete.

(3) Cause any test data to become inaccurate.

(4) Deny us from completing authorized activities (see 40 CFR 1068.20). This includes a failure to provide reasonable assistance.

(5) Produce engines for importation into the United States at a location where local law prohibits us from carrying out authorized activities.

(6) Fail to supply requested information or amend an application to include all engines being produced.

(7) Take any action that otherwise circumvents the intent of the Act or this part.

(d) We may void a certificate of conformity if you fail to keep records, send reports, or give us information as required under this part or the Act. Note that these are also violations of 40 CFR 1068.101(a)(2).

(e) We may void a certificate of conformity if we find that you intentionally submitted false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete after submission.

(f) If we deny an application or suspend, revoke, or void a certificate, you may ask for a hearing (see § 1036.820).

■ 105. Revise the heading for subpart D to read as follows:

Subpart D—Testing Production Engines and Hybrid Powertrains

■ 106. Amend § 1036.301 by revising paragraph (b)(2) to read as follows:

§ 1036.301 Measurements related to GEM inputs in a selective enforcement audit.

* * * * *

(b) * * *

(2) Evaluate cycle-average fuel maps by running GEM based on simulated vehicle configurations representing the interpolated center of every group of four test points that define a boundary of cycle work and average engine speed divided by average vehicle speed. These simulated vehicle configurations are defined from the four surrounding points based on averaging values for vehicle mass, drag area (if applicable), tire rolling resistance, tire size, and axle ratio. The regulatory subcategory is defined by the regulatory subcategory of the vehicle configuration with the greatest mass from those four test points. Figure 1 of this section illustrates a determination of vehicle configurations for engines used in tractors and Vocational Heavy-Duty Vehicles (HDV) using a fixed tire size (see § 1036.540(c)(3)(iii)). The vehicle configuration from the upper-left quadrant is defined by values for Tests 1, 2, 4, and 5 from Table 3 of § 1036.540. Calculate vehicle mass as the average of the values from the four tests. Determine the weight reduction needed for GEM to simulate this calculated vehicle mass by comparing the average vehicle mass to the default vehicle mass for the vehicle subcategory from the four points that has the greatest mass, with the understanding that two-thirds of weight reduction for tractors is applied to vehicle weight and one-third is understood to represent increased payload. This is expressed mathematically as $M_{avg} = M_{subcategory} - \frac{2}{3} \cdot M_{reduction}$, which can be solved for Mreduction. For vocational vehicles, half of weight reduction is applied to vehicle weight and half is understood to represent increased payload. Use the following values for default vehicle masses by vehicle subcategory:

TABLE 1 OF § 1036.301—DEFAULT VEHICLE MASS BY VEHICLE SUBCATEGORY

Vehicle subcategory	Default vehicle mass (kg)
Vocational Light HDV	7,257
Vocational Medium HDV	11,408
Class 7 Mid-Roof Day Cab	20,910
Class 8 Mid-Roof Day Cab	29,529
Class 8 High-Roof Sleeper Cab	31,978
Heavy-Haul Tractor	53,750

* * * * *

■ 107. Amend § 1036.501 by revising paragraph (g) and adding paragraph (h) to read as follows:

§ 1036.501 How do I run a valid emission test?

* * * * *

(g) The following additional provisions apply for testing to demonstrate compliance with the emission standards in § 1036.108 for model year 2016 through 2020 engines:

(1) Measure CO_2, CH_4, and N_2O emissions using the transient cycle specified in either 40 CFR 86.1333 or § 1036.510.

(2) For engines subject to SET testing under § 1036.108(a)(1), measure CO_2 emissions using the SET specified in 40 CFR 86.1362.

(h) The following additional provisions apply for testing to demonstrate compliance with the emission standards in § 1036.108 for model year 2021 and later engines:

(1) If your engine is intended for installation in a vehicle equipped with stop-start technology, you may turn the engine off during the idle portions of the duty cycle to represent in-use operation, consistent with good engineering judgment. We recommend installing an engine starter motor and allowing the engine's Electronic Control Unit (ECU) to control the engine stop and start events.

(2) For engines subject to SET testing under § 1036.108(a)(1), use one of the following methods to measure CO_2 emissions:

(i) Use the SET duty cycle specified in § 1036.505 using either continuous or batch sampling.

(ii) Measure CO_2 emissions over the SET duty cycle specified in 40 CFR 86.1362 using continuous sampling. Integrate the test results by mode to establish separate emission rates for each mode (including the transition following each mode, as applicable). Apply the CO_2 weighting factors specified in 40 CFR 86.1362 to calculate a composite emission result.

(3) Measure CO_2, CH_4, and N_2O emissions over the transient cycle specified in either 40 CFR 86.1333 or § 1036.510.

(4) Measure or calculate emissions of criteria pollutants corresponding to your measurements to demonstrate compliance with CO_2 standards in subpart B of this part. These test results are not subject to the duty-cycle standards of 40 CFR part 86, subpart A.

■ 108. Add § 1036.503 to read as follows:

§ 1036.503 Engine data and information for vehicle certification.

You must give vehicle manufacturers information as follows so they can certify model year 2021 and later vehicles:

(a) Identify engine make, model, fuel type, combustion type, engine family name, calibration identification, and engine displacement. Also identify which standards the engines meet.

(b) This paragraph (b) describes four different methods to generate engine fuel maps. For engines without hybrid components or mild hybrid where you choose not to include hybrid components in the test, you must generate fuel maps using either paragraph (b)(1) or (2) of this section. For mild hybrid engines where you choose to include the hybrid components in the test and for hybrid engines, you must generate fuel maps using paragraph (b)(4) of this section. For all other hybrids, powertrains, and for vehicles where the transmission is not automatic, automated manual, manual, or dual-clutch you must use paragraph (b)(3) of this section.

(1) *Combined steady-state and cycle-average.* Determine steady-state engine fuel maps and fuel consumption at idle as described in § 1036.535(b) and (c) respectively, and determine cycle-average engine fuel maps as described in § 1036.540, excluding cycle-average fuel maps for highway cruise cycles.

(2) *Cycle-average.* Determine fuel consumption at idle as described in § 1036.535(c) and (d), and determine cycle-average engine fuel maps as described in § 1036.540, including cycle-average engine fuel maps for highway cruise cycles. In this case, you do not need to determine steady-state engine fuel maps under § 1036.535(b). Fuel mapping for highway cruise cycles using cycle-average testing is an alternate method, which means that we may do confirmatory testing based on steady-state fuel mapping for highway cruise cycles even if you do not; however, we will use the steady-state fuel maps to create cycle-average fuel maps. In § 1036.540 we define the vehicle configurations for testing; we may add more vehicle configurations to better represent your engine's operation for the range of vehicles in which your engines will be installed (see 40 CFR 1065.10(c)(1)).

(3) *Powertrain.* Generate a powertrain fuel map as described in 40 CFR 1037.550. In this case, you do not need to perform fuel mapping under § 1036.535 or § 1036.540. The option in 40 CFR 1037.550(b)(2) is only allowed for hybrid powertrain testing.

(4) *Hybrid engine.* Determine fuel consumption at idle as described in § 1036.535(c) and (d), and determine cycle-average engine fuel maps as described in § 1037.550, including cycle-average engine fuel maps for highway cruise cycles.

(c) Provide the following information if you generate engine fuel maps using either paragraph (b)(1), (2), or (4) of this section:

(1) Full-load torque curve for installed engines, and the full-load torque curve of the engine (parent engine) with the highest fueling rate that shares the same engine hardware, including the turbocharger, as described in 40 CFR 1065.510. You may use 40 CFR 1065.510(b)(5)(i) for engines subject to spark-ignition standards. Measure the torque curve for hybrid engines that have an RESS as described in 40 CFR 1065.510(g)(2) with the hybrid system active. For hybrid engines that do not include an RESS follow 40 CFR 1065.510(b)(5)(ii).

(2) Motoring torque map as described in 40 CFR 1065.510(c)(2) and (5) for conventional and hybrid engines, respectively. For engines with a low-speed governor, remove data points where the low speed governor is active. If you don't know when the low-speed governor is active, we recommend removing all points below 40 r/min above the low warm idle speed.

(3) Declared engine idle speed. For vehicles with manual transmissions, this is the engine speed with the transmission in neutral. For all other vehicles, this is the engine's idle speed when the transmission is in drive.

(4) The engine idle speed during the transient cycle-average fuel map.

(5) The engine idle torque during the transient cycle-average fuel map.

(d) If you generate powertrain fuel maps using paragraph (b)(3) of this section, determine the system continuous rated power according to § 1036.527.

■ 109. Revise § 1036.505 to read as follows:

§ 1036.505 Supplemental emission test.

(a) Starting in model year 2021, you must measure CO_2 emissions using the SET duty cycle in 40 CFR 86.1362 as described in § 1036.501, or using the SET duty cycle in this section.

(b) Perform SET testing with one of the following procedures:

(1) For engine testing, the SET duty cycle is based on normalized speed and torque values relative to certain maximum values. Denormalize torque as described in 40 CFR 1065.610(d). Denormalize speed as described in 40 CFR 1065.512.

(2) For hybrid powertrain and hybrid engine testing, follow 40 CFR 1037.550 to carry out the test, but do not compensate the duty cycle for the distance driven as described in 40 CFR 1037.550(g)(4), for hybrid engines select the transmission from Table 1 of § 1036.540 substituting ''engine'' for ''vehicle'' and ''highway cruise cycle'' for ''SET'', and cycles do not follow 40 CFR 1037.550(j). For cycles that begin with a set of contiguous idle points, leave the transmission in neutral or park for the full initial idle segment. Place the transmission into drive within 5 seconds of the first nonzero vehicle speed setpoint. Place the transmission into park or neutral when the cycle reaches SET mode 14. Use the following vehicle parameters in place of those in 40 CFR 1037.550 to define the vehicle model in 40 CFR 1037.550(a)(3):

(i) Determine the vehicle test mass, M, as follows:

$$M = 15.1 \cdot P_{\text{contrated}}^{1.31}$$

Eq. 1036.505-1

Where:

$P_{\text{contrated}}$ = the continuous rated power of the hybrid system determined in § 1036.527.

$P_{\text{contrated}}$ = 350.1 kW

$M = 15.1 \cdot 350.1^{1.31} = 32499$ kg

(ii) Determine the vehicle frontal area, A_{front}, as follows:

(A) For $M \leq 18050$ kg:

$$A_{\text{front}} = -1.69 \cdot 10^{-8} \cdot M^2 + 6.33 \cdot 10^{-4} \cdot M + 1.67$$

Eq. 1036.505-2

Example:

M = 16499 kg

$A_{\text{front}} = -169 \cdot 10^{-8} \cdot 16499^2 + 6.33 \cdot 10^{-4} \cdot 16499 + 1.67 = 7.51$ m²

(B) For $M > 18050$ kg, $A_{\text{front}} = 7.59$ m².

(iii) Determine the vehicle drag area, C_dA, as follows:

$$C_dA = \frac{\left(0.00299 \cdot A_{\text{front}} - 0.000832\right) \cdot 2 \cdot g \cdot 3.6^2}{\rho}$$

Eq. 1036.505-3

Where:

g = gravitational constant = 9.80665 m/s².

ρ = air density at reference conditions. Use ρ = 1.1845 kg/m³.

$$C_dA = \frac{\left(0.00299 \cdot 7.59 - 0.000832\right) \cdot 2 \cdot 9.80665 \cdot 3.6^2}{1.1845} = 3.08 \text{ m}^2$$

(iv) Determine the coefficient of rolling resistance, C_{rr}, as follows:

$$C_{rr} = 0.00513 + \frac{17.6}{M}$$

Eq. 1036.505-4

Example:

$$C_{rr} = 0.00513 + \frac{17.6}{32499} = 0.0057 \text{ kg/kg}$$

(v) Determine the vehicle curb mass, M_{curb}, as follows:

$$M_{curb} = -0.000007376537 \cdot M^2 + 0.6038432 \cdot M$$

Eq. 1036.505-5

Example:

$$M_{curb} = -0.000007376537 \cdot 32499^2 + 0.6038432 \cdot 32499 = 11833 \text{ kg}$$

(vi) Determine the linear equivalent mass of rotational moment of inertias, $M_{rotating}$, as follows:

$$M_{rotating} = 0.07 \cdot M_{curb}$$

Eq. 1036.505-6

Example:

$$M_{rotating} = 0.07 \cdot 11833 = 828.3 \text{ kg}$$

(vii) Select a drive axle ratio, k_a, that represents the worst-case pair of drive axle ratio and tire size for CO_2 expected for vehicles in which the powertrain will be installed. This is typically the highest numeric axle ratio.

(viii) Select a tire radius, *r*, that represents the worst-case pair of tire size and drive axle ratio for CO_2 expected for vehicles in which the powertrain will be installed. This is typically the smallest tire radius.

(ix) If you are certifying a hybrid powertrain system without the transmission, use a default transmission efficiency of 0.95. If you certify with this configuration, you must use 40 CFR 1037.550(a)(3)(ii) to create the vehicle model along with its default transmission shift strategy. Use the transmission parameters defined in Table 1 of § 1036.540 to determine transmission type and gear ratio. For Light and Medium HDVs, use the Light and Medium HDV parameters for the FTP and SET. For Tractors and Heavy HDVs, use the Tractor and Heavy HDV transient cycle parameters for the FTP and the Tractor and Heavy HDV highway cruise cycle parameters for the SET.

(x) Select axle efficiency, Eff_{axle}, according to 40 CFR 1037.550.

(c) Measure emissions using the SET duty cycle shown in Table 1 of this section to determine whether engines and hybrid powertrains meet the steady-state compression-ignition standards specified in subpart B of this part. Table 1 of this section specifies settings for engine and hybrid powertrain testing, as follows:

(1) The duty cycle for testing engines involves a schedule of normalized engine speed and torque values.

(2) The duty cycle for hybrid powertrain testing involves a schedule of vehicle speeds and road grade.

(i) Determine road grade at each point based on the continuous rated power of the hybrid powertrain system, $P_{contrated}$, in kW determined in § 1036.527, the vehicle speed (A, B, or C) in mi/hr for a given SET mode, $v_{ref[speed]}$, and the specified road grade coefficients using the following equation:

$$Road\ grade = a \cdot P_{contrated}^{3} + b \cdot P_{contrated}^{2} \cdot v_{ref[speed]} + c \cdot P_{contrated}^{2} + d \cdot v_{ref[speed]}^{2} + e \cdot P_{contrated} \cdot v_{ref[speed]} + f \cdot P_{contrated} + g \cdot v_{ref[speed]} + h$$

Eq. 1036.505-7

Example for SET mode 3a in Table 1 to this section:

$P_{contrated}$ = 345.2 kW

v_{refB} = 59.3 mi/hr

Road grade = $8.296 \cdot 10^{-9} \cdot 345.2^{3} + (-4.752 \cdot 10^{-7}) \cdot 345.2^{2} \cdot 59.3 + 1.291 \cdot 10^{-5} \cdot 345.2^{2} + 2.88 \cdot 10^{-4} \cdot 59.3^{2} \cdot 4.524 \cdot 10^{-4} \cdot 345.2 \cdot 59.3 + (-1.802 \cdot 10^{-2}) \cdot 345.2 + (-1.83 \cdot 10^{-1}) \cdot 59.3 + 8.81 = 0.53\%$

(ii) Use the vehicle C speed determined in § 1036.527 and determine the vehicle A and B speeds as follows:

(A) Determine vehicle A speed using the following equation:

$$v_{refA} = v_{refC} \cdot \frac{55.0}{75.0}$$

Eq. 1036.505-8

Example:

V_{refC} = 68.42 mi/hr

$$v_{refA} = 68.4 \cdot \frac{55.0}{75.0} = 50.2\ mi/hr$$

(B) Determine vehicle B speed using the following equation:

$$v_{refB} = v_{refC} \cdot \frac{65.0}{75.0}$$

Eq. 1036.505-9

Example:

$$v_{refB} = 68.4 \cdot \frac{65.0}{75.0} = 59.3\ mi/hr$$

Table 1 to §1036.505—Supplemental Emission Test Ramped-modal Duty Cycle

SET mode	Engine testing			Hybrid powertrain testing								
	Time in mode (seconds)	Engine speed[a,b]	Torque (percent)[b,c]	Vehicle speed (mi/hr)	Road-grade coefficients							
					a	*b*	*c*	*d*	*e*	*f*	*g*	*h*
1a Steady-state	124	Warm Idle	0	Warm Idle	0	0	0	0	0	0	0	0
1b Transition	20	Linear Transition	Linear Transition	Linear Transition	-1.898E-08	-5.895E-07	3.780E-05	4.706E-03	6.550E-04	-2.679E-02	-1.027E+00	1.542E+01
2a Steady-state	196	A	100	v_{refA}	-1.227E-08	-5.504E-07	3.946E-05	1.212E-03	5.289E-04	-3.116E-02	-3.227E-01	1.619E+01
2b Transition	20	Linear Transition	Linear Transition	Linear Transition	-2.305E-09	-4.873E-07	2.535E-05	8.156E-04	4.730E-04	-2.383E-02	-2.975E-01	1.277E+01
3a Steady-state	220	B	50	v_{refB}	8.296E-09	-4.752E-07	1.291E-05	2.880E-04	4.524E-04	-1.802E-02	-1.830E-01	8.810E+00
3b Transition	20	B	Linear Transition	v_{refB}	4.642E-09	-5.143E-07	1.991E-05	3.556E-04	4.873E-04	-2.241E-02	-2.051E-01	1.068E+01
4a Steady-state	220	B	75	v_{refB}	1.818E-10	-5.229E-07	2.579E-05	5.575E-04	5.006E-04	-2.561E-02	-2.399E-01	1.287E+01
4b Transition	20	Linear Transition	Linear Transition	Linear Transition	5.842E-10	-4.992E-07	2.244E-05	4.700E-04	4.659E-04	-2.203E-02	-1.761E-01	1.072E+01
5a Steady-state	268	A	50	v_{refA}	3.973E-09	-4.362E-07	1.365E-05	4.846E-04	4.158E-04	-1.606E-02	-1.908E-01	8.206E+00
5b Transition	20	A	Linear Transition	v_{refA}	-2.788E-10	-4.226E-07	1.812E-05	6.591E-04	4.158E-04	-1.846E-02	-2.201E-01	1.001E+01
6a Steady-state	268	A	75	v_{refA}	-4.216E-09	-4.891E-07	2.641E-05	8.796E-04	4.692E-04	-2.348E-02	-2.595E-01	1.226E+01
6b Transition	20	A	Linear Transition	v_{refA}	3.979E-09	-4.392E-07	1.411E-05	2.079E-04	4.203E-04	-1.658E-02	-1.655E-01	7.705E+00
7a Steady-state	268	A	25	v_{refA}	1.211E-08	-3.772E-07	6.209E-07	1.202E-04	3.578E-04	-8.420E-03	-1.248E-01	4.189E+00
7b Transition	20	Linear Transition	Linear Transition	Linear Transition	1.659E-09	-4.954E-07	2.103E-05	4.849E-04	4.776E-04	-2.194E-02	-2.551E-01	1.075E+01
8a Steady-state	196	B	100	v_{refB}	-8.232E-09	-5.707E-07	3.900E-05	8.150E-04	5.477E-04	-3.325E-02	-2.956E-01	1.689E+01
8b Transition	20	B	Linear Transition	v_{refB}	4.286E-09	-5.150E-07	2.070E-05	5.214E-04	4.882E-04	-2.291E-02	-2.271E-01	1.157E+01
9a Steady-state	196	B	25	v_{refB}	1.662E-08	-4.261E-07	-2.705E-07	2.098E-05	4.046E-04	-1.037E-02	-1.263E-01	4.751E+00
9b Transition	20	Linear Transition	Linear Transition	Linear Transition	7.492E-09	-5.451E-07	1.950E-05	2.243E-04	5.114E-04	-2.331E-02	-2.270E-01	1.062E+01
10a Steady-state	28	C	100	v_{refC}	-1.073E-09	-5.904E-07	3.477E-05	5.069E-04	5.647E-04	-3.354E-02	-2.648E-01	1.651E+01

10b Transition	20	C	Linear Transition	v_{refC}	9.957E-09	-5.477E-07	1.826E-05	2.399E-04	5.196E-04	-2.410E-02	-2.010E-01	1.128E+01
11a Steady-state	4	C	25	v_{refC}	1.916E-08	-5.023E-07	3.715E-06	3.634E-05	4.706E-04	-1.539E-02	-1.485E-01	6.827E+00
11b Transition	20	C	Linear Transition	v_{refC}	1.474E-08	-5.176E-07	1.027E-05	1.193E-04	4.911E-04	-1.937E-02	-1.713E-01	8.872E+00
12a Steady-state	4	C	75	v_{refC}	6.167E-09	-5.577E-07	2.354E-05	3.524E-04	5.319E-04	-2.708E-02	-2.253E-01	1.313E+01
12b Transition	20	C	Linear Transition	v_{refC}	1.039E-08	-5.451E-07	1.756E-05	2.257E-04	5.165E-04	-2.366E-02	-1.978E-01	1.106E+01
13a Steady-state	4	C	50	v_{refC}	6.209E-09	-5.292E-07	2.126E-05	3.475E-04	5.132E-04	-2.552E-02	-2.212E-01	1.274E+01
13b Transition	20	Linear Transition	Linear Transition	Linear Transition	4.461E-09	-6.452E-07	1.301E-05	1.420E-03	5.779E-04	-1.564E-02	1.949E-01	7.998E+00
14 Steady-state	144	Warm Idle	0	Warm Idle	0	0	0	0	0	0	0	0

[a]Engine speed terms are defined in 40 CFR part 1065.

[b]Advance from one mode to the next within a 20 second transition phase. During the transition phase, command a linear progression from the settings of the current mode to the settings of the next mode.

[c]The percent torque is relative to maximum torque at the commanded engine speed.

■ 110. Revise § 1036.510 to read as follows:

§ 1036.510 Transient testing.

(a) Measure emissions by testing the engine or hybrid powertrain on a dynamometer with one of the following transient duty cycles to determine whether it meets the transient emission standards in subpart B of this part:

(1) For spark-ignition engines, use the transient duty cycle described in paragraph (a) of appendix B of this part.

(2) For compression-ignition engines, use the transient duty cycle described in paragraph (b) of appendix B of this part.

(3) For spark-ignition hybrid powertrains, use the transient duty cycle described in paragraph (a) of appendix B of this part.

(4) For compression-ignition hybrid powertrains, use the transient duty cycle described in paragraph (b) of appendix B of this part.

(b) Perform the following depending on if you are testing engines or hybrid powertrains:

(1) For engine testing, the transient duty cycles are based on normalized speed and torque values relative to certain maximum values. Denormalize torque as described in 40 CFR 1065.610(d). Denormalize speed as described in 40 CFR 1065.512.

(2) For hybrid powertrain testing, follow § 1036.505(b)(2) to carry out the test except replace $P_{\text{contrated}}$ with P_{rated}, the peak rated power determined in § 1036.527, keep the transmission in drive for all idle segments after the initial idle segment, and for hybrid engines select the transmission from Table 1 of § 1036.540 substituting ''engine'' for ''vehicle''. You may request to change the engine commanded torque at idle to better represent curb idle transmission torque (CITT).

(c) The transient test sequence consists of an initial run through the transient duty cycle from a cold start, 20 minutes with no engine operation, then a final run through of the same transient duty cycle. Emissions from engine starting is part of the both the cold and hot test intervals. Calculate the total emission mass of each constituent, *m,* and the total work, *W,* over each test interval according to 40 CFR 1065.650. Calculate the official transient emission result from the cold-start and hot-start test intervals using the following equation:

$$Official\ transient\ emission\ result = \frac{cold\ start\ emissions\,(g) + 6 \cdot hot\ start\ emissions\,(g)}{cold\ start\ work\,(hp \cdot hr) + 6 \cdot hot\ start\ work\,(hp \cdot hr)}$$

Eq. 1036.510-1

(d) Calculate cycle statistics and compare with the established criteria as specified in 40 CFR 1065.514 for engines and 40 CFR 1037.550 for hybrid powertrains to confirm that the test is valid.

■ 111. Amend § 1036.525 by revising paragraphs (a), (d) introductory text, and (d)(4) to read as follows:

§ 1036.525 Hybrid engines.

(a) For model years 2014 through 2020, if your engine system includes features that recover and store energy during engine motoring operation, test the engine as described in paragraph (d) of this section. For purposes of this section, features that recover energy between the engine and transmission are considered related to engine motoring.

* * * * *

(d) Measure emissions using the same procedures that apply for testing non-hybrid engines under this part, except as specified in this part and 40 CFR part 1065. For SET testing, deactivate the hybrid features unless we specify otherwise. The following provisions apply for testing hybrid engines:

* * * * *

(4) Limits on braking energy. Calculate brake energy fraction, x_b, as follows:

(i) Calculate x_b as the integrated negative work over the cycle divided by the integrated positive work over the cycle according to Eq. 1036.525–1. Calculate the brake energy limit for the engine, x_{bl}, according to Eq. 1036.525–2. If x_b is less than or equal to x_{bl}, use the integrated positive work for your emission calculations. If x_b is greater than x_{bl} use Eq. 1036.525–3 to calculate an adjusted value for cycle work, W_{cycle}, and use W_{cycle} as the work value for calculating emission results. You may set an instantaneous brake target that will prevent x_b from being larger than x_{bl} to avoid the need to subtract extra brake work from positive work.

$$x_b = \left| \frac{W_{neg}}{W_{pos}} \right|$$

Eq. 1036.525-1

Where:

W_{neg} = the negative work over the cycle.
W_{pos} = the positive work over the cycle.

$$x_{bl} = 4.158 \cdot 10^{-4} \cdot P_{max} + 0.2247$$

Eq. 1036.525-2

Where:

P_{max} = the maximum power of the engine with the hybrid system engaged, in kW.

$$W_{cycle} = W_{pos} - \left(\left| W_{neg} \right| - x_{bl} \cdot W_{pos} \right)$$

Eq. 1036.525-3

Where:

W_{cycle} = cycle work when x_b is greater than x_{bl}.

Example:

W_{neg} = 4.69 kW-hr
W_{pos} = 14.67 kW-hr
P_{max} = 223 kW

$$x_b = \left| \frac{4.69}{14.67} \right| = 0.31970$$

$x_{bl} = 4.158 \cdot 10^{-4} \cdot 223 + 0.2247 = 0.317423$

since $x_b > x_{bl}$;

$W_{cycle} = 14.67 - (|4.69| - 0.317423 \cdot 0.317423 \cdot 14.67) = 14.6365$ kW-hr

(ii) Convert from g/kW-hr to g/hp-hr as the final step in calculating emission results.

* * * * *

■ 112. Add § 1036.527 to read as follows:

§ 1036.527 Powertrain system rated power determination.

This section describes how to determine the peak and continuous rated power of conventional and hybrid powertrain systems and the vehicle speed for carrying out testing according

to §§ 1036.505 and 1036.510 and 40 CFR 1037.550.

(a) Set up the powertrain according to 40 CFR 1037.550, but use the vehicle parameters in § 1036.505(b)(2), except replace $P_{contrated}$ with the manufacturer declared system peak power and use applicable automatic transmission for the engine. Note that if you repeat the system rated power determination as described in paragraph (f)(4) of this section, use the measured system peak power in place of $P_{contrated}$.

(b) Prior to the start of each test interval verify the following:

(1) The state-of-charge of the rechargeable energy storage system (RESS) is ≥90% of the operating range between the minimum and maximum RESS energy levels specified by the manufacturer.

(2) The conditions of all hybrid system components are within their normal operating range as declared by the manufacturer.

(3) RESS restrictions (e.g., power limiting, thermal limits, etc.) are not active.

(c) Carry out the test as follows:

(1) Warm up the powertrain by operating it. We recommend operating the powertrain at any vehicle speed and road grade that achieves approximately 75% of its expected maximum power. Continue the warm-up until the engine coolant, block, or head absolute temperature is within ±2% of its mean value for at least 2 min or until the engine thermostat controls engine temperature.

(2) Start the test by keying on the powertrain and letting it sit at 0 mi/hr for 50 seconds.

(3) Set maximum driver demand for a full load acceleration at 6% road grade starting at an initial vehicle speed of 0 mi/hr.

(4) 268 seconds after the initiation of paragraph (c)(3) of this section, linearly ramp the grade from 6% to 0% over 300 seconds. Stop the test after the vehicle speed has stopped increasing above the maximum value observed during the test.

(d) Record the powertrain system angular speed and torque values measured at the dynamometer at 100 Hz and use these in conjunction with the vehicle model to calculate $P_{sys,vehicle}$.

(e) Calculate the system power, P_{sys}, for each data point as follows:

(1) For testing with the speed and torque measurements at the transmission input shaft, P_{sys} is equal to the calculated vehicle system peak power, $P_{sys,vehicle}$, determined in paragraphs (c) through (d) of this section.

(2) For testing with the speed and torque measurements at the axle input shaft or the wheel hubs, determine P_{sys} using the following equation:

$$P_{sys} = \frac{P_{sys,vehicle}}{\varepsilon_{trans} \cdot \varepsilon_{axle}}$$

Eq. 1036.527-1

Where:

$P_{sys,vehicle}$ = the calculated vehicle system peak power.

ε_{trans} = the default transmission efficiency = 0.95.

ε_{axle} = the default axle efficiency. Set this value = 1 for speed and torque measurement at the axle input shaft or = 0.955 at the wheel hubs.

Example:

$P_{sys,vehicle}$ = 317.6 kW

$$P_{sys} = \frac{317.6}{0.95 \cdot 0.955} = 350.1 \text{ kW}$$

(f) The system peak rated power, P_{rated}, is the highest calculated P_{sys} where the coefficient of variation (COV) <2%. The COV is determined as follows:

(1) Calculate the standard deviation, $\sigma(t)$.

$$\sigma(t) = \sqrt{\frac{1}{N} \cdot \sum_{i=1}^{N} \left(P_{sysi} - \bar{P}_{\mu}(t) \right)^2}$$

Eq. 1036.527-2

Where:

N = the number of measurement intervals = 20.

P_{sysi} = the N samples in the 100 Hz signal previously used to calculate the respective $P_{\mu}(t)$ values at the time step t.

$\bar{P}_{\mu}(t)$ = the power vector from the results of each test run that is determined by a moving averaging of 20 consecutive samples of $P_{\sigma v \sigma}$ in the 100 Hz that converts $P_{\mu}(t)$ to a 5 Hz signal.

(2) The resulting 5 Hz power and covariance signals are used to determine system rated power.

(3) The coefficient of variation COV(t) shall be calculated as the ratio of the standard deviation, $\sigma(t)$, to the mean value of power, $\bar{P}_{\mu}(t)$, for each time step t.

$$COV(t) = \frac{\sigma(t)}{\bar{P}_{\mu}(t)}$$

Eq. 1036.527-3

(4) If the determined system peak rated power is not within ±3% of the system peak rated power as declared by the manufacturer, you must repeat the procedure in paragraphs (a) through (f)(3) of this section using the measured system peak rated power determined in paragraph (f) of this section instead of the manufacturer declared value. The result from this repeat is the final determined system peak rated power.

(5) If the determined system peak rated power is within ±3% of the system peak rated power as declared by the manufacturer, the declared system peak rated power shall be used.

(g) Determine continuous rated power as follows:

(1) For conventional powertrains, $P_{contrated}$ equals P_{rated}.

(2) For hybrid powertrains, continuous rated power, $P_{contrated}$, is the maximum measured power from the data collected in paragraph (c)(3) of this section that meets the requirements in paragraph (f) of this section.

(h) Vehicle C speed, v_{refC}, is determined as follows:

(1) For powertrains where P_{sys} is greater than 0.98 · $P_{contrated}$ in top gear at more than one vehicle speed, v_{refC} is the average of the minimum and maximum vehicle speeds from the data collected in paragraph (c)(4) of this section that meets the requirements in paragraph (f) of this section.

(2) For powertrains where P_{sys} is not greater than 0.98 · $P_{contrated}$ in top gear at more than one vehicle speed, v_{refC} is the maximum vehicle speed from the data collected in paragraph (c)(4) of this section that meets the requirements in paragraph (f) of this section where P_{sys} is great than 0.98 · $P_{contrated}$.

■ 113. Revise § 1036.530 to read as follows:

§ 1036.530 Calculating greenhouse gas emission rates.

This section describes how to calculate official emission results for CO_2, CH_4, and N_2O.

(a) Calculate brake-specific emission rates for each applicable duty cycle as specified in 40 CFR 1065.650. Apply infrequent regeneration adjustment factors to your CO_2 emission results for each duty cycle as described in 40 CFR 86.004–28 starting in model year 2021. You may optionally apply infrequent regeneration adjustment factors for CH_4 and N_2O.

(b) Adjust CO_2 emission rates calculated under paragraph (a) of this section for measured test fuel properties as specified in this paragraph (b). This adjustment is intended to make official emission results independent of differences in test fuels within a fuel type. Use good engineering judgment to develop and apply testing protocols to

minimize the impact of variations in test fuels.

(1) Determine your test fuel's mass-specific net energy content, $E_{mfuelmeas}$, also known as lower heating value, in MJ/kg, expressed to at least three decimal places. Determine $E_{mfuelmeas}$ as follows:

(i) For liquid fuels, determine $E_{mfuelmeas}$ according to ASTM D4809 (incorporated by reference in § 1036.810). Have the sample analyzed by at least three different labs and determine the final value of your test fuel's $E_{mfuelmeas}$ as the median all of the lab results you obtained. If you have results from three different labs, we recommend you screen them to determine if additional observations are needed. To perform this screening, determine the absolute value of the difference between each lab result and the average of the other two lab results. If the largest of these three resulting absolute value differences is greater than 0.297 MJ/kg, we recommend you obtain additional results prior to determining the final value of $E_{mfuelmeas}$.

(ii) For gaseous fuels, determine $E_{mfuelmeas}$ according to ASTM D3588 (incorporated by reference in § 1036.810).

(2) Determine your test fuel's carbon mass fraction, w_C, as described in 40 CFR 1065.655(d), expressed to at least three decimal places; however, you must measure fuel properties rather than using the default values specified in Table 1 of 40 CFR 1065.655.

(i) For liquid fuels, have the sample analyzed by at least three different labs and determine the final value of your test fuel's w_C as the median of all of the lab results you obtained. If you have results from three different labs, we recommend you screen them to determine if additional observations are needed. To perform this screening, determine the absolute value of the difference between each lab result and the average of the other two lab results. If the largest of these three resulting absolute value differences is greater than 1.56 percent carbon, we recommend you obtain additional results prior to determining the final value of w_C.

(ii) For gaseous fuels, have the sample analyzed by a single lab and use that result as your test fuel's w_C.

(3) If, over a period of time, you receive multiple fuel deliveries from a single stock batch of test fuel, you may use constant values for mass-specific energy content and carbon mass fraction, consistent with good engineering judgment. To use this paragraph (b)(3), you must demonstrate that every subsequent delivery comes from the same stock batch and that the fuel has not been contaminated.

(4) Correct measured CO_2 emission rates as follows:

$$e_{CO2cor} = e_{CO2} \cdot \frac{E_{mfuelmeas}}{E_{mfuelCref} \cdot w_{Cmeas}}$$

Eq. 1036.530-1

Where:

e_{CO2} = the calculated CO_2 emission result.

$E_{mfuelmeas}$ = the mass-specific net energy content of the test fuel as determined in paragraph (b)(1) of this section. Note that dividing this value by w_{Cmeas} (as is done in this equation) equates to a carbon-specific net energy content having the same units as $E_{mfuelCref}$.

$E_{mfuelCref}$ = the reference value of carbon-mass-specific net energy content for the appropriate fuel type, as determined in Table 1 of this section.

w_{Cmeas} = carbon mass fraction of the test fuel (or mixture of test fuels) as determined in paragraph (b)(2) of this section.

Example:

e_{CO2} = 630.0 g/hp·hr

$E_{mfuelmeas}$ = 42.528 MJ/kg

$E_{mfuelCref}$ = 49.3112 MJ/kgC

w_{Cmeas} = 0.870

$$e_{CO2cor} = 630.0 \cdot \frac{42.528}{49.3112 \cdot 0.870}$$

e_{CO2cor} = 624.5 g/hp·hr

TABLE 1 TO § 1036.530—REFERENCE FUEL PROPERTIES

Fuel type [a]	Reference fuel carbon-mass-specific net energy content, $E_{mfuelCref}$, (MJ/kgC) [b]	Reference fuel carbon mass fraction, w_{Cref} [b]
Diesel fuel	49.3112	0.874
Gasoline	50.4742	0.846
Natural Gas	66.2910	0.750
LPG	56.5218	0.820
Dimethyl Ether	55.3886	0.521
High-level ethanol-gasoline blends	50.3211	0.576

[a] For fuels that are not listed, you must ask us to approve reference fuel properties.

[b] For multi-fuel streams, such as natural gas with diesel fuel pilot injection, use good engineering judgment to determine blended values for $E_{mfuelCref}$ and w_{Cref} using the values in this table.

(c) Your official emission result for each pollutant equals your calculated brake-specific emission rate multiplied by all applicable adjustment factors, other than the deterioration factor.

■ 114. Revise § 1036.535 to read as follows:

§ 1036.535 Determining steady-state engine fuel maps and fuel consumption at idle.

This section describes how to determine an engine's steady-state fuel map and fuel consumption at idle for model year 2021 and later vehicles. Vehicle manufacturers may need these values to demonstrate compliance with emission standards under 40 CFR part 1037 as described in § 1036.510.

(a) *General test provisions.* Perform fuel mapping using the procedure described in paragraph (b) of this section to establish measured fuel-consumption rates at a range of engine speed and load settings. Measure fuel consumption at idle using the procedure described in paragraph (c) of this section. If you perform cycle-average mapping for highway cruise cycles as described in § 1036.540, omit mapping under paragraph (b) of the section and instead perform mapping as described in paragraph (d) of this section. Use these measured fuel-consumption values to declare fuel-consumption rates for certification as described in paragraph (e) of this section.

(1) Map the engine's torque curve and declare engine idle speed as described in § 1036.503(c)(1) and (3), and perform emission measurements as described in 40 CFR 1065.501 and 1065.530 for discrete-mode steady-state testing. This section uses engine parameters and variables that are consistent with 40 CFR part 1065.

(2) Measure NO_X emissions for each specified sampling period in g/s. You

may perform these measurements using a NO_X emission-measurement system that meets the requirements of 40 CFR part 1065, subpart J. Include these measured NO_X values any time you report to us your fuel consumption values from testing under this section. If a system malfunction prevents you from measuring NO_X emissions during a test under this section but the test otherwise gives valid results, you may consider this a valid test and omit the NO_X emission measurements; however, we may require you to repeat the test if we determine that you inappropriately voided the test with respect to NO_X emission measurement.

(b) *Steady-state fuel mapping.* Determine fuel-consumption rates for each engine configuration over a series of steady-state engine operating points consisting of pairs of speed and torque points as described in this paragraph (b). You may use shared data across an engine platform to the extent that the fuel-consumption rates remain valid. For example, if you test a high-output configuration and create a different configuration that uses the same fueling strategy but limits the engine operation to be a subset of that from the high-output configuration, you may use the fuel-consumption rates for the reduced number of mapped points for the low-output configuration, as long as the narrower map includes at least 70 points. Perform fuel mapping as follows:

(1) Generate the sequence of steady-state engine operating points as follows:

(i) Determine the required steady-state engine operating points as follows:

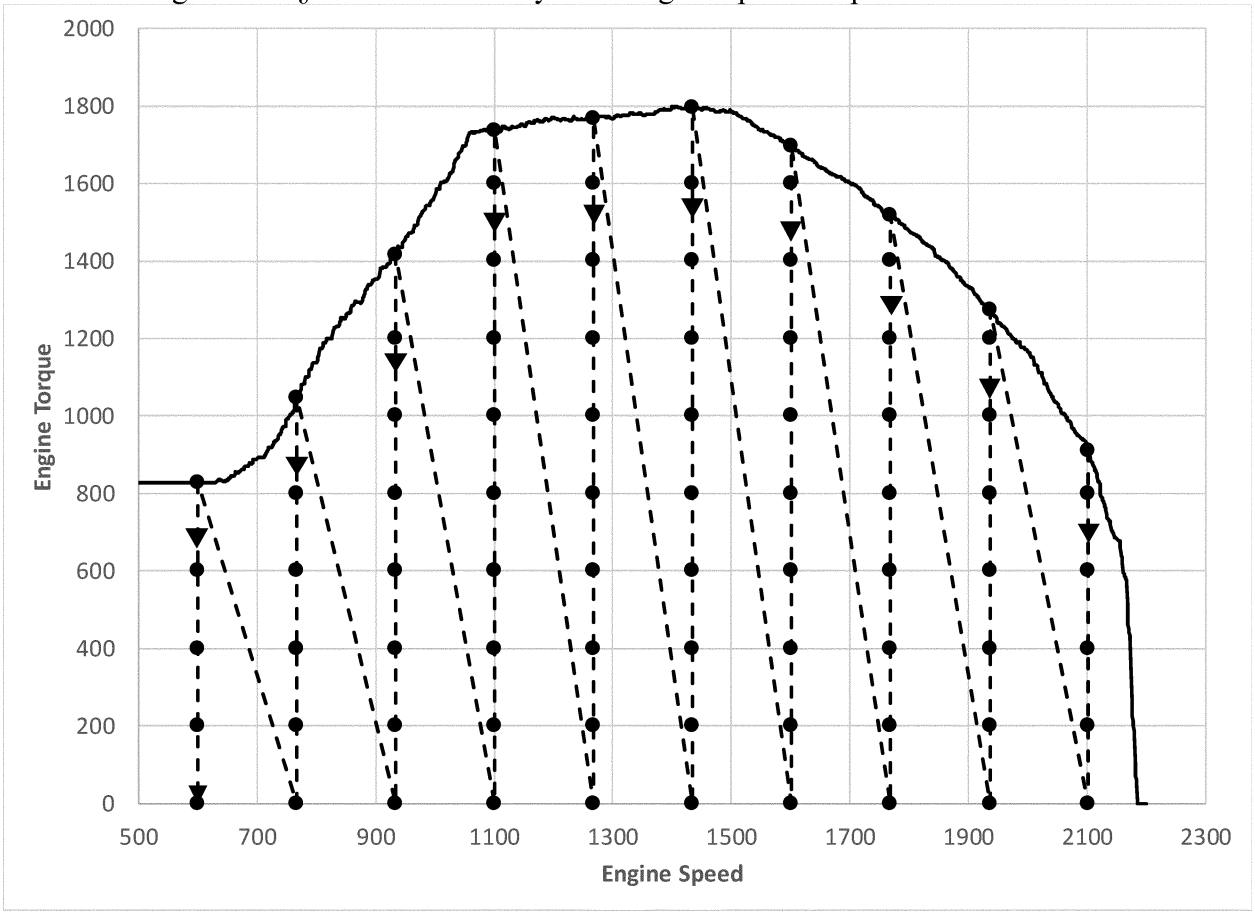
(A) For engines with an adjustable warm idle speed setpoint, select the following speed setpoints: Minimum warm idle speed, $f_{nidlemin}$, the highest speed above maximum power at which 70% of maximum power occurs, n_{hi}, and eight (or more) equally spaced points between $f_{nidlemin}$ and n_{hi}. (See 40 CFR 1065.610(c)). For engines without an adjustable warm idle speed replace minimum warm idle speed with warm idle speed, f_{nidle}.

(B) Select the following torque setpoints at each of the selected speed setpoints: Zero ($T = 0$), maximum mapped torque, $T_{max\ mapped}$, and eight (or more) equally spaced points between $T = 0$ and $T_{max\ mapped}$. For each of the selected speed setpoints, replace any torque setpoints that are above the mapped torque at the selected speed setpoint, T_{max}, minus 5 percent of $T_{max\ mapped}$, with one test point at T_{max}.

(ii) Select any additional (optional) steady-state engine operating points consistent with good engineering judgment. For example you may select additional points when linear interpolation between the defined points is not a reasonable assumption for determining fuel consumption from the engine. For each additional speed setpoint, increments between torque setpoints must be no larger than one-ninth of $T_{max,mapped}$ and we recommend including a torque setpoint of T_{max}. If you select a maximum torque setpoint less than T_{max}, use good engineering judgment to select your maximum torque setpoint to avoid unrepresentative data. Note that if the test points were added for the child rating, they should still be reported in the parent fuel map. We will select at least as many points as you.

(iii) Set the run order for all of the steady-state engine operating points (both required and optional) as described in this paragraph (b)(1)(iii). Arrange the list of steady-state engine operating points such that the resulting list of paired speed and torque setpoints begins with the highest speed setpoint and highest torque setpoint followed by decreasing torque setpoints at the highest speed setpoint. This will be followed by the next lowest speed setpoint and the highest torque setpoint at that speed setpoint continuing through all the steady-state engine operating points and ending with the lowest speed ($f_{nidlemin}$) and torque setpoint ($T = 0$). The following figure provides an example of this array of points and run order.

Figure 1 of §1036.535—Steady-state engine operation point run order



(iv) The steady-state engine operating points that have the highest torque setpoint for a given speed setpoint are optional reentry points into the steady-state-fuel-mapping sequence, should you need to pause or interrupt the sequence during testing.

(v) The steady-state engine operating points that have the lowest torque setpoint for a given speed setpoint are optional exit points from the steady-state-fuel-mapping sequence, should you need to pause or interrupt the sequence during testing.

(2) If the engine has an adjustable warm idle speed setpoint, set it to its minimum value, f_{nidlemin}.

(3) During each test interval, control speed within ±1% of n_{hi} and engine torque within ±5% of $T_{\text{max mapped}}$ except for the following cases where both setpoints cannot be achieved because the steady-state engine operating point is near an engine operating boundary:

(i) For steady-state engine operating points that cannot be achieved and the operator demand stabilizes at minimum; control the dynamometer so it gives priority to follow the torque setpoint and let the engine govern the speed (see 40 CFR 1065.512(b)(1)). In this case, the tolerance on speed control in paragraph (b)(3) of this section does not apply and engine torque is controlled to within ±25 N·m.

(ii) For steady-state engine operating points that cannot be achieved and the operator demand stabilizes at maximum and the speed setpoint is below 90% of n_{hi}; control the dynamometer so it gives priority to follow the speed setpoint and let the engine govern the torque (see 40 CFR 1065.512(b)(2)). In this case, the tolerance on torque control given in paragraph (b)(3) of this section does not apply.

(iii) For steady-state engine operating points that cannot be achieved and the operator demand stabilizes at maximum and the speed setpoint is at or above 90% of n_{hi}; control the dynamometer so it gives priority to follow the torque setpoint and let the engine govern the speed (see 40 CFR 1065.512(b)(1)). In this case, the tolerance on speed control given in paragraph (b)(3) of this section does not apply.

(iv) For the steady-state engine operating points at the minimum speed setpoint and maximum torque setpoint, you may select a dynamometer control mode that gives priority to speed and an engine control mode that gives priority to torque. In this case, if the operator demand stabilizes at minimum or maximum, the tolerance on torque control in paragraph (b)(3) of this section does not apply.

(4) You may select the appropriate dynamometer and engine control modes in real-time or at any time prior based on various factors including the operating setpoint location relative to an engine operating boundary. Warm-up the engine as described in 40 CFR 1065.510(b)(2).

(5) Within 60 seconds after concluding the warm-up, linearly ramp the speed and torque setpoints over 5 seconds to the first steady-state engine operating point from paragraph (b)(1) of this section.

(6) Operate the engine at the steady-state engine operating point for (70 ±1) seconds, and then start the test interval and record measurements using one of the following methods. You must also measure and report NO_X emissions over each test interval as described in paragraph (a)(2) of this section. If you use redundant systems for the determination of fuel consumption, for example combining measurements of

dilute and raw emissions when generating your map, follow the requirements of 40 CFR 1065.201(d).

(i) *Indirect measurement of fuel flow.* Record speed and torque and measure emissions and other inputs needed to run the chemical balance in 40 CFR 1065.655(c) for a (30 ±1) second test interval; determine the corresponding mean values for the test interval. For dilute sampling of emissions, in addition to the background measurement provisions described in 40 CFR 1065.140 you may do the following:

(A) If you use batch sampling to measure background emissions, you may sample periodically into the bag over the course of multiple test intervals and read them as allowed in paragraph (b)(7)(i) of this section. If you use this paragraph (b)(6)(i)(A), you must apply the same background readings to correct emissions from each of the applicable test intervals.

(B) You may determine background emissions by sampling from the dilution air during the non-test interval periods in the test sequence, including pauses allowed in paragraph (b)(7)(i) of this section. If you use this paragraph (b)(6)(i)(B), you must allow sufficient time for stabilization of the background measurement; followed by an averaging period of at least 30 seconds. Use the average of the most recent pre-test interval and the next post-test interval background readings to correct each test interval. The most recent pre-test interval background reading must be taken no greater than 30 minutes prior to the start of the first applicable test interval and the next post-test interval background reading must be taken no later than 30 minutes after the end of the last applicable test interval. Background readings must be taken prior to the test interval for each reentry point and after the test interval for each exit point or more frequently.

(ii) *Direct measurement of fuel flow.* Record speed and torque and measure fuel consumption with a fuel flow meter for a (30 ±1) second test interval; determine the corresponding mean values for the test interval.

(7) After completing the test interval described in paragraph (b)(6) of this section, linearly ramp the speed and torque setpoints over 5 seconds to the next steady-state engine operating point.

(i) You may pause the steady-state-fuel-mapping sequence at any of the reentry points (as noted in paragraph (b)(1)(iv) of this section) to calibrate emission-measurement instrumentation; to read and evacuate background bag samples collected over the course of multiple test intervals; or to sample the dilution air for background emissions. This paragraph (b)(7)(i) allows you to spend more than the 70 seconds noted in paragraph (b)(6) of this section.

(ii) If an infrequent regeneration event occurs, interrupt the steady-state-fuel-mapping sequence and allow the regeneration event to finish. You may continue to operate at the steady-state engine operating point where the event began or, using good engineering judgment, you may transition to another operating condition to reduce the regeneration event duration. You may complete any post-test interval activities to validate test intervals prior to the most recent reentry point. Once the regeneration event is finished, linearly ramp the speed and torque setpoints over 5 seconds to the most recent reentry point described in paragraph (b)(1)(iv) of this section, and restart the steady-state-fuel-mapping sequence by repeating the steps in paragraphs (b)(6) and (7) of this section for all the remaining steady-state engine operating points. Operate at the reentry point for longer than the 70 seconds in paragraph (b)(6), as needed, to bring the aftertreatment to representative thermal conditions. Void all test intervals in the steady-state-fuel-mapping sequence beginning with the reentry point and ending with the steady-state engine operating point where the regeneration event began.

(iii) You may interrupt the steady-state-fuel-mapping sequence after any of the exit points described in paragraph (b)(1)(v) of this section. To restart the steady-state-fuel-mapping sequence; begin with paragraph (b)(4) of this section and continue with paragraph (b)(5) of this section, except that the steady-state engine operating point is the next reentry point, not the first operating point from paragraph (b)(1) of this section. Follow paragraphs (b)(6) and (7) of this section until all remaining steady-state engine operating points are tested.

(iv) If the steady-state-fuel-mapping sequence is interrupted due test equipment or engine malfunction, void all test intervals in the steady-state-fuel-mapping sequence beginning with the most recent reentry point as described in paragraph (b)(1)(iv) of this section. Complete any post-test interval activities to validate test intervals prior to the most recent reentry point. Correct the malfunction and restart the steady-state-fuel-mapping sequence as described in paragraph (b)(7)(iii) of this section.

(v) If any steady-state engine test interval is voided, void all test intervals in the steady-state-fuel-mapping sequence beginning with the most recent reentry point as described in paragraph (b)(1)(iv) of this section and ending with the next exit point as described in paragraph (b)(1)(v) of this section. Rerun that segment of the steady-state-fuel-mapping sequence. If multiple test intervals are voided in multiple speed setpoints, you may exclude the speed setpoints where all of the test intervals were valid from the rerun sequence. Rerun the steady-state-fuel-mapping sequence as described in paragraph (b)(7)(iii) of this section.

(8) If you determine fuel-consumption rates using emission measurements from the raw or diluted exhaust, calculate the mean fuel mass flow rate, $\overline{\dot{m}}_{fuel}$, for each point in the fuel map using the following equation:

$$\overline{\dot{m}}_{fuel} = \frac{M_C}{w_{Cmeas}} \cdot \left(\overline{\dot{n}}_{exh} \cdot \frac{\overline{x}_{Ccombdry}}{1 + \overline{x}_{H2Oexhdry}} - \frac{\overline{\dot{m}}_{CO2DEF}}{M_{CO2}} \right)$$

Eq. 1036.535-1

Where:

$\overline{\dot{m}}_{fuel}$ = mean fuel mass flow rate for a given fuel map setpoint, expressed to at least the nearest 0.001 g/s.

M_C = molar mass of carbon.

w_{Cmeas} = carbon mass fraction of fuel (or mixture of test fuels) as determined in 40 CFR 1065.655(d), except that you may not use the default properties in Table 1 of 40 CFR 1065.655 to determine α, β, and w_C for liquid fuels. You may not account for the contribution to α, β, γ, and δ of diesel exhaust fluid or other non-fuel fluids injected into the exhaust.

$\overline{\dot{n}}_{exh}$ = the mean raw exhaust molar flow rate from which you measured emissions according to 40 CFR 1065.655.

$\bar{x}_{Ccombdry}$ = the mean concentration of carbon from fuel and any injected fluids in the exhaust per mole of dry exhaust as determined in 40 CFR 1065.655(c).
$\bar{x}_{H2Oexhdry}$ = the mean concentration of H_2O in exhaust per mole of dry exhaust as determined in 40 CFR 1065.655(c).
$\bar{\dot{m}}_{CO2DEF}$ = the mean CO_2 mass emission rate resulting from diesel exhaust fluid decomposition as determined in paragraph (b)(9) of this section. If your engine does not use diesel exhaust fluid, or if you choose not to perform this correction, set $\bar{\dot{m}}_{CO2DEF}$ equal to 0.
M_{CO2} = molar mass of carbon dioxide.

Example:

M_C = 12.0107 g/mol
w_{Cmeas} = 0.869
$\bar{n}_{exh}$ = 25.534 mol/s
$\bar{x}_{Ccombdry}$ = 0.002805 mol/mol
$\bar{x}_{H2Oexhdry}$ = 0.0353 mol/mol
$\bar{\dot{m}}_{CO2DEF}$ = 0.0726 g/s
M_{CO2} = 44.0095 g/mol

$$\bar{\dot{m}}_{fuel} = \frac{12.0107}{0.869} \cdot \left(25.534 \cdot \frac{0.002805}{1+0.0353} - \frac{0.0726}{44.0095} \right) = 0.933 \text{ g/s}$$

(9) If you determine fuel-consumption rates using emission measurements with engines that utilize diesel exhaust fluid for NO_X control, correct for the mean CO_2 mass emissions resulting from diesel exhaust fluid decomposition at each fuel map setpoint using the following equation:

$$\bar{\dot{m}}_{CO2DEF} = \bar{\dot{m}}_{DEF} \cdot \frac{M_{CO2} \cdot w_{CH4N2O}}{M_{CH4N2O}}$$

Eq. 1036.535-2

Where:

$\bar{\dot{m}}_{DEF}$ = the mean mass flow rate of injected urea solution diesel exhaust fluid for a given sampling period, determined directly from the electronic control module, or measured separately, consistent with good engineering judgment.
M_{CO2} = molar mass of carbon dioxide.
w_{CH4N2O} = mass fraction of urea in diesel exhaust fluid aqueous solution. Note that the subscript ''CH4N2O'' refers to urea as a pure compound and the subscript ''DEF'' refers to the aqueous urea diesel exhaust fluid as a solution of urea in water. You may use a default value of 32.5% or use good engineering judgment to determine this value based on measurement.
M_{CH4N2O} = molar mass of urea.

Example:

$\bar{\dot{m}}_{DEF}$ = 0. 304 g/s
M_{CO2} = 44.0095 g/mol
w_{CH4N2O} = 32.5% = 0.325
M_{CH4N2O} = 60.05526 g/mol

$$\bar{\dot{m}}_{CO2DEF} = 0.304 \cdot \frac{44.0095 \cdot 0.325}{60.05526} = 0.0726 \text{ g/s}$$

(c) *Fuel consumption at idle.* Determine fuel-consumption rates for engines certified for installation in vocational vehicles for each engine configuration over a series of engine-idle operating points consisting of pairs of speed and torque points as described in this paragraph (c). You may use shared data across engine configurations, consistent with good engineering judgment. Perform measurements as follows:

(1) Determine the required engine-idle operating points as follows:

(i) Select the following two speed setpoints:

(A) Engines with an adjustable warm idle speed setpoint: Minimum warm idle speed, $f_{nidlemin}$, and the maximum warm idle speed, $f_{nidlemax}$.

(B) Engines without an adjustable warm idle speed setpoint: Warm idle speed (with zero torque on the primary output shaft), f_{nidle}, and 1.15 times f_{nidle}.

(ii) Select the following two torque setpoints at each of the selected speed setpoints: 0 and 100 N·m.

(iii) You may run these four engine-idle operating points in any order.

(2) Control speed and torque as follows:

(i) *Engines with an adjustable warm idle speed setpoint.* For the warm-up in paragraph (c)(3) of this section and the transition in paragraph (c)(4) of this section control both speed and torque. At any time prior to reaching the next engine-idle operating point, set the engine's adjustable warm idle speed setpoint to the speed setpoint of the next engine-idle operating point in the sequence. This may be done before or during the warm-up or during the transition. Near the end of the transition period control speed and torque as described in paragraph (b)(3)(i) of this section. Once the transition is complete; set the operator demand to minimum to allow the engine governor to control speed; and control torque with the dynamometer as described in paragraph (b)(3) of this section.

(ii) *Engines without an adjustable warm idle speed setpoint.* Control speed and torque with operator demand and the dynamometer for the engine-idle operating points at the higher speed setpoint as described in paragraph (b)(3) of this section. Both the speed and torque tolerances apply for these points because they are not near the engine's operating boundary and are achievable. Control speed and torque for the engine-idle operating points at the lower speed setpoint as described in paragraph (c)(2)(i) of this section except for setting the engine's adjustable warm idle speed setpoint.

(3) Warm-up the engine as described in 40 CFR 1065.510(b)(2).

(4) After concluding the warm-up procedure, linearly ramp the speed and torque setpoints over 20 seconds to operate the engine at the next engine-idle operating point from paragraph (c)(1) of this section.

(5) Operate the engine at the engine-idle operating point for (180 ±1) seconds, and then start the test interval and record measurements using one of the following methods. You must also measure and report NO_X emissions over each test interval as described in paragraph (a)(2) of this section. If you use redundant systems for the determination of fuel consumption, for example combining measurements of dilute and raw emissions when generating your map, follow the requirements of 40 CFR 1065.201(d).

(i) *Indirect measurement of fuel flow.* Record speed and torque and measure emissions and other inputs needed to run the chemical balance in 40 CFR 1065.655(c) for a (600 ±1) second test interval; determine the corresponding mean values for the test interval. We

will use an average of indirect measurement of fuel flow with dilute sampling and direct sampling. For dilute sampling of emissions, measure background according to the provisions described in 40 CFR 1065.140, but read the background as described in paragraph (c)(7)(i) of this section. If you use batch sampling to measure background emissions, you may sample periodically into the bag over the course of multiple test intervals and read them as allowed in paragraph (b)(7)(i) of this section. If you use this paragraph (c)(5)(i), you must apply the same background readings to correct emissions from each of the applicable test intervals. Note that the minimum dilution ratio requirements for PM sampling in 40 CFR 1065.140(e)(2) do not apply. We recommend minimizing the CVS flow rate to minimize errors due to background correction consistent with good engineering judgment and operational constraints such as minimum flow rate for good mixing.

(ii) *Direct measurement of fuel flow.* Record speed and torque and measure fuel consumption with a fuel flow meter for a (600 ±1) second test interval; determine the corresponding mean values for the test interval.

(6) After completing the test interval described in paragraph (c)(5) of this section, repeat the steps in paragraphs (c)(3) through (5) of this section for all the remaining engine-idle operating points. After completing the test interval on the last engine-idle operating point, the fuel-consumption-at-idle sequence is complete.

(7) The following provisions apply for interruptions in the fuel-consumption-at-idle sequence in a way that is intended to produce results equivalent to running the sequence without interruption:

(i) You may pause the fuel-consumption-at-idle sequence after each test interval to calibrate emission-measurement instrumentation and to read and evacuate background bag samples collected over the course of a single test interval. This paragraph (c)(7)(i) allows you to shut-down the engine or to spend more time at the speed/torque idle setpoint after completing the test interval before transitioning to the step in paragraph (c)(3) of this section.

(ii) If an infrequent regeneration event occurs, interrupt the fuel-consumption-at-idle sequence and allow the regeneration event to finish. You may continue to operate at the engine-idle operating point where the event began or, using good engineering judgment, you may transition to another operating condition to reduce the regeneration event duration. If the event occurs during a test interval, void that test interval. Once the regeneration event is finished, restart the fuel-consumption-at-idle sequence by repeating the steps in paragraphs (c)(3) through (5) of this section for all the remaining engine-idle operating points.

(iii) You may interrupt the fuel-consumption-at-idle sequence after any of the test intervals. Restart the fuel-consumption-at-idle sequence by repeating the steps in paragraphs (c)(3) through (5) of this section for all the remaining engine-idle operating points.

(iv) If the fuel-consumption-at-idle sequence is interrupted due to test equipment or engine malfunction, correct the malfunction and restart the fuel-consumption-at-idle sequence by repeating the steps in paragraphs (c)(3) through (5) of this section for all the remaining engine-idle operating points. If the malfunction occurred during a test interval, void that test interval.

(v) If any idle test intervals are voided, repeat the steps in paragraphs (c)(3) through (5) of this section for each of the voided engine-idle operating points.

(8) Correct the measured or calculated mean fuel mass flow rate, $\overline{m}_{fuel}$ at each of the engine-idle operating points to account for mass-specific net energy content as described in paragraph (b)(13) of this section.

(d) *Steady-state fuel maps used for cycle-average fuel mapping of the cruise cycles.* Determine fuel-consumption rates for each engine configuration over a series of steady-state engine operating points near idle as described in this paragraph (d). You may use shared data across an engine platform to the extent that the fuel-consumption rates remain valid.

(1) Perform steady-state fuel mapping as described in paragraph (b) of this section with the following exceptions:

(i) All the required steady-state engine operating points as described in paragraph (b)(1)(i) of this section are optional.

(ii) Select speed setpoints to cover the range of idle speeds expected as follows:

(A) The minimum number of speed setpoints is two.

(B) For engines with an adjustable warm idle speed setpoint, the minimum speed setpoint must be equal to the minimum warm idle speed, $f_{nidlemin}$, and the maximum speed setpoint must be equal to or greater than the maximum warm idle speed, $f_{nidlemax}$. The minimum speed setpoint for engines without an adjustable warm idle speed setpoint, must be equal to the warm idle speed (with zero torque on the primary output shaft), f_{nidle}, and the maximum speed setpoint must be equal to or greater than 1.15 times the warm idle speed, f_{nidle}.

(iii) Select torque setpoints at each speed setpoint to cover the range of idle torques expected as follows:

(A) The minimum number of torque setpoints at each speed setpoint is three. Note that you must meet the minimum torque spacing requirements described in paragraph (b)(1)(ii) of this section.

(B) The minimum torque setpoint at each speed setpoint is zero.

(C) The maximum torque setpoint at each speed setpoint must be greater than or equal to the estimated maximum torque at warm idle (in-drive) conditions, $T_{idlemaxest}$, using the following equation. For engines with an adjustable warm idle speed setpoint, evaluate $T_{idlemaxest}$ at the maximum warm idle speed, $f_{nidlemax}$. For engines without an adjustable warm idle speed setpoint, use the warm idle speed (with zero torque on the primary output shaft), f_{nidle}.

$$T_{idlemaxest} = \left(\frac{T_{fnstall} \cdot f_{nidle}^2}{f_{fnstall}^2} + \frac{P_{acc}}{f_{nidle}}\right) \cdot 1.1$$

Eq. 1036.535-3

Where:

$T_{fnstall}$ = the maximum engine torque at f_{nstall}.

f_{nidle} = the applicable engine idle speed as described in this paragraph (d).

f_{nstall} = the stall speed of the torque converter; use f_{ntest} or 2250 r/min, whichever is lower.

P_{acc} = accessory power for the vehicle class; use 1500 W for Vocational Light HDV, 2500 W for Vocational Medium HDV, and 3500 W for Tractors and Vocational Heavy HDV.

Example:

$T_{fnstall}$ = 1870 N·m

f_{ntest} = 1740.8 r/min = 182.30 rad/s

f_{nstall} = 1740.8 r/min = 182.30 rad/s

f_{nidle} = 700 r/min = 73.30 rad/s

P_{acc} = 1500 W

$$T_{idlemaxest} = \left(\frac{1870 \cdot 73.30^2}{182.30^2} + \frac{1500}{73.30}\right) \cdot 1.1 = 355.07 \text{ N} \cdot \text{m}$$

(2) Remove the points from the default map that are below 115% of the maximum speed and 115% of the maximum torque of the boundaries of the points measured in paragraph (d)(1) of this section.

(3) Add the points measured in paragraph (d)(1) of this section.

(e) *Carbon balance verification.* The provisions related to carbon balance verification in § 1036.543 apply to test intervals in this section.

(f) *Correction for net energy content.* Correct the measured or calculated mean fuel mass flow rate, $\overline{\dot{m}}_{fuel}$ at each engine operating condition as specified in paragraphs (b), (c), and (d) of this section to a mass-specific net energy content of a reference fuel using the following equation:

$$\overline{\dot{m}}_{fuelcor} = \overline{\dot{m}}_{fuel} \cdot \frac{E_{mfuelmeas}}{E_{mfuelCref} \cdot w_{Cref}}$$

Eq. 1036.535-4

Where:

$E_{mfuelmeas}$ = the mass-specific net energy content of the test fuel as determined in § 1036.530(b)(1).

$E_{mfuelCref}$ = the reference value of carbon-mass-specific net energy content for the appropriate fuel. Use the values shown in Table 1 of § 1036.530 for the designated fuel types, or values we approve for other fuel types.

w_{Cref} = the reference value of carbon mass fraction for the test fuel as shown in Table 1 of § 1036.530 for the designated fuels. For other fuels, use the reference carbon mass fraction of diesel fuel for engines subject to compression-ignition standards, and use the reference carbon mass fraction of gasoline for engines subject to spark-ignition standards.

Example:

$\overline{\dot{m}}_{fuel}$ = 0.933 g/s
$E_{mfuelmeas}$ = 42.7984 MJ/kgC
$E_{mfuelCref}$ = 49.3112 MJ/kgC
w_{Cref} = 0.874

$$\overline{\dot{m}}_{fuel} = 0.933 \cdot \frac{42.7984}{49.3112 \cdot 0.874} = 0.927 \text{ g/s}$$

(g) *Measured vs. declared fuel-consumption rates.* Select fuel-consumption rates in g/s to characterize the engine's fuel maps. These declared values may not be lower than any corresponding measured values determined in paragraphs (b) through (d) of this section. This includes if you use multiple measurement methods as allowed in paragraph (b)(7) of this section. You may select any value that is at or above the corresponding measured value. These declared fuel-consumption rates, which serve as emission standards under § 1036.108, are the values that vehicle manufacturers will use for certification under 40 CFR part 1037. Note that production engines are subject to GEM cycle-weighted limits as described in § 1036.301. If you perform the carbon balance error verification in § 1036.543, for each fuel map data point:

(1) If you pass the $\in_{rC}$ verification, you must declare fuel-consumption rates no lower than the average of the direct and indirect fuel measurements.

(2) If you pass either the $\in_{aC}$ verification or $\in_{aCrate}$ verification and fail the $\in_{rC}$ verification, you must declare fuel-consumption rates no lower than the indirect fuel measurement.

(3) If you don't pass the $\in_{rC}$, $\in_{aC}$, and $\in_{aCrate}$ verifications, you must declare fuel-consumption rates no lower than the highest rate for the direct and indirect fuel measurements.

(h) *EPA measured fuel-consumption rates.* If we pass the carbon mass relative error for a test interval ($\in_{rC}$) verification, the official fuel-consumption rate result will be the average of the direct and indirect fuel measurements. If we pass either the carbon mass absolute error for a test interval ($\in_{aC}$) verification or carbon mass rate absolute error for a test interval ($\in_{aCrate}$) verification and fail the $\in_{rC}$ verification, the official fuel-consumption rate result will be the indirect fuel measurement.

■ 115. Revise § 1036.540 to read as follows:

§ 1036.540 Determining cycle-average engine fuel maps.

(a) *Overview.* This section describes how to determine an engine's cycle-average fuel maps for model year 2021 and later vehicles with transient cycles. This section may also apply for highway cruise cycles as described in § 1036.510. Vehicle manufacturers may need cycle-average fuel maps for transient duty cycles, highway cruise cycles, or both to demonstrate compliance with emission standards under 40 CFR part 1037. Generating cycle-average engine fuel maps consists of the following steps:

(1) Determine the engine's torque maps as described in § 1036.510(a).

(2) Determine the engine's steady-state fuel map and fuel consumption at idle as described in § 1036.535.

(3) Simulate several different vehicle configurations using GEM (see 40 CFR 1037.520) to create new engine duty cycles, as described in paragraph (c) of this section. The transient vehicle duty cycles for this simulation are in 40 CFR part 1037, appendix I; the highway cruise cycles with grade are in 40 CFR part 1037, appendix IV. Note that GEM simulation relies on vehicle service classes as described in 40 CFR 1037.140.

(4) Test the engines using the new duty cycles to determine fuel consumption, cycle work, and average vehicle speed as described in paragraph (d) of this section and establish GEM inputs for those parameters for further vehicle simulations as described in paragraph (e) of this section.

(b) *General test provisions.* The following provisions apply for testing under this section:

(1) To perform fuel mapping under this section for hybrid engines, make sure the engine and its hybrid features are appropriately configured to represent the hybrid features in your testing.

(2) Measure NO_X emissions for each specified sampling period in grams. You may perform these measurements using a NO_X emission-measurement system that meets the requirements of 40 CFR part 1065, subpart J. Include these measured NO_X values any time you report to us your fuel consumption values from testing under this section. If a system malfunction prevents you from measuring NO_X emissions during a test under this section but the test otherwise gives valid results, you may consider this a valid test and omit the NO_X emission measurements; however, we may require you to repeat the test if we determine that you inappropriately voided the test with respect to NO_X emission measurement.

(3) This section uses engine parameters and variables that are consistent with 40 CFR part 1065.

(4) For variable-speed gaseous-fueled engines with a single-point fuel injection system, apply all of the following statistical criteria to validate the transient duty cycle in 40 CFR part 1037, appendix I:

TABLE 1 TO § 1036.540

Parameter	Speed	Torque	Power
Slope, a_1	$0.950 \le a_1 \le 1.030$	$0.830 \le a_1 \le 1.030$	$0.830 \le a_1 \le 1.030$.
Absolute value of intercept, $\lvert a_0 \rvert$	≤10% of warm idle	≤3% of maximum mapped torque	≤2% of maximum mapped power.

TABLE 1 TO § 1036.540—Continued

Parameter	Speed	Torque	Power
Standard error of the estimate, *SEE*.	≤5% of maximum test speed	≤15% of maximum mapped torque.	≤15% of maximum mapped power.
Coefficient of determination, r^2	≥0.970	≥0.700	≥0.750.

(c) *Create engine duty cycles.* Use GEM to simulate several different vehicle configurations to create transient and highway cruise engine duty cycles corresponding to each vehicle configuration, as follows:

(1) Set up GEM to simulate vehicle operation based on your engine's torque maps, steady-state fuel maps, engine minimum warm-idle speed and fuel consumption at idle as described in paragraphs (a)(1) and (2) of this section, as well as 40 CFR 1065.405(b). For engines without an adjustable warm idle speed replace minimum warm idle speed with warm idle speed, f_{nidle}.

(2) Set up GEM with transmission parameters for different vehicle service classes and vehicle duty cycles as described in Table 2 of this section. For automatic transmissions set neutral idle to ''Y'' in the vehicle file. These values are based on automatic or automated manual transmissions, but they apply for all transmission types.

Table 2 to §1036.540—Assigned Transmission Parameters

	LIGHT HDV AND MEDIUM HDV		**TRACTORS AND HEAVY HDV, TRANSIENT CYCLE**		**TRACTORS AND HEAVY HDV, HIGHWAY CRUISE CYCLE**	
Transmission Type	Automatic Transmission		Automatic Transmission		Automated Manual Transmission	
Gear Number	Gear Ratio	Torque Limit (N·m)	Gear Ratio	Torque Limit (N·m)	Gear Ratio	Torque Limit (N·m)
1	3.10	T_{max}	3.51	T_{max}	12.8	T_{max}
2	1.81		1.91		9.25	
3	1.41		1.43		6.76	
4	1.00		1.00		4.90	
5	0.71		0.74		3.58	
6	0.61		0.64		2.61	
7	—				1.89	
8					1.38	
9					1.00	
10					0.73	
Lockup Gear	3				—	

(i) Use one of the following equations to determine tire size, $\frac{f_{ntire}}{v_{vehicle}}$, and drive axle ratio, k_a, at each of the defined engine speeds in Tables 3 through 5 of this section:

(A) Select a value for $\left[\frac{f_{ntire}}{v_{vehicle}}\right]_{[speed]}$ and solve for $k_{a[speed]}$ using the following equation:

$$k_{a[speed]} = \frac{f_{n[speed]}}{\left[\frac{f_{ntire}}{v_{vehicle}}\right]_{[speed]} \cdot k_{topgear} \cdot v_{ref}}$$

Eq. 1036.540-1

Where:

$f_{n[speed]}$ = engine's angular speed as determined in paragraph (c)(3)(ii) or (iii) of this section.

$k_{topgear}$ = transmission gear ratio in the highest available gear from Table 2 of this section (for powertrain testing use actual top gear ratio).

v_{ref} = reference speed. Use 65 mi/hr for the transient cycle and the 65 mi/hr highway cruise cycle, and use 55 mi/hr for the 55 mi/hr highway cruise cycle.

(B) Select a value for $k_{a[speed]}$ and solve for $\left[\frac{f_{ntire}}{v_{vehicle}}\right]_{[speed]}$ using the following equation:

$$\left[\frac{f_{ntire}}{v_{vehicle}}\right]_{[speed]} = \frac{f_{n[speed]}}{k_{a[speed]} \cdot k_{topgear} \cdot v_{ref}}$$

Eq. 1036.540-2

Example for a vocational Light HDV or vocational Medium HDV with a 6-speed automatic transmission at B speed (Test 3 or 4 in Table 3 of this section):

f_{nrefB} = 1870 r/min = 31.17 r/s

k_{aB} = 4.0

$k_{topgear}$ = 0.61

v_{ref} = 65 mi/hr = 29.06 m/s

$$\left[\frac{f_{ntire}}{v_{vehicle}}\right]_{B} = \frac{31.17}{4.0 \cdot 0.61 \cdot 29.06} = 0.4396 \text{ r/m}$$

(ii) Test at least eight different vehicle configurations for engines that will be installed in vocational Light HDV or vocational Medium HDV using vehicles in Table 3 of this section. For example, if your engines will be installed in vocational Medium HDV and vocational Heavy HDV, you might select Tests 2, 4, 6, and 8 of Table 3 of this section to represent vocational Medium HDV and Tests 2, 3, 4, 6, and 9 of Table 4 of this section to represent vocational Heavy HDV. You may test your engine using additional vehicle configurations with different k_a and C_{rr} values to represent a wider range of in-use vehicle configurations. For all vehicle configurations set the drive axle configuration to 4×2. For powertrain testing, set $M_{rotating}$ to 340 kg and Eff_{axle} to 0.955 for all vehicle configurations. Set the axle ratio, k_a, and tire size, $\frac{f_{ntire}}{v_{vehicle}}$, for each vehicle configuration based on the corresponding designated engine speed (f_{nrefA}, f_{nrefB}, f_{nrefC}, or f_{ntest}) at 65 mi/hr for the transient cycle and the 65 mi/hr highway cruise cycle, and at 55 mi/hr for the 55 mi/hr highway cruise cycle. These vehicle speeds apply equally for engines subject to spark-ignition standards. Use the following

settings specific to each vehicle configuration:

Table 3 to §1036.540—Vehicle Configurations for Testing Vocational Light HDV or Vocational Medium HDV

	VEHICLE CONFIGURATION NUMBER							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
C_{rr} (kg/tonne)	6.2	7.7	6.2	7.7	6.2	7.7	6.2	7.7
$\frac{f_{ntire}}{v_{vehicle}}$ and k_a for CI engines at engine speed	A	A	B	B	C	C	Maximum test speed	Maximum test speed
$\frac{f_{ntire}}{v_{vehicle}}$ and k_a for SI engines at engine speed	Minimum NTE exclusion speed	Minimum NTE exclusion speed	A	A	B	B	C	C
GEM Regulatory Subcategory	LHD	MHD	LHD	MHD	LHD	MHD	LHD	MHD
M (kg)[a]	7,257	11,408	7,257	11,408	7,257	11,408	7,257	11,408
C_dA[a]	3.4	5.4	3.4	5.4	3.4	5.4	3.4	5.4

[a]Note that M and C_dA are applicable for powertrain testing only since GEM contains default M and C_dA values for each vocational regulatory category.

(iii) Test nine different vehicle configurations for engines that will be installed in vocational Heavy HDV and for tractors that are not heavy-haul tractors. Test six different vehicle configurations for heavy-haul tractors. You may test your engines for additional configurations with different k_a, C_dA, and C_{rr} values to represent a wider range of in-use vehicle configurations. Set C_{rr} to 6.9 for all nine defined vehicle configurations. For class 7 and 8 vehicle configurations set the drive axle configuration to 4×2 and 6×4 respectively. For powertrain testing, set Eff_{axle} to 0.955 for all vehicle configurations. Set the axle ratio, k_a, and tire size,

$$\frac{f_{ntire}}{v_{vehicle}},$$

for each vehicle configuration based on the corresponding designated engine speed (B, f_{ntest}, or the minimum NTE exclusion speed as determined in 40 CFR 86.1370(b)(1)) at 65 mi/hr for the transient duty cycle and the 65 mi/hr highway cruise duty cycle, and at 55 mi/hr for the 55 mi/hr highway cruise duty cycle. Use the settings specific to each vehicle configuration as shown in Table 4 or Table 5 of this section, as appropriate. Engines subject to testing under both Tables 4 and 5 of this section need not repeat overlapping vehicle configurations, so complete fuel mapping requires testing 12 (not 15) vehicle configurations for those engines. However, the preceding sentence does not apply if you choose to create two separate maps from the vehicle configurations defined in Tables 4 and 5 of this section. Note that $M_{rotating}$ is needed for powertrain testing but not for engine testing. Tables 4 and 5 follow:

Table 4 of §1036.540—Vehicle Configurations for Testing General Purpose Tractors and Vocational Heavy HDV

	VEHICLE CONFIGURATION NUMBER								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
C_dA	5.4	4.7	4.0	5.4	4.7	4.0	5.4	4.7	4.0
$M_{rotating}$ (kg)	1,021	794	794	1,021	794	794	1,021	794	794
$\frac{f_{ntire}}{v_{vehicle}}$ and k_a at engine speed	Minimum NTE exclusion speed	Minimum NTE exclusion speed	Minimum NTE exclusion speed	B	B	B	Maximum test speed	Maximum test speed	Maximum test speed
GEM Regulatory Subcategory	C8_SC_HR	C8_DC_MR	C7_DC_MR	C8_SC_HR	C8_DC_MR	C7_DC_MR	C8_SC_HR	C8_DC_MR	C7_DC_MR
Vehicle Weight Reduction (lbs)[a]	0	13,275	6,147	0	13,275	6,147	0	13,275	6,147
M (kg)[b]	31,978	25,515	19,051	31,978	25,515	19,051	31,978	25,515	19,051

[a]Note that vehicle weight reduction is not applicable for powertrain testing, since M is the total mass that is to be simulated.
[b]Note that M is applicable for powertrain testing only since GEM contains default M values for each vocational regulatory category.

Table 5 of §1036.540—Vehicle Configurations for Testing Heavy-Haul Tractors

	VEHICLE CONFIGURATION NUMBER					
	1	**2**	**3**	**4**	**5**	**6**
C_dA	5.0	5.4	5.0	5.4	5.0	5.4
$M_{rotating}$ (kg)	1,021	1,021	1,021	1,021	1,021	1,021
$\frac{f_{ntire}}{v_{vehicle}}$ and k_a at engine speed	Minimum NTE exclusion speed	Minimum NTE exclusion speed	B	B	Maximum test speed	Maximum test speed
GEM Regulatory Subcategory	C8_HH	C8_SC_HR	C8_HH	C8_SC_HR	C8_HH	C8_SC_HR
M (kg)	53,751	31,978	53,751	31,978	53,751	31,978

(iv) If the engine will be installed in a combination of vehicles defined in paragraphs (c)(3)(ii) and (iii) of this section, use good engineering judgment to select at least nine vehicle configurations from Tables 3 and 4 of this section that best represent the range of vehicles your engine will be sold in. If there are not nine representative configurations you must add vehicles, that you define, to reach a total of at least nine vehicles. For example, if your engines will be installed in vocational Medium HDV and vocational Heavy HDV, select Tests 2, 4, 6 and 8 of Table 3 of this section to represent Medium HDV and Tests 3, 6, and 9 of Table 4 of this section to represent vocational Heavy HDV and add two more vehicles that you define. You may test your engine using additional vehicle configurations with different k_a and C_{rr} values to represent a wider range of in-use vehicle configurations.

(v) Use the defined values in Tables 2 through 5 of this section to set up GEM with the correct regulatory subcategory and vehicle weight reduction, if applicable, to achieve the target vehicle mass, M, for each test.

(4) Use the GEM output of instantaneous engine speed and engine flywheel torque for each of the vehicle configurations to generate a 10 Hz transient duty cycle corresponding to each vehicle configuration operating over each vehicle duty cycle.

(d) *Test the engine with GEM cycles.* Test the engine over each of the transient engine duty cycles generated in paragraph (c) of this section as follows:

(1) Determine the sequence of engine duty cycles (both required and optional) for the cycle-average-fuel-mapping sequence as follows:

(i) Sort the list of engine duty cycles into three separate groups by vehicle duty cycle; transient vehicle duty cycle, 55 mi/hr highway cruise duty cycle, and the 65 mi/hr highway cruise duty cycle.

(ii) Within each group of engine duty cycles derived from the same vehicle duty cycle, order the duty cycles as follows: Select the engine duty cycle with the highest reference cycle work; followed by the cycle with the lowest cycle work; followed by the cycle with next highest cycle work; followed by the

cycle with the next lowest cycle work; until all the cycles are selected.

(iii) For each engine duty cycle, preconditioning cycles will be needed to start the cycle-average-fuel-mapping sequence.

(A) For the first and second cycle in each sequence, the two preconditioning cycles are the first cycle in the sequence, the transient vehicle duty cycle with the highest reference cycle work. This cycle is run twice for preconditioning prior to starting the sequence for either of the first two cycles.

(B) For all other cycles, the two preconditioning cycles are the previous two cycles in the sequence.

(2) If the engine has an adjustable warm idle speed setpoint, set it to its minimum value, $f_{nidlemin}$.

(3) During each test interval, control speed and torque to meet the cycle validation criteria in 40 CFR 1065.514, except as noted in this paragraph (d)(3). Note that 40 CFR part 1065 does not allow subsampling of the 10 Hz GEM generated reference cycle. If the range of reference speeds is less than 10 percent of the mean reference speed, you only need to meet the standard error of the estimate in Table 2 of 40 CFR 1065.514 for the speed regression.

(4) Warm-up the engine as described in 40 CFR 1065.510(b)(2).

(5) Transition between duty cycles as follows:

(i) For transient duty cycles, start the next cycle within 10 seconds after the conclusion of the preceding cycle. Note that this paragraph (d)(5)(i) applies to transitioning from both the preconditioning cycles and tests for record.

(ii) For cruise cycles, linearly ramp to the next cycle over 5 seconds and stabilize for 15 seconds prior to starting the next cycle. Note that this paragraph (d)(5)(ii) applies to transitioning from both the preconditioning cycles and tests for record.

(6) Operate the engine over the engine duty cycle and record measurements using one of the methods described in paragraph (d)(6)(i) or (ii) of this section. You must also measure and report NO_X emissions over each test interval as described in paragraph (a)(2) of this section. If you use redundant systems for the determination of fuel consumption, for example combining measurements of dilute and raw emissions when generating your map, follow the requirements of 40 CFR 1065.201(d).

(i) I*ndirect measurement of fuel flow.* Record speed and torque and measure emissions and other inputs needed to run the chemical balance in 40 CFR 1065.655(c) for the test interval defined by the first engine duty cycle; determine the corresponding mean values for the test interval. For dilute sampling of emissions, in addition to the background measurement provisions described in 40 CFR 1065.140, you may do the following:

(A) Measure background as described in § 1036.535(b)(7)(i)(A) but read the background as described in paragraph (d)(9)(i) of this section.

(B) Measure background as described in § 1036.535(b)(7)(i)(B) but read the background as described in paragraph (d)(9)(i) of this section.

(ii) *Direct measurement of fuel flow.* Record speed and torque and measure fuel consumption with a fuel flow meter for the test interval defined by the first engine duty cycle; determine the corresponding mean values for the test interval.

(7) Repeat the steps in paragraph (d)(6) of this section for all the remaining engine duty cycles.

(8) Repeat the steps in paragraphs (d)(4) through (7) of this section for all the applicable groups of duty cycles (*e.g.,* transient vehicle duty cycle, 55 mi/hr highway cruise duty cycle, and the 65 mi/hr highway cruise duty cycle).

(9) The following provisions apply for interruptions in the cycle-average-fuel-mapping sequence in a way that is intended to produce results equivalent to running the sequence without interruption:

(i) You may pause the cycle-average-fuel-mapping sequence after each test interval to calibrate emission-measurement instrumentation, to read and evacuate background bag samples collected over the course of multiple test intervals, or to sample the dilution air for background emissions. This paragraph (d)(9)(i) requires you to shut-down the engine during the pause. If the pause is longer than 30 minutes, restart the engine and restart the cycle-average-fuel-mapping sequence at the step in paragraph (d)(4) of this section. Otherwise, restart the engine and restart the cycle-average-fuel-mapping sequence at the step in paragraph (d)(5) of this section.

(ii) If an infrequent regeneration event occurs, interrupt the cycle-average-fuel-mapping sequence and allow the regeneration event to finish. You may continue to operate the engine over the engine duty cycle where the event began or, using good engineering judgment, you may transition to another operating condition to reduce the regeneration event duration.

(A) Determine which cycles in the sequence to void as follows:

(1) If the regeneration event began during a test interval, the cycle associated with that test interval must be voided.

(2) If you used dilute sampling to measure emissions and you used batch sampling to measure background emissions that were sampled periodically into the bag over the course of multiple test intervals and you are unable to read the background bag (*e.g.,* sample volume too small), void all cycles associated with that background bag.

(3) If you used dilute sampling to measure emissions and you used the option to sample periodically from the dilution air and you did not meet all the requirements for this option as described in paragraph (d)(6)(i)(B) of this section, void all cycles associated with those background readings.

(4) If the regeneration event began during a non-test-interval period of the sequence and the provisions in paragraphs (d)(9)(ii)(A)(2) and (3) of this section do not apply, you do not need to void any cycles.

(B) Determine the cycle to restart the sequence. Identify the cycle associated with the last valid test interval. The next cycle in the sequence is the cycle to be used to restart the sequence.

(C) Once the regeneration event is finished, restart the sequence at the cycle determined in paragraph (d)(9)(ii)(B) of this section instead of the first cycle of the sequence. If the engine is not already warm, restart the sequence at paragraph (d)(4) of this section. Otherwise, restart at paragraph (d)(5) of this section.

(iii) If the cycle-average-fuel-mapping sequence is interrupted due to test equipment or engine malfunction, correct the malfunction and follow the steps in paragraphs (d)(9)(ii)(A) through (C) of this section to restart the sequence. Treat the detection of the malfunction as the beginning of the regeneration event.

(iv) If any test interval in the cycle-average-fuel-mapping sequence is voided, you must rerun that test interval as described in this paragraph (d)(9)(iv). You may rerun the whole sequence or any contiguous part of the sequence. If you end up with multiple valid test intervals for a given cycle, use the last valid test interval for determining the cycle-average fuel map. If the engine has been shut-down for more than 30 minutes or if it is not already warm, restart the sequence at paragraph (d)(4) of this section. Otherwise, restart at paragraph (d)(5) of this section. Repeat the steps in paragraphs (d)(6) and (7) of this section until you complete the whole sequence or part of the sequence.

The following examples illustrate possible scenarios for completing only part of the sequence:

(A) If you voided only the test interval associated with the fourth cycle in the sequence, you may restart the sequence using the second and third cycles as the preconditioning cycles and stop after completing the test interval associated with the fourth cycle.

(B) If you voided the test intervals associated with the fourth and sixth cycles, you may restart the sequence using the second and third cycles as the preconditioning cycles and stop after completing the test interval associated with the sixth cycle. If the test interval associated with the fifth cycle in this sequence was valid, it must be used for determining the cycle-average fuel map instead of the original one.

(10) For plug-in hybrid engines, precondition the battery and then complete all back-to-back tests for each vehicle configuration according to 40 CFR 1066.501 before moving to the next vehicle configuration.

(11) You may send signals to the engine controller during the test, such as current transmission gear and vehicle speed, if that allows engine operation during the test to better represent in-use operation.

(12) For hybrid powertrains with no plug-in capability, correct for the net energy change of the energy storage device as described in 40 CFR 1066.501. For plug-in hybrid engines, follow 40 CFR 1066.501 to determine End-of-Test for charge-depleting operation; to do this, you must get our advance approval for a utility factor curve. We will approve your utility factor curve if you can show that you created it from sufficient in-use data of vehicles in the same application as the vehicles in which the plug-in hybrid electric vehicle (PHEV) engine will be installed.

(13) Calculate the fuel mass flow rate, m_{fuel}, for each duty cycle using one of the following equations:

(i) Determine fuel-consumption rates using emission measurements from the raw or diluted exhaust, calculate the mass of fuel for each duty cycle, $m_{fuel[cycle]}$, as follows:

(A) For calculations that use continuous measurement of emissions and continuous CO_2 from urea, calculate $m_{fuel[cycle]}$ using the following equation:

$$m_{\mathrm{fuel[cycle]}} = \frac{M_{\mathrm{C}}}{w_{\mathrm{Cmeas}}} \cdot \left(\sum_{i=1}^{N} \left(\dot{n}_{\mathrm{exh}i} \cdot \frac{x_{\mathrm{Ccombdry}i}}{1 + x_{\mathrm{H2Oexhdry}i}} \cdot \Delta t \right) - \frac{1}{M_{\mathrm{CO2}}} \sum_{i=1}^{N} \left(\dot{m}_{\mathrm{CO2DEF}i} \cdot \Delta t \right) \right)$$

Eq. 1036.540-3

Where:

M_C = molar mass of carbon.

w_{Cmeas} = carbon mass fraction of fuel (or mixture of test fuels) as determined in 40 CFR 1065.655(d), except that you may not use the default properties in Table 1 of 40 CFR 1065.655 to determine α, β, and w_C for liquid fuels.

i = an indexing variable that represents one recorded emission value.

N = total number of measurements over the duty cycle.

$\dot{n}_{exh}$ = exhaust molar flow rate from which you measured emissions.

$x_{Ccombdry}$ = amount of carbon from fuel and any injected fluids in the exhaust per mole of dry exhaust as determined in 40 CFR 1065.655(c).

$x_{H2Oexhdry}$ = amount of H_2O in exhaust per mole of exhaust as determined in 40 CFR 1065.655(c).

$\Delta t = 1/f_{record}$

M_{CO2} = molar mass of carbon dioxide.

$\dot{m}_{CO2DEFi}$ = mass emission rate of CO_2 resulting from diesel exhaust fluid decomposition over the duty cycle as determined from § 1036.535(b)(7). If your engine does not utilize diesel exhaust fluid for emission control, or if you choose not to perform this correction, set $\dot{m}_{CO2DEFi}$ equal to 0.

Example:

M_C = 12.0107 g/mol

w_{Cmeas} = 0.867

N = 6680

$\dot{n}_{exh1}$ = 2.876 mol/s

$\dot{n}_{exh2}$ = 2.224 mol/s

$x_{Ccombdry1} = 2.61 \cdot 10^{-3}$ mol/mol

$x_{Ccombdry2} = 1.91 \cdot 10^{-3}$ mol/mol

$x_{H2Oexh1} = 3.53 \cdot 10^{-2}$ mol/mol

$x_{H2Oexh2} = 3.13 \cdot 10^{-2}$ mol/mol

f_{record} = 10 Hz

$\Delta t = 1/10 = 0.1$ s

M_{CO2} = 44.0095 g/mol

$\dot{m}_{CO2DEF1}$ = 0.0726 g/s

$\dot{m}_{CO2DEF2}$ = 0.0751 g/s

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$$m_{\text{fueltransientTest1}} = \frac{12.0107}{0.867} \cdot \left(\begin{array}{l} \left(\begin{array}{l} 2.876 \cdot \frac{2.61 \cdot 10^{-3}}{1 + 3.53 \cdot 10^{-2}} \cdot 0.1 + \\ 2.224 \cdot \frac{1.91 \cdot 10^{-3}}{1 + 3.13 \cdot 10^{-2}} \cdot 0.1 + \\ \ldots + \dot{n}_{\text{exh6680}} \cdot \frac{x_{\text{Ccombdr6680}}}{1 + x_{\text{H2Oexhdry6680}}} \cdot \Delta t_{6680} \end{array} \right) \\ - \frac{1}{44.0095} \cdot \left(0.0726 \cdot 1.0 + 0.0751 \cdot 1.0 + \ldots + \dot{m}_{\text{CO2DEF6680}} \cdot \Delta t_{6680} \right) \end{array} \right)$$

$m_{\text{fueltransientTest1}} = 1619.6$ g

(B) If you measure batch emissions and continuous CO_2 from urea, calculate $m_{\text{fuel[cycle]}}$ using the following equation:

$$m_{\text{fuel[cycle]}} = \frac{M_C}{w_{\text{Cmeas}}} \cdot \left(\frac{\overline{x}_{\text{Ccombdry}}}{1 + \overline{x}_{\text{H2Oexhdry}}} \cdot \sum_{i=1}^{N} \left(\dot{n}_{\text{exh}i} \cdot \Delta t \right) - \frac{1}{M_{\text{CO2}}} \sum_{i=1}^{N} \left(\dot{m}_{\text{CO2DEF}i} \cdot \Delta t \right) \right)$$

Eq. 1036.540-4

(C) If you measure continuous emissions and batch CO_2 from urea, calculate $m_{\text{fuel[cycle]}}$ using the following equation:

$$m_{\text{fuel[cycle]}} = \frac{M_C}{w_{\text{Cmeas}}} \cdot \left(\sum_{i=1}^{N} \left(\dot{n}_{\text{exh}i} \cdot \frac{x_{\text{Ccombdry}i}}{1 + x_{\text{H2Oexhdry}i}} \cdot \Delta t \right) - \frac{m_{\text{CO2DEF}}}{M_{\text{CO2}}} \right)$$

Eq. 1036.540-5

(D) If you measure batch emissions and batch CO_2 from urea, calculate $m_{\text{fuel[cycle]}}$ using the following equation:

$$m_{\text{fuel[cycle]}} = \frac{M_C}{w_{\text{Cmeas}}} \cdot \left(\frac{\overline{x}_{\text{Ccombdry}}}{1 + \overline{x}_{\text{H2Oexhdry}}} \cdot \sum_{i=1}^{N} \left(\dot{n}_{\text{exh}i} \cdot \Delta t \right) - \frac{m_{\text{CO2DEF}}}{M_{\text{CO2}}} \right)$$

Eq. 1036.540-6

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(ii) Manufacturers may choose to measure fuel mass flow rate. Calculate the mass of fuel for each duty cycle, $m_{\text{fuel[cycle]}}$, as follows:

$$m_{\text{fuel}} = \sum_{i=1}^{N} \dot{m}_{\text{fuel}i} \cdot \Delta t$$

Eq. 1036.540-7

Where:

i = an indexing variable that represents one recorded value.
N = total number of measurements over the duty cycle. For batch fuel mass measurements, set $N = 1$.
$\dot{m}_{\text{fuel}i}$ = the fuel mass flow rate, for each point, i, starting from $i = 1$.
$\Delta t = 1/f_{\text{record}}$

f_{record} = the data recording frequency.

Example:

$N = 6680$
$\dot{m}_{fuel1} = 1.856$ g/s
$\dot{m}_{fuel2} = 1.962$ g/s
$f_{record} = 10$ Hz
$\Delta t = 1/10 = 0.1$ s
$m_{fueltransient} = (1.856 + 1.962 + \ldots + \dot{m}_{fuel6680}) \cdot 0.1$
$m_{fueltransient} = 111.95$ g

(14) The provisions related to carbon balance error verification in § 1036.543 apply to test intervals in this section.

(15) Correct the measured or calculated fuel mass flow rate, m_{fuel}, for each test result to a mass-specific net energy content of a reference fuel as described in § 1036.535(e), replacing with $\overline{\dot{m}}_{fuel}$ in Eq. 1036.535–4.

(16) For engines designed for plug-in hybrid electric vehicles, the mass of fuel for each cycle, $m_{fuel[cycle]}$, is the utility factor-weighted fuel mass. This is done by calculating m_{fuel} for the full charge-depleting and charge-sustaining portions of the test and weighting the results, using the following equation:

$$m_{fuel[cycle],plug\text{-}in} = m_{fuel[cycle],CD} \cdot UF_{D,CD} + m_{fuel[cycle],CS} \cdot \left(1 - UF_{D,CD}\right)$$

Eq. 1036.540-8

Where:

$m_{fuel[cycle],CD}$ = total mass of fuel for all the tests in the charge-depleting portion of the test.

$UF_{D,CD}$ = utility factor fraction at distance D_{CD} as determined by interpolating the approved utility factor curve.

$m_{fuel[cycle],CS}$ = total mass of fuel for all the tests in the charge-sustaining portion of the test.

$$D_{CD} = \sum_{i=1}^{N} \left(v_i \cdot \Delta t_i\right)$$

Eq. 1036.540-9

Where:

v = vehicle velocity at each time step. For tests completed under this section, v is the vehicle velocity in the GEM duty-cycle file. For tests under 40 CFR 1037.550, v is the vehicle velocity as determined by Eq. 1037.550–1 of 40 CFR 1037.550. Note that this should include complete and incomplete charge-depleting tests.

(e) *Determine GEM inputs.* Use the results of engine testing in paragraph (d) of this section to determine the GEM inputs for the transient duty cycle and optionally for each of the highway cruise cycles corresponding to each simulated vehicle configuration as follows:

(1) Your declared fuel mass consumption, $m_{fuel[cycle]}$. Using the calculated fuel mass consumption values described in paragraph (d) of this section, declare values using the method described in § 1036.535(g).

(2) We will determine $m_{fuel[cycle]}$ values using the method described in § 1036.535(h).

(3) Engine output speed per unit vehicle speed,

$$\left[\frac{\overline{f}_{nengine}}{\overline{v}_{vehicle}}\right]_{[cycle]},$$

by taking the average engine speed measured during the engine test while the vehicle is moving and dividing it by the average vehicle speed provided by GEM. Note that the engine cycle created by GEM has a flag to indicate when the vehicle is moving.

(4) Positive work determined according to 40 CFR part 1065, $W_{[cycle]}$, by using the engine speed and engine torque measured during the engine test while the vehicle is moving. Note that the engine cycle created by GEM has a flag to indicate when the vehicle is moving.

(5) The engine idle speed and torque, by taking the average engine speed and torque measured during the engine test while the vehicle is not moving. Note that the engine cycle created by GEM has a flag to indicate when the vehicle is moving.

(6) The following table illustrates the GEM data inputs corresponding to the different vehicle configurations for a given duty cycle:

Table 6 of §1036.540—Example vehicle configuration test result output matrix for Class 8 vocational vehicles

	VEHICLE CONFIGURATION NUMBER								
	1	2	3	4	5	6	7	8	9
$m_{fuel[cycle]}$									
$\left[\frac{\overline{f}_{nengine}}{\overline{v}_{vehicle}}\right]_{[cycle]}$									
$W_{[cycle]}$									
$\bar{f}_{nidle}$[a]									
$\bar{T}_{idle}$[a]									

[a]Idle speed and torque apply only for the transient duty cycle.

■ 116. Add § 1036.543 to read as follows:

§ 1036.543 Carbon balance error verification.

A carbon balance error verification compares independent assessments of the flow of carbon through the system (engine plus aftertreatment). We will, and you may optionally, verify carbon balance error according to 40 CFR 1065.543. This section applies to all test intervals in §§ 1036.535(b), (c), and (d) and 1036.540 and 40 CFR 1037.550.

■ 117. Amend § 1036.620 by revising paragraphs (a) and (b)(1)(iii) to read as follows:

§ 1036.620 Alternate CO_2 standards based on model year 2011 compression-ignition engines.

* * * * *

(a) The standards of this section are determined from the measured emission rate of the test engine of the applicable baseline 2011 engine family or families as described in paragraphs (b) and (c) of this section. Calculate the CO_2 emission rate of the baseline test engine using the same equations used for showing compliance with the otherwise applicable standard. The alternate CO_2 standard for light and medium heavy-duty vocational-certified engines (certified for CO_2 using the transient cycle) is equal to the baseline emission rate multiplied by 0.975. The alternate CO_2 standard for tractor-certified engines (certified for CO_2 using the SET duty cycle) and all other heavy heavy-duty engines is equal to the baseline emission rate multiplied by 0.970. The in-use FEL for these engines is equal to the alternate standard multiplied by 1.03.

(b) * * *

(1) * * *

(iii) Calculate separate adjustments for emissions over the SET duty cycle and the transient cycle.

* * * * *

■ 118. Amend § 1036.701 by revising paragraphs (i) and (j) to read as follows:

§ 1036.701 General provisions.

* * * * *

(i) Unless the regulations in this part explicitly allow it, you may not calculate Phase 1 credits more than once for any emission reduction. For example, if you generate Phase 1 CO_2 emission credits for a hybrid engine under this part for a given vehicle, no one may generate CO_2 emission credits for that same hybrid engine and the associated vehicle under 40 CFR part 1037. However, Phase 1 credits could be generated for identical vehicles using engines that did not generate credits under this part.

(j) Credits you generate with compression-ignition engines in 2020 and earlier model years may be used in model year 2021 and later as follows:

(1) For credit-generating engines certified to the tractor engine standards in § 1036.108, you may use credits calculated relative to the tractor engine standards.

(2) For credit-generating engines certified to the vocational engine standards in § 1036.108, you may optionally carry over adjusted vocational credits from an averaging set, and you may use credits calculated relative to the emission levels in the following table:

TABLE 1 OF § 1036.701—EMISSION LEVELS FOR CREDIT CALCULATION

Medium heavy-duty engines	Heavy heavy-duty engines
558 g/hp·hr	525 g/hp·hr.

* * * * *

■ 119. Amend § 1036.705 by revising paragraphs (b)(2) and (5) to read as follows:

§ 1036.705 Generating and calculating emission credits.

* * * * *

(b) * * *

(2) For tractor engines:

$$\text{Emission credits (Mg)} = (\text{Std} - \text{FCL}) \cdot (\text{CF}) \cdot (\text{Volume}) \cdot (\text{UL}) \cdot (10^{-6})$$

Where:

Std = the emission standard, in g/hp-hr, that applies under subpart B of this part for engines not participating in the ABT program of this subpart (the ''otherwise applicable standard'').

FCL = the Family Certification Level for the engine family, in g/hp-hr, measured over the SET duty cycle rounded to the same number of decimal places as the emission standard.

CF = a transient cycle conversion factor (hp-hr/mile), calculated by dividing the total (integrated) horsepower-hour over the duty cycle (average of tractor-engine configurations weighted by their production volumes) by 6.3 miles for engines subject to spark-ignition standards and 6.5 miles for engines subject to compression-ignition standards. This represents the average work performed by tractor engines in the family over the mileage represented by operation over the duty cycle. Note that this calculation requires you to use the transient cycle conversion factor even for engines certified to standards based on the SET duty cycle.

Volume = the number of tractor engines eligible to participate in the averaging, banking, and trading program within the given engine family during the model year, as described in paragraph (c) of this section.

UL = the useful life for the given engine family, in miles.

* * * * *

(5) You may generate CO_2 emission credits from a model year 2021 or later medium heavy-duty engine family subject to spark-ignition standards for exchanging with other engine families only if the engines in the family are gasoline-fueled. You may generate CO_2 credits from non-gasoline engine families only for the purpose of offsetting CH_4 and/or N_2O emissions within the same engine family as described in paragraph (d) of this section.

* * * * *

■ 120. Amend § 1036.801 by:

■ a. Revising the definitions for ''Auxiliary emission control device'', ''Heavy-duty vehicle'', and ''Hybrid''.

■ b. Adding definitions for ''Hybrid engine'', ''Hybrid powertrain'', and ''Mild hybrid'' in alphabetical order.

■ c. Revising the definition for ''Steady-state''.

The revisions and additions read as follows:

§ 1036.801 Definitions.

* * * * *

Auxiliary emission control device means any element of design that senses temperature, motive speed, engine speed (r/min), transmission gear, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission control system.

* * * * *

Heavy-duty vehicle means any motor vehicle above 8,500 pounds GVWR. An incomplete vehicle is also a heavy-duty vehicle if it has a curb weight above 6,000 pounds or a basic vehicle frontal area greater than 45 square feet. Curb weight and basic vehicle frontal area have the meaning given in 40 CFR 86.1803–01.

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

Hybrid engine means a hybrid system with features for storing and recovering energy that are integral to the engine or are otherwise upstream of the vehicle's

transmission other than a conventional battery system or conventional flywheel. Supplemental electrical batteries and hydraulic accumulators are examples of hybrid energy storage systems. Examples of hybrids that could be considered hybrid engines are P0, P1, and P2 hybrids where hybrid features are connected to the front end of the engine, at the crankshaft, or connected between the clutch and the transmission where the clutch upstream of the hybrid feature is in addition to the transmission clutch(s), respectively. Note other examples of systems that qualify as hybrid engines are systems that recover kinetic energy and use it to power an electric heater in the aftertreatment.

Hybrid powertrain means a powertrain that includes energy storage features other than a conventional battery system or conventional flywheel. Supplemental electrical batteries and hydraulic accumulators are examples of hybrid energy storage systems. Note other examples of systems that qualify as hybrid powertrains are systems that recover kinetic energy and use it to power an electric heater in the aftertreatment.

* * * * *

Mild hybrid means a hybrid engine or powertrain with regenerative braking capability where the system recovers less than 20 percent of the total braking energy over the transient cycle defined in appendix I of 40 CFR part 1037.

* * * * *

Steady-state has the meaning given in 40 CFR 1065.1001. This includes fuel mapping and idle testing where engine speed and load are held at a finite set of nominally constant values.

* * * * *

■ 121. Amend § 1036.805 by revising paragraphs (b) through (f) and adding paragraph (g) to read as follows:

§ 1036.805 Symbols, abbreviations, and acronyms.

* * * * *

(b) Symbols for quantities. This part uses the following symbols and units of measure for various quantities:

TABLE 2 TO § 1036.805—SYMBOLS FOR QUANTITIES

Symbol	Quantity	Unit	Unit symbol	Unit in terms of SI base units
α	atomic hydrogen-to-carbon ratio	mole per mole	mol/mol	1.
A	Area	square meter	m^2	m^2.
β	atomic oxygen-to-carbon ratio	mole per mole	mol/mol	1.
C_dA	drag area	meter squared	m^2	m^2.
C_{rr}	coefficient of rolling resistance	kilogram per metric ton	kg/tonne	10^{-3}.
D	distance	miles or meters	mi or m	m.
ε	efficiency.			
$\in$	Difference or error quantity.			
e	mass weighted emission result	grams/ton-mile	g/ton-mi	g/kg-km.
Eff	efficiency.			
E_m	mass-specific net energy content	megajoules/kilogram	MJ/kg	$m^2 \cdot s^{-2}$.
f_n	angular speed (shaft)	revolutions per minute	r/min	$\pi \cdot 30 \cdot s^{-1}$.
g	gravitational acceleration	meters per second squared	m/s^2	$m \cdot s^{-2}$.
i	indexing variable.			
k_a	drive axle ratio			1.
$k_{topgear}$	highest available transmission gear.			
m	Mass	pound mass or kilogram	lbm or kg	kg.
M	molar mass	gram per mole	g/mol	$10^{-3} \cdot kg \cdot mol^{-1}$.
M	vehicle mass	kilogram	kg	kg.
$M_{rotating}$	inertial mass of rotating components	kilogram	kg	kg.
N	total number in a series.			
P	Power	kilowatt	kW	$10^3 \cdot m^2 \cdot kg \cdot s^{-3}$.
ρ	mass density	kilogram per cubic meter	kg/m^3	$m^{-3} \cdot kg$.
r	tire radius	meter	m	m.
SEE	standard error of the estimate.			
σ	standard deviation.			
T	torque (moment of force)	newton meter	N·m	$m^2 \cdot kg \cdot s^{-2}$.
t	Time	second	s	s.
Δt	time interval, period, 1/frequency	second	s	s.
UF	utility factor.			
v	Speed	miles per hour or meters per second	mi/hr or m/s	$m \cdot s^{-1}$.
W	Work	kilowatt-hour	kW·hr	$3.6 \cdot m^2 \cdot kg \cdot s^{-1}$.
w_C	carbon mass fraction	gram/gram	g/g	1.
w_{CH4N2O}	urea mass fraction	gram/gram	g/g	1.
x	amount of substance mole fraction	mole per mole	mol/mol	1.
x_b	brake energy fraction.			
x_{bl}	brake energy limit.			

(c) *Superscripts.* This part uses the following superscripts for modifying quantity symbols:

TABLE 3 TO § 1036.805—SUPERSCRIPTS

Superscript	Meaning
overbar (such as $\bar{y}$)	arithmetic mean.
overdot (such as $\dot{y}$)	quantity per unit time.

(d) *Subscripts.* This part uses the following subscripts for modifying quantity symbols:

TABLE 4 TO § 1036.805—SUBSCRIPTS

Subscript	Meaning
65	65 miles per hour.
A	A speed.
A	absolute (*e.g.*, absolute difference or error).
Acc	accessory.
App	approved.
Axle	axle.
B	B speed.
C	C speed.
C	carbon mass.
Ccombdry	carbon from fuel per mole of dry exhaust.
CD	charge-depleting.
CO2DEF	CO_2 resulting from diesel exhaust fluid decomposition.
comb	combustion.
comp	composite.
Cor	corrected.
CS	charge-sustaining.
Cycle	test cycle.
DEF	diesel exhaust fluid.
engine	engine.
Exh	raw exhaust.
Front	frontal.
Fuel	fuel.
H2Oexhaustdry	H_2O in exhaust per mole of exhaust.
Hi	high.
I	an individual of a series.
Idle	idle.
M	mass.
Max	maximum.
mapped	mapped.
Meas	measured quantity.
Neg	negative.
Pos	positive.
R	relative (*e.g.*, relative difference or error).
Rate	rate (divided by time).
Rated	rated.
record	record.
Ref	reference quantity.
speed	speed.
Stall	stall.
Test	test.
Tire	tire.
transient	transient.
M	vector.
vehicle	vehicle.

(e) *Other acronyms and abbreviations.* This part uses the following additional abbreviations and acronyms:

TABLE 5 TO § 1036.805—OTHER ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
ABT	averaging, banking, and trading.
AECD	auxiliary emission control device.
ASTM	American Society for Testing and Materials.
BTU	British thermal units.
CD	charge-depleting.
CFR	Code of Federal Regulations.
CI	Compression-ignition.
COV	coefficient of variation.
CS	charge-sustaining.
DEF	diesel exhaust fluid.
DF	deterioration factor.
DOT	Department of Transportation.
E85	gasoline blend including nominally 85 percent denatured ethanol.
ECU	Electronic Control Unit.
EPA	Environmental Protection Agency.
FCL	Family Certification Level.

TABLE 5 TO § 1036.805—OTHER ACRONYMS AND ABBREVIATIONS—Continued

Acronym	Meaning
FEL	Family Emission Limit.
GEM	Greenhouse gas Emissions Model.
g/hp-hr	grams per brake horsepower-hour.
GVWR	gross vehicle weight rating.
HDV	heavy-duty vehicle.
LPG	liquefied petroleum gas.
NARA	National Archives and Records Administration.
NHTSA	National Highway Traffic Safety Administration.
NTE	not-to-exceed.
RESS	rechargeable energy storage system.
RMC	ramped-modal cycle.
SCR	selective catalytic reduction.
SEE	standard error of the estimate.
SET	Supplemental Emission Test.
SI	spark-ignition.
U.S.	United States.
U.S.C.	United States Code.

(f) *Constants.* This part uses the following constants:

TABLE 6 TO § 1036.805—CONSTANTS

Symbol	Quantity	Value
g	gravitational constant.	9.80665 $m \cdot s^{-2}$

(g) *Prefixes.* This part uses the following prefixes to define a quantity:

TABLE 7 TO § 1036.805—PREFIXES

Symbol	Quantity	Value
μ	micro	10^{-6}
m	milli	10^{-3}
c	centi	10^{-2}
k	kilo	10^{3}
M	mega	10^{6}

■ 122. Revise § 1036.810 to read as follows:

§ 1036.810 Incorporation by reference.

Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Environmental Protection Agency must publish a document in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at U.S. EPA, Air and Radiation Docket and Information Center, WJC West Building, Room 3334, 1301 Constitution Ave. NW, Washington, DC 20460, *www.epa.gov/dockets*, (202) 202–1744, and is available from the sources listed in this section. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to *www.archives.gov/federal-register/cfr/ibr-locations.html.*

(a) ASTM International, 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428–2959, (877) 909–2786, *www.astm.org/.*

(1) ASTM D3588–98 (Reapproved 2017)e1, Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels, approved April 1, 2017, (''ASTM D3588''), IBR approved for § 1036.530(b).

(2) ASTM D4809–13, Standard Test Method for Heat of Combustion of Liquid Hydrocarbon Fuels by Bomb Calorimeter (Precision Method), approved May 1, 2013, (''ASTM D4809''), IBR approved for § 1036.530(b).

(b) National Institute of Standards and Technology, 100 Bureau Drive, Stop 1070, Gaithersburg, MD 20899–1070, (301) 975–6478, or *www.nist.gov.*

(1) NIST Special Publication 811, Guide for the Use of the International System of Units (SI), 2008 Edition, March 2008, IBR approved for § 1036.805.

(2) [Reserved]

■ 123. Amend § 1036.825 by revising paragraph (a) to read as follows:

§ 1036.825 Reporting and recordkeeping requirements.

(a) This part includes various requirements to submit and record data or other information. Unless we specify otherwise, store required records in any format and on any media and keep them readily available for eight years after you send an associated application for certification, or eight years after you generate the data if they do not support an application for certification. We may review these records at any time. You must promptly give us organized, written records in English if we ask for them. We may require you to submit written records in an electronic format.

* * * * *

Appendix I to Part 1036 [Redesignated as Appendix C to Part 1036]

■ 124. Redesignate appendix I to part 1036 as appendix C to part 1036.

■ 125. Add appendix A to part 1036 to read as follows:

Appendix A to Part 1036—Summary of Previous Emission Standards

The following standards, which EPA originally adopted under 40 CFR part 85 or 86, apply to compression-ignition engines produced before model year 2007 and to spark-ignition engines produced before model year 2008:

(a) Smoke. Smoke standards applied for compression-ignition engines based on opacity measurement using the test procedures in 40 CFR part 86, subpart I, as follows:

(1) Engines were subject to the following smoke standards for model years 1970 through 1973:

(i) 40 percent during the engine acceleration mode.

(ii) 20 percent during the engine lugging mode.

(2) The smoke standards in 40 CFR 86.11 started to apply in model year 1974.

(b) Idle CO. A standard of 0.5 percent of exhaust gas flow at curb idle applied through model year 2016 to the following engines:

(1) Spark-ignition engines with aftertreatment starting in model year 1987. This standard applied only for gasoline-fueled engines through model year 1997. Starting in model year 1998, the same standard applied for engines fueled by methanol, LPG, and natural gas. The idle CO standard no longer applied for engines certified to meet onboard diagnostic requirements starting in model year 2005.

(2) Methanol-fueled compression-ignition engines starting in model year 1990. This

standard also applied for natural gas and LPG engines starting in model year 1997. The idle CO standard no longer applied for engines certified to meet onboard diagnostic requirements starting in model year 2007.

(c) *Crankcase emissions.* The requirement to design engines to prevent crankcase emissions applied starting with the following engines:

(1) Spark-ignition engines starting in model year 1968. This standard applied only for gasoline-fueled engines through model year 1989, and applied for spark-ignition engines using other fuels starting in model year 1990.

(2) Naturally aspirated diesel-fueled engines starting in model year 1985.

(3) Methanol-fueled compression-ignition engines starting in model year 1990.

(4) Naturally aspirated gaseous-fueled engines starting in model year 1997, and all other gaseous-fueled engines starting in 1998.

(d) Early steady-state standards. The following criteria standards applied to heavy-duty engines based on steady-state measurement procedures:

TABLE 1 TO APPENDIX A—EARLY STEADY-STATE EMISSION STANDARDS FOR HEAVY-DUTY ENGINES

Model year	Fuel	Pollutant		
		HC	NO_X + HC	CO
1970–1973	gasoline	275 ppm		1.5 volume percent.
1974–1978	gasoline and diesel		16 g/hp·hr	40 g/hp·hr.
1979–1984 [a]	gasoline and diesel		5 g/hp·hr for diesel, 5.0 g/hp·hr for gasoline.	25 g/hp·hr.

[a] An optional NO_X + HC standard of 10 g/hp·hr applied in 1979 through 1984 in conjunction with a separate HC standard of 1.5 g/hp·hr.

(e) *Transient emission standards for spark-ignition engines.* The following criteria standards applied for spark-ignition engines based on transient measurement using the test procedures in 40 CFR part 86, subpart N. Starting in model year 1991, manufacturers could generate or use emission credits for NO_X and NO_X + NMHC standards. Table 2 to this appendix follows:

TABLE 2 TO APPENDIX A—TRANSIENT EMISSION STANDARDS FOR SPARK-IGNITION ENGINES [a] [b]

Model year	Pollutant (g/hp·hr)			
	HC	CO	NO_X	NO_X + NMHC
1985–1987	1.1	14.4	10.6	
1988–1990	1.1	14.4	6.0	
1991–1997	1.1	14.4	5.0	
1998–2004 [c]	1.1	14.4	4.0	
2005–2007		14.4		[d] 1.0

[a] Standards applied only for gasoline-fueled engines through model year 1989. Standards started to apply for methanol in model year 1990, and for LPG and natural gas in model year 1998.

[b] Engines intended for installation only in heavy-duty vehicles above 14,000 pounds GVWR were subject to an HC standard of 1.9 g/hp·hr for model years 1987 through 2004, and a CO standard of 37.1 g/hp·hr for model years 1987 through 2007. In addition, for model years 1987 through 2007, up to 5 percent of a manufacturer's sales of engines intended for installation in heavy-duty vehicles at or below 14,000 pounds GVWR could be certified to the alternative HC and CO standards.

[c] For natural gas engines in model years 1998 through 2004, the NO_X standard was 5.0 g/hp·hr; the HC standards were 1.7 g/hp·hr for engines intended for installation only in vehicles above 14,000 pounds GVWR, and 0.9 g/hp·hr for other engines.

[d] Manufacturers could delay the 1.0 g/hp·hr NO_X + NMHC standard until model year 2008 by meeting an alternate NO_X + NMHC standard of 1.5 g/hp·hr applied for model years 2004 through 2007.

(f) Transient emission standards for compression-ignition engines. The following criteria standards applied for compression-ignition engines based on transient measurement using the test procedures in 40 CFR part 86, subpart N. Starting in model year 1991, manufacturers could generate or use emission credits for NO_X, NO_X + NMHC, and PM standards. Table 3 to this appendix follows:

TABLE 3 TO APPENDIX A—TRANSIENT EMISSION STANDARDS FOR COMPRESSION-IGNITION ENGINES [a]

Model year	Pollutant (g/hp·hr)				
	HC	CO	NO_X	NO_X + NMHC	PM
1985–1987	1.3	15.5	10.7		
1988–1989	1.3	15.5	10.7		0.60.
1990	1.3	15.5	6.0		0.60.
1991–1992	1.3	15.5	5.0		0.25.
1993	1.3	15.5	5.0		0.25 truck, 0.10 bus.
1994–1995	1.3	15.5	5.0		0.10 truck, 0.07 urban bus.
1996–1997	1.3	15.5	5.0		0.10 truck, 0.05 urban bus.[b]
1998–2003	1.3	15.5	4.0		0.10 truck, 0.05 urban bus.[b]
2004–2006		15.5		[c] 2.4	0.10 truck, 0.05 urban bus.[b]

[a] Standards applied only for diesel-fueled engines through model year 1989. Standards started to apply for methanol in model year 1990, and for LPG and natural gas in model year 1997. An alternate HC standard of 1.2 g/hp·hr applied for natural gas engines for model years 1997 through 2003.

[b] The in-use PM standard for urban bus engines in model years 1996 through 2006 was 0.07 g/hp·hr.

[c] An optional NO_X + NMHC standard of 2.5 g/hp·hr applied in 2004 through 2006 in conjunction with a separate NMHC standard of 0.5 g/hp·hr.

■ 126. Add appendix B to part 1036 to read as follows:

Appendix B to Part 1036—Transient Duty Cycles

(a) This appendix specifies transient duty cycles for the engine and powertrain testing described in § 1036.510, as follows:

(1) The transient duty cycle for testing engines involves a schedule of normalized engine speed and torque values.

(2) The transient duty cycles for powertrain testing involves a schedule of vehicle speeds and road grade. Determine road grade at each point based on the peak rated power of the powertrain system, P_{rated}, determined in § 1036.527 and road grade coefficients using the following equation:

$$Road\ grade = a \cdot P_{rated}^2 + b \cdot P_{rated} + c$$

(b) The following transient duty cycle applies for spark-ignition engines and powertrains:

BILLING CODE 6560–50–P

Record (seconds)	Engine testing		Powertrain testing			
	Normalized revolutions per minute (percent)	Normalized torque (percent)	Vehicle speed (mi/hr)	Road grade coefficients		
				a	*b*	*c*
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	0	0	0	1.837E-05	-1.876E-02	2.369E+00
4	0	0	0	2.756E-05	-2.814E-02	3.553E+00
5	0	0	0	2.756E-05	-2.814E-02	3.553E+00
6	0	0	0	2.756E-05	-2.814E-02	3.553E+00
7	0	0	0	2.756E-05	-2.814E-02	3.553E+00
8	0	0	0	2.756E-05	-2.814E-02	3.553E+00
9	0	0	0	2.756E-05	-2.814E-02	3.553E+00
10	0	0	0	2.756E-05	-2.814E-02	3.553E+00
11	0	0	0	2.756E-05	-2.814E-02	3.553E+00
12	0	0	0	2.756E-05	-2.814E-02	3.553E+00
13	0	0	0	2.756E-05	-2.814E-02	3.553E+00
14	0	0	0	2.756E-05	-2.814E-02	3.553E+00
15	0	0	0	2.756E-05	-2.814E-02	3.553E+00
16	0	0	0	2.756E-05	-2.814E-02	3.553E+00
17	0	0	0	2.756E-05	-2.814E-02	3.553E+00
18	0	0	0	2.756E-05	-2.814E-02	3.553E+00
19	0	0	0	2.756E-05	-2.814E-02	3.553E+00
20	0	0	0	2.756E-05	-2.814E-02	3.553E+00
21	0	0	0	2.756E-05	-2.814E-02	3.553E+00
22	0	0	0	2.756E-05	-2.814E-02	3.553E+00
23	0	0	0	2.756E-05	-2.814E-02	3.553E+00
24	0	0	0	2.756E-05	-2.814E-02	3.553E+00
25	7.00	44.40	0	2.756E-05	-2.814E-02	3.553E+00
26	16.00	85.40	3.04	2.756E-05	-2.814E-02	3.553E+00
27	27.00	97.80	5.59	2.756E-05	-2.814E-02	3.553E+00
28	38.00	100.00	8.37	2.756E-05	-2.814E-02	3.553E+00
29	45.00	100.00	11.06	2.756E-05	-2.814E-02	3.553E+00
30	51.00	100.00	13.63	2.756E-05	-2.814E-02	3.553E+00
31	54.00	97.50	15.87	2.756E-05	-2.814E-02	3.553E+00
32	53.00	90.00	18.09	2.756E-05	-2.814E-02	3.553E+00
33	49.00	75.20	20.66	2.756E-05	-2.814E-02	3.553E+00

34	45.00	50.00	22.26	9.186E-06	-9.380E-03	1.184E+00
35	40.00	10.00	22.08	-9.186E-06	9.380E-03	-1.184E+00
36	34.00	2.30	20.58	-2.756E-05	2.814E-02	-3.553E+00
37	27.00	0	18.65	-2.756E-05	2.814E-02	-3.553E+00
38	21.00	2.30	16.50	-2.756E-05	2.814E-02	-3.553E+00
39	16.00	12.00	14.19	-2.756E-05	2.814E-02	-3.553E+00
40	12.00	35.30	11.65	-2.756E-05	2.814E-02	-3.553E+00
41	8.50	4.90	9.16	-2.756E-05	2.814E-02	-3.553E+00
42	5.00	(a)	8.01	-2.756E-05	2.814E-02	-3.553E+00
43	3.00	(a)	6.86	-2.756E-05	2.814E-02	-3.553E+00
44	0	0	3.19	-2.756E-05	2.814E-02	-3.553E+00
45	0	0	0	-2.756E-05	2.814E-02	-3.553E+00
46	0	0	0	-2.756E-05	2.814E-02	-3.553E+00
47	0	0	0	-1.587E-05	1.622E-02	-2.202E+00
48	0	0	0	-4.187E-06	4.310E-03	-8.511E-01
49	0	0	0	7.498E-06	-7.604E-03	5.001E-01
50	0	0	0	7.498E-06	-7.604E-03	5.001E-01
51	3.00	10.00	1.05	7.498E-06	-7.604E-03	5.001E-01
52	11.00	40.20	2.13	7.498E-06	-7.604E-03	5.001E-01
53	20.00	53.00	3.26	7.498E-06	-7.604E-03	5.001E-01
54	27.50	64.80	4.31	7.498E-06	-7.604E-03	5.001E-01
55	32.00	78.00	5.35	7.498E-06	-7.604E-03	5.001E-01
56	32.00	78.00	6.38	7.498E-06	-7.604E-03	5.001E-01
57	27.50	56.00	7.42	7.498E-06	-7.604E-03	5.001E-01
58	26.00	24.40	8.45	7.498E-06	-7.604E-03	5.001E-01
59	24.00	(a)	9.43	7.498E-06	-7.604E-03	5.001E-01
60	23.00	(a)	10.18	7.498E-06	-7.604E-03	5.001E-01
61	24.00	(a)	10.71	7.498E-06	-7.604E-03	5.001E-01
62	27.00	(a)	11.10	7.498E-06	-7.604E-03	5.001E-01
63	34.00	(a)	11.62	7.498E-06	-7.604E-03	5.001E-01
64	44.00	28.00	12.44	7.498E-06	-7.604E-03	5.001E-01
65	57.00	74.40	13.55	7.498E-06	-7.604E-03	5.001E-01
66	60.00	74.40	14.69	7.498E-06	-7.604E-03	5.001E-01
67	53.00	33.60	15.42	7.498E-06	-7.604E-03	5.001E-01
68	48.00	(a)	16.06	7.498E-06	-7.604E-03	5.001E-01
69	44.00	(a)	16.64	7.498E-06	-7.604E-03	5.001E-01
70	40.00	(a)	17.36	8.991E-06	-9.177E-03	2.234E+00
71	40.00	7.00	17.86	1.048E-05	-1.075E-02	3.968E+00
72	44.00	22.70	18.05	1.198E-05	-1.232E-02	5.701E+00
73	46.00	30.00	18.09	1.198E-05	-1.232E-02	5.701E+00
74	46.00	32.00	18.19	1.198E-05	-1.232E-02	5.701E+00
75	44.00	25.00	18.55	1.198E-05	-1.232E-02	5.701E+00
76	40.00	18.00	19.04	1.198E-05	-1.232E-02	5.701E+00
77	37.00	14.00	19.58	1.198E-05	-1.232E-02	5.701E+00
78	36.00	10.00	19.90	1.198E-05	-1.232E-02	5.701E+00
79	34.00	0	19.99	1.198E-05	-1.232E-02	5.701E+00
80	34.00	(a)	19.85	1.198E-05	-1.232E-02	5.701E+00

81	32.00	(a)	19.73	1.198E-05	-1.232E-02	5.701E+00
82	31.00	(a)	19.70	1.198E-05	-1.232E-02	5.701E+00
83	36.00	39.90	19.84	1.198E-05	-1.232E-02	5.701E+00
84	42.00	84.70	20.10	1.198E-05	-1.232E-02	5.701E+00
85	48.00	90.00	20.44	1.198E-05	-1.232E-02	5.701E+00
86	50.00	90.00	20.98	1.198E-05	-1.232E-02	5.701E+00
87	50.00	90.00	21.52	1.198E-05	-1.232E-02	5.701E+00
88	47.00	85.00	22.06	1.198E-05	-1.232E-02	5.701E+00
89	43.00	75.00	22.24	1.198E-05	-1.232E-02	5.701E+00
90	38.00	60.00	22.35	1.198E-05	-1.232E-02	5.701E+00
91	36.00	36.00	22.37	3.992E-06	-4.107E-03	1.900E+00
92	36.00	7.50	22.35	-3.992E-06	4.107E-03	-1.900E+00
93	36.30	(a)	22.27	-1.198E-05	1.232E-02	-5.701E+00
94	45.00	64.50	22.05	-1.198E-05	1.232E-02	-5.701E+00
95	53.00	67.00	21.79	-1.198E-05	1.232E-02	-5.701E+00
96	58.00	64.50	21.50	-1.198E-05	1.232E-02	-5.701E+00
97	62.00	60.30	21.20	-1.198E-05	1.232E-02	-5.701E+00
98	63.00	55.50	20.90	-1.198E-05	1.232E-02	-5.701E+00
99	62.00	52.30	20.59	-1.198E-05	1.232E-02	-5.701E+00
100	61.00	47.00	20.42	-1.198E-05	1.232E-02	-5.701E+00
101	55.00	44.00	20.25	-1.198E-05	1.232E-02	-5.701E+00
102	50.00	39.00	20.07	-1.198E-05	1.232E-02	-5.701E+00
103	45.00	36.00	19.75	-1.198E-05	1.232E-02	-5.701E+00
104	40.00	34.00	19.38	-1.198E-05	1.232E-02	-5.701E+00
105	36.00	30.00	19.00	-1.198E-05	1.232E-02	-5.701E+00
106	34.00	25.80	18.61	-1.198E-05	1.232E-02	-5.701E+00
107	32.00	20.00	18.20	-1.198E-05	1.232E-02	-5.701E+00
108	30.00	14.60	17.75	-1.198E-05	1.232E-02	-5.701E+00
109	26.00	10.00	17.27	-1.198E-05	1.232E-02	-5.701E+00
110	23.00	0	16.75	-1.198E-05	1.232E-02	-5.701E+00
111	18.00	(a)	16.20	-1.198E-05	1.232E-02	-5.701E+00
112	16.00	(a)	15.66	-1.198E-05	1.232E-02	-5.701E+00
113	18.00	(a)	15.15	-1.198E-05	1.232E-02	-5.701E+00
114	20.00	27.60	14.65	-1.198E-05	1.232E-02	-5.701E+00
115	17.00	4.00	14.16	-1.198E-05	1.232E-02	-5.701E+00
116	14.00	(a)	13.67	-1.198E-05	1.232E-02	-5.701E+00
117	12.00	(a)	12.59	-1.198E-05	1.232E-02	-5.701E+00
118	9.00	(a)	10.93	-1.198E-05	1.232E-02	-5.701E+00
119	7.00	(a)	9.28	-1.198E-05	1.232E-02	-5.701E+00
120	7.00	(a)	7.62	-1.198E-05	1.232E-02	-5.701E+00
121	5.00	(a)	5.96	-1.198E-05	1.232E-02	-5.701E+00
122	4.00	(a)	4.30	-1.198E-05	1.232E-02	-5.701E+00
123	3.00	(a)	2.64	-1.198E-05	1.232E-02	-5.701E+00
124	2.00	(a)	0.99	-1.198E-05	1.232E-02	-5.701E+00
125	0	0	0.19	-1.198E-05	1.232E-02	-5.701E+00
126	0	0	0	-1.198E-05	1.232E-02	-5.701E+00
127	0	0	0	-1.198E-05	1.232E-02	-5.701E+00

128	0	0	0	5.354E-07	1.492E-03	-6.315E+00
129	0	0	0	1.305E-05	-9.337E-03	-6.929E+00
130	5.00	8.00	3.25	2.556E-05	-2.017E-02	-7.543E+00
131	8.00	16.30	5.47	2.556E-05	-2.017E-02	-7.543E+00
132	10.00	27.50	6.71	2.556E-05	-2.017E-02	-7.543E+00
133	8.00	27.50	6.71	2.556E-05	-2.017E-02	-7.543E+00
134	5.00	9.00	6.71	2.556E-05	-2.017E-02	-7.543E+00
135	2.00	1.80	6.55	8.520E-06	-6.722E-03	-2.514E+00
136	0	0	6.01	-8.520E-06	6.722E-03	2.514E+00
137	0	0	5.15	-2.556E-05	2.017E-02	7.543E+00
138	0	0	3.90	-2.556E-05	2.017E-02	7.543E+00
139	0	0	2.19	-2.556E-05	2.017E-02	7.543E+00
140	0	0	0	-2.556E-05	2.017E-02	7.543E+00
141	0	0	0	-9.124E-06	5.441E-03	6.132E+00
142	0	0	0	7.313E-06	-9.284E-03	4.722E+00
143	0	0	0	2.375E-05	-2.401E-02	3.312E+00
144	0	0	0	2.375E-05	-2.401E-02	3.312E+00
145	0	0	0	2.375E-05	-2.401E-02	3.312E+00
146	0	0	0	2.375E-05	-2.401E-02	3.312E+00
147	0	0	0	2.375E-05	-2.401E-02	3.312E+00
148	0	0	0	2.375E-05	-2.401E-02	3.312E+00
149	2.00	4.80	0	2.375E-05	-2.401E-02	3.312E+00
150	1.00	4.50	0	2.375E-05	-2.401E-02	3.312E+00
151	0	0	0	2.375E-05	-2.401E-02	3.312E+00
152	0	0	0	2.375E-05	-2.401E-02	3.312E+00
153	0	0	0	2.375E-05	-2.401E-02	3.312E+00
154	0	0	0	2.375E-05	-2.401E-02	3.312E+00
155	0	0	0	2.375E-05	-2.401E-02	3.312E+00
156	0	0	0	2.375E-05	-2.401E-02	3.312E+00
157	0	0	0	2.375E-05	-2.401E-02	3.312E+00
158	0	0	0	2.375E-05	-2.401E-02	3.312E+00
159	0	0	0	2.375E-05	-2.401E-02	3.312E+00
160	0	0	0	2.375E-05	-2.401E-02	3.312E+00
161	0	0	0	2.375E-05	-2.401E-02	3.312E+00
162	0	0	0	2.375E-05	-2.401E-02	3.312E+00
163	0	0	0	2.375E-05	-2.401E-02	3.312E+00
164	0	0	0	2.375E-05	-2.401E-02	3.312E+00
165	0	0	0	2.375E-05	-2.401E-02	3.312E+00
166	0	0	0	2.375E-05	-2.401E-02	3.312E+00
167	8.00	27.00	1.95	2.375E-05	-2.401E-02	3.312E+00
168	18.00	65.00	3.70	2.375E-05	-2.401E-02	3.312E+00
169	23.00	82.50	5.53	2.375E-05	-2.401E-02	3.312E+00
170	23.00	88.00	7.22	2.375E-05	-2.401E-02	3.312E+00
171	21.00	88.00	8.64	2.375E-05	-2.401E-02	3.312E+00
172	18.00	81.30	10.33	2.375E-05	-2.401E-02	3.312E+00
173	17.00	32.00	11.18	7.917E-06	-8.003E-03	1.104E+00
174	15.00	[a]	10.57	-7.917E-06	8.003E-03	-1.104E+00

175	13.00	(a)	9.33	-2.375E-05	2.401E-02	-3.312E+00
176	11.00	(a)	7.87	-2.375E-05	2.401E-02	-3.312E+00
177	8.00	(a)	6.27	-2.375E-05	2.401E-02	-3.312E+00
178	6.00	(a)	4.58	-2.375E-05	2.401E-02	-3.312E+00
179	4.00	(a)	3.81	-2.375E-05	2.401E-02	-3.312E+00
180	2.00	(a)	2.35	-2.375E-05	2.401E-02	-3.312E+00
181	0	0	0	-2.375E-05	2.401E-02	-3.312E+00
182	0	0	0	-2.375E-05	2.401E-02	-3.312E+00
183	0	0	0	-1.078E-05	1.103E-02	-1.145E+00
184	0	0	0	2.190E-06	-1.954E-03	1.022E+00
185	0	0	0	1.516E-05	-1.494E-02	3.189E+00
186	0	0	0	1.516E-05	-1.494E-02	3.189E+00
187	0	0	0	1.516E-05	-1.494E-02	3.189E+00
188	0	0	0	1.516E-05	-1.494E-02	3.189E+00
189	0	0	0	1.516E-05	-1.494E-02	3.189E+00
190	0	0	0	1.516E-05	-1.494E-02	3.189E+00
191	0	0	0	1.516E-05	-1.494E-02	3.189E+00
192	0	0	0	1.516E-05	-1.494E-02	3.189E+00
193	0	0	0	1.516E-05	-1.494E-02	3.189E+00
194	0	0	0	1.516E-05	-1.494E-02	3.189E+00
195	0	0	0	1.516E-05	-1.494E-02	3.189E+00
196	0	0	0	1.516E-05	-1.494E-02	3.189E+00
197	0	0	0	1.516E-05	-1.494E-02	3.189E+00
198	0	0	0	1.516E-05	-1.494E-02	3.189E+00
199	0	0	0	1.516E-05	-1.494E-02	3.189E+00
200	0	0	0	1.516E-05	-1.494E-02	3.189E+00
201	0	0	0	1.516E-05	-1.494E-02	3.189E+00
202	0	0	0	1.516E-05	-1.494E-02	3.189E+00
203	0	0	0	1.516E-05	-1.494E-02	3.189E+00
204	0	4.00	0	1.516E-05	-1.494E-02	3.189E+00
205	0.50	7.70	1.60	1.516E-05	-1.494E-02	3.189E+00
206	5.00	14.00	4.24	1.516E-05	-1.494E-02	3.189E+00
207	11.00	24.70	7.50	1.516E-05	-1.494E-02	3.189E+00
208	15.00	42.30	9.18	1.516E-05	-1.494E-02	3.189E+00
209	16.00	70.00	10.11	1.516E-05	-1.494E-02	3.189E+00
210	17.00	70.00	10.34	1.516E-05	-1.494E-02	3.189E+00
211	17.00	50.00	10.46	1.516E-05	-1.494E-02	3.189E+00
212	16.00	26.30	9.93	1.516E-05	-1.494E-02	3.189E+00
213	14.00	5.00	8.70	1.516E-05	-1.494E-02	3.189E+00
214	10.00	(a)	7.43	1.516E-05	-1.494E-02	3.189E+00
215	10.00	(a)	9.14	1.516E-05	-1.494E-02	3.189E+00
216	14.00	73.30	9.72	1.516E-05	-1.494E-02	3.189E+00
217	18.00	83.00	9.84	1.516E-05	-1.494E-02	3.189E+00
218	19.00	84.80	10.02	1.516E-05	-1.494E-02	3.189E+00
219	18.00	84.80	9.92	5.053E-06	-4.979E-03	1.063E+00
220	16.00	82.80	9.14	-5.053E-06	4.979E-03	-1.063E+00
221	11.00	74.00	8.23	-1.516E-05	1.494E-02	-3.189E+00

222	7.00	8.50	6.64	-1.516E-05	1.494E-02	-3.189E+00
223	4.00	0	4.51	-1.516E-05	1.494E-02	-3.189E+00
224	0	0	0	-1.516E-05	1.494E-02	-3.189E+00
225	0	0	0	-1.516E-05	1.494E-02	-3.189E+00
226	0	0	0	-6.857E-06	6.357E-03	-2.057E+00
227	0	0	0	1.446E-06	-2.223E-03	-9.251E-01
228	0	0	0	9.749E-06	-1.080E-02	2.071E-01
229	0	0	0	9.749E-06	-1.080E-02	2.071E-01
230	0	0	0	9.749E-06	-1.080E-02	2.071E-01
231	0	0	0	9.749E-06	-1.080E-02	2.071E-01
232	0	0	0	9.749E-06	-1.080E-02	2.071E-01
233	6.00	17.60	0	9.749E-06	-1.080E-02	2.071E-01
234	6.00	19.60	0	9.749E-06	-1.080E-02	2.071E-01
235	5.00	14.00	0	9.749E-06	-1.080E-02	2.071E-01
236	3.00	9.80	0	9.749E-06	-1.080E-02	2.071E-01
237	1.00	5.50	0	9.749E-06	-1.080E-02	2.071E-01
238	0	3.00	0	9.749E-06	-1.080E-02	2.071E-01
239	0	0	0	9.749E-06	-1.080E-02	2.071E-01
240	0	0	0	9.749E-06	-1.080E-02	2.071E-01
241	0	0	0	9.749E-06	-1.080E-02	2.071E-01
242	0	0	0	9.749E-06	-1.080E-02	2.071E-01
243	0	0	0	9.749E-06	-1.080E-02	2.071E-01
244	0	0	0	9.749E-06	-1.080E-02	2.071E-01
245	0	0	0	9.749E-06	-1.080E-02	2.071E-01
246	0	0	0	9.749E-06	-1.080E-02	2.071E-01
247	0	0	0	9.749E-06	-1.080E-02	2.071E-01
248	0	0	0	9.749E-06	-1.080E-02	2.071E-01
249	0	0	0	9.749E-06	-1.080E-02	2.071E-01
250	0	0	0	9.749E-06	-1.080E-02	2.071E-01
251	0	0	0	9.749E-06	-1.080E-02	2.071E-01
252	0	0	0	9.749E-06	-1.080E-02	2.071E-01
253	0	0	0	9.749E-06	-1.080E-02	2.071E-01
254	0	0	0	9.749E-06	-1.080E-02	2.071E-01
255	0	0	0	9.749E-06	-1.080E-02	2.071E-01
256	0	0	0	9.749E-06	-1.080E-02	2.071E-01
257	0	0	0	9.749E-06	-1.080E-02	2.071E-01
258	0	0	0	9.749E-06	-1.080E-02	2.071E-01
259	0	0	0	9.749E-06	-1.080E-02	2.071E-01
260	0	0	0	9.749E-06	-1.080E-02	2.071E-01
261	0	0	0	9.749E-06	-1.080E-02	2.071E-01
262	0	0	0	9.749E-06	-1.080E-02	2.071E-01
263	0	0	0	9.749E-06	-1.080E-02	2.071E-01
264	0	0	0	9.749E-06	-1.080E-02	2.071E-01
265	0	0	0	9.749E-06	-1.080E-02	2.071E-01
266	0	0	0	9.749E-06	-1.080E-02	2.071E-01
267	0	0	0	9.749E-06	-1.080E-02	2.071E-01
268	0	0	0	9.749E-06	-1.080E-02	2.071E-01

269	0	0	0	9.749E-06	-1.080E-02	2.071E-01
270	0	0	0	9.749E-06	-1.080E-02	2.071E-01
271	0	0	0	9.749E-06	-1.080E-02	2.071E-01
272	0	0	0	9.749E-06	-1.080E-02	2.071E-01
273	0	0	0	9.749E-06	-1.080E-02	2.071E-01
274	0	0	0	9.749E-06	-1.080E-02	2.071E-01
275	0	0	0	9.749E-06	-1.080E-02	2.071E-01
276	0	0	0	9.749E-06	-1.080E-02	2.071E-01
277	0	0	0	9.749E-06	-1.080E-02	2.071E-01
278	0	0	0	9.749E-06	-1.080E-02	2.071E-01
279	0	0	0	9.749E-06	-1.080E-02	2.071E-01
280	0	0	0	9.749E-06	-1.080E-02	2.071E-01
281	0	7.00	0	9.749E-06	-1.080E-02	2.071E-01
282	1.00	10.00	0	9.749E-06	-1.080E-02	2.071E-01
283	2.00	11.50	0	9.749E-06	-1.080E-02	2.071E-01
284	1.00	10.00	0	9.749E-06	-1.080E-02	2.071E-01
285	0	0	0	9.749E-06	-1.080E-02	2.071E-01
286	0	0	0	9.749E-06	-1.080E-02	2.071E-01
287	0	0	0	9.749E-06	-1.080E-02	2.071E-01
288	0	0	0	9.749E-06	-1.080E-02	2.071E-01
289	0	0	0	9.749E-06	-1.080E-02	2.071E-01
290	0	0	0	9.749E-06	-1.080E-02	2.071E-01
291	0	0	0	9.749E-06	-1.080E-02	2.071E-01
292	0	0	0	9.749E-06	-1.080E-02	2.071E-01
293	0	0	0	9.749E-06	-1.080E-02	2.071E-01
294	0	0	0	9.749E-06	-1.080E-02	2.071E-01
295	0	0	0	9.749E-06	-1.080E-02	2.071E-01
296	0	0	0	9.749E-06	-1.080E-02	2.071E-01
297	0	0	0	9.749E-06	-1.080E-02	2.071E-01
298	0	0	0	9.749E-06	-1.080E-02	2.071E-01
299	0	28.00	0	9.749E-06	-1.080E-02	2.071E-01
300	0	30.00	0	9.749E-06	-1.080E-02	2.071E-01
301	2.00	32.00	0.55	9.749E-06	-1.080E-02	2.071E-01
302	6.00	34.00	1.92	9.749E-06	-1.080E-02	2.071E-01
303	14.00	36.00	3.18	9.749E-06	-1.080E-02	2.071E-01
304	19.00	36.00	4.80	9.749E-06	-1.080E-02	2.071E-01
305	24.50	36.00	6.63	9.749E-06	-1.080E-02	2.071E-01
306	24.50	36.00	7.87	9.749E-06	-1.080E-02	2.071E-01
307	24.00	30.00	8.32	9.749E-06	-1.080E-02	2.071E-01
308	19.00	24.00	9.66	9.749E-06	-1.080E-02	2.071E-01
309	13.00	18.00	11.46	9.749E-06	-1.080E-02	2.071E-01
310	9.00	14.00	13.28	9.749E-06	-1.080E-02	2.071E-01
311	7.00	8.00	14.61	9.749E-06	-1.080E-02	2.071E-01
312	6.00	0	14.39	9.749E-06	-1.080E-02	2.071E-01
313	4.00	3.00	13.50	9.749E-06	-1.080E-02	2.071E-01
314	3.00	6.80	12.41	9.749E-06	-1.080E-02	2.071E-01
315	0	0	11.30	9.749E-06	-1.080E-02	2.071E-01

316	0	0	11.25	9.749E-06	-1.080E-02	2.071E-01
317	0	0	12.29	9.749E-06	-1.080E-02	2.071E-01
318	0	0	13.26	9.749E-06	-1.080E-02	2.071E-01
319	0	0	13.66	9.749E-06	-1.080E-02	2.071E-01
320	0	0	14.27	9.749E-06	-1.080E-02	2.071E-01
321	0	0	15.17	9.749E-06	-1.080E-02	2.071E-01
322	0	0	16.05	9.749E-06	-1.080E-02	2.071E-01
323	0	18.00	16.49	9.749E-06	-1.080E-02	2.071E-01
324	3.00	40.00	17.52	9.749E-06	-1.080E-02	2.071E-01
325	8.00	86.00	18.06	9.749E-06	-1.080E-02	2.071E-01
326	18.00	97.00	18.18	9.749E-06	-1.080E-02	2.071E-01
327	38.00	100.00	18.95	9.749E-06	-1.080E-02	2.071E-01
328	45.50	100.00	20.48	9.749E-06	-1.080E-02	2.071E-01
329	45.00	96.00	20.48	3.250E-06	-3.601E-03	6.902E-02
330	44.00	84.40	19.50	-3.250E-06	3.601E-03	-6.902E-02
331	43.00	53.60	18.43	-9.749E-06	1.080E-02	-2.071E-01
332	41.00	5.00	17.44	-9.749E-06	1.080E-02	-2.071E-01
333	43.00	47.60	16.77	-9.749E-06	1.080E-02	-2.071E-01
334	44.00	90.00	16.36	-9.749E-06	1.080E-02	-2.071E-01
335	45.00	90.00	16.34	-9.749E-06	1.080E-02	-2.071E-01
336	44.00	73.00	16.79	-9.749E-06	1.080E-02	-2.071E-01
337	40.00	54.00	16.34	-9.749E-06	1.080E-02	-2.071E-01
338	38.00	34.70	15.13	-9.749E-06	1.080E-02	-2.071E-01
339	36.00	10.00	13.72	-9.749E-06	1.080E-02	-2.071E-01
340	35.00	10.00	12.04	-9.749E-06	1.080E-02	-2.071E-01
341	35.00	10.00	10.44	-9.749E-06	1.080E-02	-2.071E-01
342	35.50	60.00	9.71	-9.749E-06	1.080E-02	-2.071E-01
343	36.00	57.90	9.81	-9.749E-06	1.080E-02	-2.071E-01
344	37.00	53.00	10.65	-9.749E-06	1.080E-02	-2.071E-01
345	39.00	50.00	11.42	-9.749E-06	1.080E-02	-2.071E-01
346	40.50	50.00	10.54	-9.749E-06	1.080E-02	-2.071E-01
347	43.00	50.00	8.87	-9.749E-06	1.080E-02	-2.071E-01
348	45.00	50.00	9.26	-3.250E-06	3.601E-03	-6.902E-02
349	48.00	50.00	10.33	3.250E-06	-3.601E-03	6.902E-02
350	51.00	52.00	10.79	9.749E-06	-1.080E-02	2.071E-01
351	56.00	58.70	11.80	9.749E-06	-1.080E-02	2.071E-01
352	64.00	70.00	14.06	9.749E-06	-1.080E-02	2.071E-01
353	68.00	70.00	16.77	9.749E-06	-1.080E-02	2.071E-01
354	70.00	70.00	18.83	9.749E-06	-1.080E-02	2.071E-01
355	65.50	64.60	22.12	9.749E-06	-1.080E-02	2.071E-01
356	61.00	28.90	24.10	9.749E-06	-1.080E-02	2.071E-01
357	55.00	([a])	25.97	9.749E-06	-1.080E-02	2.071E-01
358	50.00	([a])	27.04	9.749E-06	-1.080E-02	2.071E-01
359	45.00	([a])	27.18	9.749E-06	-1.080E-02	2.071E-01
360	38.00	([a])	28.34	9.749E-06	-1.080E-02	2.071E-01
361	28.00	([a])	29.69	9.749E-06	-1.080E-02	2.071E-01
362	19.00	([a])	29.86	9.749E-06	-1.080E-02	2.071E-01

363	14.00	(a)	29.51	9.749E-06	-1.080E-02	2.071E-01
364	7.00	(a)	29.91	9.749E-06	-1.080E-02	2.071E-01
365	2.00	(a)	30.99	9.749E-06	-1.080E-02	2.071E-01
366	3.00	5.00	32.55	9.749E-06	-1.080E-02	2.071E-01
367	7.00	25.00	33.43	9.749E-06	-1.080E-02	2.071E-01
368	9.00	38.00	33.56	3.250E-06	-3.601E-03	6.902E-02
369	7.00	17.00	33.36	-3.250E-06	3.601E-03	-6.902E-02
370	4.00	2.00	32.65	-9.749E-06	1.080E-02	-2.071E-01
371	3.00	(a)	31.80	-9.749E-06	1.080E-02	-2.071E-01
372	3.00	(a)	30.92	-9.749E-06	1.080E-02	-2.071E-01
373	11.00	70.00	30.42	-9.749E-06	1.080E-02	-2.071E-01
374	15.00	97.60	29.73	-9.749E-06	1.080E-02	-2.071E-01
375	16.00	100.00	28.65	-9.749E-06	1.080E-02	-2.071E-01
376	19.00	100.00	27.50	-9.749E-06	1.080E-02	-2.071E-01
377	26.00	100.00	26.22	-9.749E-06	1.080E-02	-2.071E-01
378	29.00	95.00	24.69	-9.749E-06	1.080E-02	-2.071E-01
379	25.00	63.00	23.13	-9.749E-06	1.080E-02	-2.071E-01
380	19.00	(a)	21.68	-9.749E-06	1.080E-02	-2.071E-01
381	12.00	(a)	20.25	-9.749E-06	1.080E-02	-2.071E-01
382	8.00	(a)	15.73	-9.749E-06	1.080E-02	-2.071E-01
383	5.00	(a)	10.93	-9.749E-06	1.080E-02	-2.071E-01
384	2.00	(a)	6.12	-9.749E-06	1.080E-02	-2.071E-01
385	1.00	(a)	1.31	-9.749E-06	1.080E-02	-2.071E-01
386	0	0	0	-9.749E-06	1.080E-02	-2.071E-01
387	0	0	0	-9.749E-06	1.080E-02	-2.071E-01
388	0	0	0	-9.749E-06	1.080E-02	-2.071E-01
389	0	0	0	-9.749E-06	1.080E-02	-2.071E-01
390	0	0	0	-9.749E-06	1.080E-02	-2.071E-01
391	0	0	0	-9.749E-06	1.080E-02	-2.071E-01
392	0	0	0	-9.749E-06	1.080E-02	-2.071E-01
393	0	0	0	-1.165E-06	1.625E-03	1.971E+00
394	0	0	0	7.420E-06	-7.553E-03	4.149E+00
395	0	0	0	1.600E-05	-1.673E-02	6.327E+00
396	0	0	0	1.600E-05	-1.673E-02	6.327E+00
397	0	0	0	1.600E-05	-1.673E-02	6.327E+00
398	0	0	0	1.600E-05	-1.673E-02	6.327E+00
399	0	0	0	1.600E-05	-1.673E-02	6.327E+00
400	0	0	0	1.600E-05	-1.673E-02	6.327E+00
401	0	0	0	1.600E-05	-1.673E-02	6.327E+00
402	0	0	0	1.600E-05	-1.673E-02	6.327E+00
403	0	0	0	1.600E-05	-1.673E-02	6.327E+00
404	0	0	0	1.600E-05	-1.673E-02	6.327E+00
405	0	0	0	1.600E-05	-1.673E-02	6.327E+00
406	0	0	0	1.600E-05	-1.673E-02	6.327E+00
407	0	0	0	1.600E-05	-1.673E-02	6.327E+00
408	0	0	0	1.600E-05	-1.673E-02	6.327E+00
409	0	0	0	1.600E-05	-1.673E-02	6.327E+00

410	0	0	0	1.600E-05	-1.673E-02	6.327E+00
411	0	0	0	1.600E-05	-1.673E-02	6.327E+00
412	0	0	0	1.600E-05	-1.673E-02	6.327E+00
413	0	0	0	1.600E-05	-1.673E-02	6.327E+00
414	0	0	0	1.600E-05	-1.673E-02	6.327E+00
415	0	0	0	1.600E-05	-1.673E-02	6.327E+00
416	0	0	0	1.600E-05	-1.673E-02	6.327E+00
417	0	0	0	1.600E-05	-1.673E-02	6.327E+00
418	0	0	0	1.600E-05	-1.673E-02	6.327E+00
419	4.00	20.00	0	1.600E-05	-1.673E-02	6.327E+00
420	4.00	20.00	0	1.600E-05	-1.673E-02	6.327E+00
421	0	0	0	1.600E-05	-1.673E-02	6.327E+00
422	0	0	0	1.600E-05	-1.673E-02	6.327E+00
423	0	0	0	1.600E-05	-1.673E-02	6.327E+00
424	0	0	0	1.600E-05	-1.673E-02	6.327E+00
425	0	0	0	1.600E-05	-1.673E-02	6.327E+00
426	0	0	0	1.600E-05	-1.673E-02	6.327E+00
427	0	0	0	1.600E-05	-1.673E-02	6.327E+00
428	0	0	0	1.600E-05	-1.673E-02	6.327E+00
429	0	0	0	1.600E-05	-1.673E-02	6.327E+00
430	2.00	0	1.18	1.600E-05	-1.673E-02	6.327E+00
431	6.00	2.00	2.85	1.600E-05	-1.673E-02	6.327E+00
432	14.00	28.80	4.57	1.600E-05	-1.673E-02	6.327E+00
433	20.00	30.00	7.42	1.600E-05	-1.673E-02	6.327E+00
434	24.40	11.00	10.79	1.600E-05	-1.673E-02	6.327E+00
435	24.00	10.00	13.51	1.600E-05	-1.673E-02	6.327E+00
436	24.00	12.00	15.48	1.600E-05	-1.673E-02	6.327E+00
437	28.00	52.00	16.82	1.600E-05	-1.673E-02	6.327E+00
438	32.00	52.00	17.86	1.600E-05	-1.673E-02	6.327E+00
439	34.00	46.00	18.70	1.600E-05	-1.673E-02	6.327E+00
440	34.00	30.00	19.11	1.600E-05	-1.673E-02	6.327E+00
441	34.50	30.00	19.28	1.600E-05	-1.673E-02	6.327E+00
442	35.00	30.00	19.38	1.600E-05	-1.673E-02	6.327E+00
443	36.00	35.00	19.53	1.600E-05	-1.673E-02	6.327E+00
444	39.00	40.00	19.57	1.600E-05	-1.673E-02	6.327E+00
445	45.00	50.00	19.09	1.600E-05	-1.673E-02	6.327E+00
446	49.00	56.00	18.20	1.600E-05	-1.673E-02	6.327E+00
447	50.00	(a)	17.14	1.600E-05	-1.673E-02	6.327E+00
448	45.00	(a)	15.90	1.600E-05	-1.673E-02	6.327E+00
449	39.00	(a)	14.42	1.600E-05	-1.673E-02	6.327E+00
450	34.00	(a)	13.86	1.600E-05	-1.673E-02	6.327E+00
451	28.00	(a)	15.45	1.600E-05	-1.673E-02	6.327E+00
452	25.00	(a)	17.32	1.600E-05	-1.673E-02	6.327E+00
453	21.00	(a)	18.03	1.600E-05	-1.673E-02	6.327E+00
454	18.00	(a)	18.19	1.600E-05	-1.673E-02	6.327E+00
455	15.00	(a)	18.30	1.600E-05	-1.673E-02	6.327E+00
456	12.00	(a)	18.40	1.600E-05	-1.673E-02	6.327E+00

457	18.00	(a)	18.33	1.600E-05	-1.673E-02	6.327E+00
458	29.00	19.80	18.68	1.600E-05	-1.673E-02	6.327E+00
459	40.00	54.00	19.10	5.335E-06	-5.577E-03	2.109E+00
460	52.00	82.00	18.69	-5.335E-06	5.577E-03	-2.109E+00
461	64.00	95.00	17.89	-1.600E-05	1.673E-02	-6.327E+00
462	71.00	99.00	17.23	-1.600E-05	1.673E-02	-6.327E+00
463	77.00	100.00	16.65	-1.600E-05	1.673E-02	-6.327E+00
464	84.00	100.00	15.76	-1.600E-05	1.673E-02	-6.327E+00
465	85.00	99.00	14.53	-1.600E-05	1.673E-02	-6.327E+00
466	85.00	95.00	13.07	-1.600E-05	1.673E-02	-6.327E+00
467	84.00	90.00	11.26	-1.600E-05	1.673E-02	-6.327E+00
468	82.00	84.60	9.32	-1.600E-05	1.673E-02	-6.327E+00
469	80.00	78.50	8.04	-1.600E-05	1.673E-02	-6.327E+00
470	78.00	78.50	8.15	-7.218E-06	7.554E-03	-2.785E+00
471	77.00	70.00	9.43	1.567E-06	-1.623E-03	7.568E-01
472	76.00	65.50	10.80	1.035E-05	-1.080E-02	4.299E+00
473	74.00	61.50	12.16	1.035E-05	-1.080E-02	4.299E+00
474	72.00	56.00	14.25	1.035E-05	-1.080E-02	4.299E+00
475	70.00	52.00	16.38	1.035E-05	-1.080E-02	4.299E+00
476	68.00	46.00	17.48	1.035E-05	-1.080E-02	4.299E+00
477	66.50	40.00	17.41	1.035E-05	-1.080E-02	4.299E+00
478	65.00	32.00	16.78	1.035E-05	-1.080E-02	4.299E+00
479	63.00	26.00	16.06	1.035E-05	-1.080E-02	4.299E+00
480	61.00	25.60	15.24	1.035E-05	-1.080E-02	4.299E+00
481	61.00	72.00	14.69	1.035E-05	-1.080E-02	4.299E+00
482	61.00	78.00	15.38	1.035E-05	-1.080E-02	4.299E+00
483	58.00	72.00	16.86	1.035E-05	-1.080E-02	4.299E+00
484	50.00	64.00	17.35	1.035E-05	-1.080E-02	4.299E+00
485	44.00	55.00	16.98	1.035E-05	-1.080E-02	4.299E+00
486	35.00	40.00	16.57	1.035E-05	-1.080E-02	4.299E+00
487	26.00	20.00	16.12	1.035E-05	-1.080E-02	4.299E+00
488	21.00	(a)	15.67	1.035E-05	-1.080E-02	4.299E+00
489	18.00	(a)	15.46	1.035E-05	-1.080E-02	4.299E+00
490	16.00	(a)	15.52	1.035E-05	-1.080E-02	4.299E+00
491	19.00	(a)	15.89	1.035E-05	-1.080E-02	4.299E+00
492	24.00	2.00	16.77	1.035E-05	-1.080E-02	4.299E+00
493	32.00	68.50	18.08	1.035E-05	-1.080E-02	4.299E+00
494	45.00	78.00	19.31	1.035E-05	-1.080E-02	4.299E+00
495	51.00	86.00	20.11	1.035E-05	-1.080E-02	4.299E+00
496	58.00	92.00	20.75	1.035E-05	-1.080E-02	4.299E+00
497	64.00	97.00	21.23	1.035E-05	-1.080E-02	4.299E+00
498	71.00	100.00	21.40	1.035E-05	-1.080E-02	4.299E+00
499	73.00	98.00	21.51	1.035E-05	-1.080E-02	4.299E+00
500	73.00	94.00	22.18	1.035E-05	-1.080E-02	4.299E+00
501	73.00	86.00	22.48	1.035E-05	-1.080E-02	4.299E+00
502	73.00	82.00	22.49	1.035E-05	-1.080E-02	4.299E+00
503	76.00	84.00	23.27	1.035E-05	-1.080E-02	4.299E+00

504	80.00	98.00	24.39	1.035E-05	-1.080E-02	4.299E+00
505	84.00	100.00	25.09	1.035E-05	-1.080E-02	4.299E+00
506	85.00	100.00	25.26	1.035E-05	-1.080E-02	4.299E+00
507	84.00	100.00	25.15	1.035E-05	-1.080E-02	4.299E+00
508	81.00	92.00	24.80	1.035E-05	-1.080E-02	4.299E+00
509	75.00	80.00	24.30	1.035E-05	-1.080E-02	4.299E+00
510	73.00	70.00	23.92	1.035E-05	-1.080E-02	4.299E+00
511	70.00	60.00	23.82	1.035E-05	-1.080E-02	4.299E+00
512	67.00	53.00	23.75	1.035E-05	-1.080E-02	4.299E+00
513	65.00	45.00	24.34	1.035E-05	-1.080E-02	4.299E+00
514	63.00	36.50	25.03	1.035E-05	-1.080E-02	4.299E+00
515	62.00	28.00	25.13	1.035E-05	-1.080E-02	4.299E+00
516	61.00	22.50	25.14	1.035E-05	-1.080E-02	4.299E+00
517	60.00	23.00	25.14	1.035E-05	-1.080E-02	4.299E+00
518	60.00	24.00	25.15	1.035E-05	-1.080E-02	4.299E+00
519	60.00	24.00	25.15	1.035E-05	-1.080E-02	4.299E+00
520	60.00	26.00	25.16	1.035E-05	-1.080E-02	4.299E+00
521	61.00	60.00	25.17	1.035E-05	-1.080E-02	4.299E+00
522	62.00	64.00	25.24	1.035E-05	-1.080E-02	4.299E+00
523	63.00	64.00	25.41	1.035E-05	-1.080E-02	4.299E+00
524	64.00	64.00	26.56	1.035E-05	-1.080E-02	4.299E+00
525	62.00	64.00	28.84	1.035E-05	-1.080E-02	4.299E+00
526	56.00	60.00	31.08	1.035E-05	-1.080E-02	4.299E+00
527	53.00	([a])	32.37	1.035E-05	-1.080E-02	4.299E+00
528	49.00	([a])	32.70	1.035E-05	-1.080E-02	4.299E+00
529	47.00	([a])	32.76	1.035E-05	-1.080E-02	4.299E+00
530	46.00	([a])	32.82	6.288E-06	-6.906E-03	2.331E+00
531	45.00	([a])	32.88	2.223E-06	-3.012E-03	3.623E-01
532	45.00	30.00	33.19	-1.842E-06	8.816E-04	-1.606E+00
533	46.00	50.00	33.89	-1.842E-06	8.816E-04	-1.606E+00
534	46.00	50.00	35.07	-1.842E-06	8.816E-04	-1.606E+00
535	47.00	50.00	36.61	-1.842E-06	8.816E-04	-1.606E+00
536	47.00	50.00	37.63	-1.842E-06	8.816E-04	-1.606E+00
537	47.00	30.00	38.05	-1.842E-06	8.816E-04	-1.606E+00
538	46.00	12.00	38.67	-1.842E-06	8.816E-04	-1.606E+00
539	45.00	10.50	39.32	-1.842E-06	8.816E-04	-1.606E+00
540	44.00	10.00	39.54	-1.842E-06	8.816E-04	-1.606E+00
541	41.00	10.00	39.55	-1.842E-06	8.816E-04	-1.606E+00
542	37.00	9.00	39.56	-1.842E-06	8.816E-04	-1.606E+00
543	36.00	2.00	39.58	-1.842E-06	8.816E-04	-1.606E+00
544	35.00	([a])	39.59	-1.842E-06	8.816E-04	-1.606E+00
545	38.00	67.00	39.61	-1.842E-06	8.816E-04	-1.606E+00
546	35.00	([a])	39.60	-1.842E-06	8.816E-04	-1.606E+00
547	31.00	15.00	39.69	-1.842E-06	8.816E-04	-1.606E+00
548	28.00	55.00	39.99	-1.842E-06	8.816E-04	-1.606E+00
549	34.00	44.00	40.39	-1.842E-06	8.816E-04	-1.606E+00
550	35.00	38.50	41.01	-1.842E-06	8.816E-04	-1.606E+00

551	36.00	38.50	41.65	-1.842E-06	8.816E-04	-1.606E+00
552	36.00	38.50	41.69	-1.842E-06	8.816E-04	-1.606E+00
553	37.00	38.50	41.17	-1.842E-06	8.816E-04	-1.606E+00
554	39.00	36.00	40.47	-1.842E-06	8.816E-04	-1.606E+00
555	42.00	27.00	39.83	-1.842E-06	8.816E-04	-1.606E+00
556	45.00	62.00	39.39	-1.842E-06	8.816E-04	-1.606E+00
557	48.00	45.00	39.14	-1.842E-06	8.816E-04	-1.606E+00
558	51.00	15.00	38.99	-1.842E-06	8.816E-04	-1.606E+00
559	51.00	8.00	38.88	-1.842E-06	8.816E-04	-1.606E+00
560	51.00	6.00	38.86	-1.842E-06	8.816E-04	-1.606E+00
561	48.00	10.00	39.17	-1.842E-06	8.816E-04	-1.606E+00
562	46.00	11.00	39.37	-6.139E-07	2.939E-04	-5.353E-01
563	44.00	13.00	38.63	6.139E-07	-2.939E-04	5.353E-01
564	41.00	17.00	36.96	1.842E-06	-8.816E-04	1.606E+00
565	37.00	20.00	34.87	1.842E-06	-8.816E-04	1.606E+00
566	34.00	20.00	32.73	1.842E-06	-8.816E-04	1.606E+00
567	30.00	17.00	30.53	1.842E-06	-8.816E-04	1.606E+00
568	26.00	14.00	28.27	1.842E-06	-8.816E-04	1.606E+00
569	23.00	7.00	26.02	1.842E-06	-8.816E-04	1.606E+00
570	19.00	2.00	23.76	1.842E-06	-8.816E-04	1.606E+00
571	15.00	([a])	21.37	1.842E-06	-8.816E-04	1.606E+00
572	11.00	([a])	18.79	1.842E-06	-8.816E-04	1.606E+00
573	8.00	([a])	16.06	1.842E-06	-8.816E-04	1.606E+00
574	5.00	([a])	13.05	1.842E-06	-8.816E-04	1.606E+00
575	2.00	([a])	9.54	1.842E-06	-8.816E-04	1.606E+00
576	0	0	4.59	1.842E-06	-8.816E-04	1.606E+00
577	0	0	0	1.842E-06	-8.816E-04	1.606E+00
578	0	0	0	1.842E-06	-8.816E-04	1.606E+00
579	0	0	0	1.842E-06	-8.816E-04	1.606E+00
580	0	0	0	1.842E-06	-8.816E-04	1.606E+00
581	0	0	0	8.289E-06	-7.507E-03	1.023E+00
582	0	0	0	1.474E-05	-1.413E-02	4.394E-01
583	4.00	15.00	0	2.118E-05	-2.076E-02	-1.439E-01
584	19.00	31.00	0.78	2.118E-05	-2.076E-02	-1.439E-01
585	30.00	46.00	1.94	2.118E-05	-2.076E-02	-1.439E-01
586	37.00	68.00	3.83	2.118E-05	-2.076E-02	-1.439E-01
587	40.00	76.00	5.98	2.118E-05	-2.076E-02	-1.439E-01
588	41.00	77.00	8.07	2.118E-05	-2.076E-02	-1.439E-01
589	40.50	78.00	10.09	2.118E-05	-2.076E-02	-1.439E-01
590	40.00	77.00	10.29	2.118E-05	-2.076E-02	-1.439E-01
591	40.00	64.00	7.34	2.118E-05	-2.076E-02	-1.439E-01
592	38.00	10.00	3.27	2.118E-05	-2.076E-02	-1.439E-01
593	38.00	25.00	3.24	2.118E-05	-2.076E-02	-1.439E-01
594	40.00	50.00	5.98	2.118E-05	-2.076E-02	-1.439E-01
595	40.00	36.00	8.48	2.118E-05	-2.076E-02	-1.439E-01
596	40.00	31.00	11.00	2.118E-05	-2.076E-02	-1.439E-01
597	40.00	31.00	13.62	2.118E-05	-2.076E-02	-1.439E-01

598	41.00	37.00	16.07	2.118E-05	-2.076E-02	-1.439E-01
599	42.00	97.00	18.51	2.118E-05	-2.076E-02	-1.439E-01
600	43.00	100.00	21.51	1.588E-05	-1.615E-02	-7.554E-01
601	45.00	100.00	24.71	1.058E-05	-1.153E-02	-1.367E+00
602	47.00	100.00	27.57	5.283E-06	-6.920E-03	-1.978E+00
603	48.00	100.00	30.04	5.283E-06	-6.920E-03	-1.978E+00
604	49.00	100.00	32.22	5.283E-06	-6.920E-03	-1.978E+00
605	51.00	97.00	34.28	5.283E-06	-6.920E-03	-1.978E+00
606	52.00	94.00	36.22	5.283E-06	-6.920E-03	-1.978E+00
607	53.00	90.00	38.08	5.283E-06	-6.920E-03	-1.978E+00
608	54.00	87.00	39.83	5.283E-06	-6.920E-03	-1.978E+00
609	56.00	86.00	41.63	5.283E-06	-6.920E-03	-1.978E+00
610	56.00	85.00	43.18	5.283E-06	-6.920E-03	-1.978E+00
611	55.50	85.00	44.33	5.283E-06	-6.920E-03	-1.978E+00
612	55.00	81.00	45.38	5.283E-06	-6.920E-03	-1.978E+00
613	54.00	77.00	46.14	5.283E-06	-6.920E-03	-1.978E+00
614	53.00	72.00	46.39	5.283E-06	-6.920E-03	-1.978E+00
615	52.00	67.00	46.34	5.283E-06	-6.920E-03	-1.978E+00
616	49.00	60.00	46.24	5.283E-06	-6.920E-03	-1.978E+00
617	46.00	45.00	46.14	5.283E-06	-6.920E-03	-1.978E+00
618	45.00	12.00	46.05	5.283E-06	-6.920E-03	-1.978E+00
619	44.00	10.00	46.13	5.283E-06	-6.920E-03	-1.978E+00
620	44.00	10.00	46.49	5.283E-06	-6.920E-03	-1.978E+00
621	45.00	12.00	46.78	5.283E-06	-6.920E-03	-1.978E+00
622	46.00	14.00	46.81	5.283E-06	-6.920E-03	-1.978E+00
623	47.00	24.00	46.95	5.283E-06	-6.920E-03	-1.978E+00
624	49.00	88.00	47.37	5.283E-06	-6.920E-03	-1.978E+00
625	50.00	90.00	47.62	2.349E-06	-3.713E-03	-1.409E+00
626	51.00	90.00	47.58	-5.848E-07	-5.058E-04	-8.401E-01
627	52.00	90.00	48.00	-3.519E-06	2.701E-03	-2.710E-01
628	53.00	90.00	48.46	-3.519E-06	2.701E-03	-2.710E-01
629	54.00	90.00	48.45	-3.519E-06	2.701E-03	-2.710E-01
630	54.00	90.00	48.40	-3.519E-06	2.701E-03	-2.710E-01
631	54.00	87.00	48.59	-3.519E-06	2.701E-03	-2.710E-01
632	54.00	84.00	49.30	-3.519E-06	2.701E-03	-2.710E-01
633	54.00	80.00	50.02	-3.519E-06	2.701E-03	-2.710E-01
634	53.50	77.00	50.27	-3.519E-06	2.701E-03	-2.710E-01
635	53.00	76.00	50.00	-3.519E-06	2.701E-03	-2.710E-01
636	53.00	75.00	49.73	-3.519E-06	2.701E-03	-2.710E-01
637	52.00	73.00	49.57	-3.519E-06	2.701E-03	-2.710E-01
638	51.00	69.00	49.31	-3.519E-06	2.701E-03	-2.710E-01
639	50.00	65.00	49.29	-3.519E-06	2.701E-03	-2.710E-01
640	50.00	60.00	49.71	-3.519E-06	2.701E-03	-2.710E-01
641	49.00	55.00	50.02	-3.519E-06	2.701E-03	-2.710E-01
642	49.00	50.00	50.05	-3.519E-06	2.701E-03	-2.710E-01
643	49.00	50.00	50.07	-3.519E-06	2.701E-03	-2.710E-01
644	49.50	60.00	50.33	-3.519E-06	2.701E-03	-2.710E-01

645	49.50	65.00	50.75	-3.519E-06	2.701E-03	-2.710E-01
646	50.00	70.00	51.03	-3.519E-06	2.701E-03	-2.710E-01
647	50.50	75.00	51.47	-3.519E-06	2.701E-03	-2.710E-01
648	51.00	80.00	51.92	-3.519E-06	2.701E-03	-2.710E-01
649	52.00	85.00	51.93	-3.519E-06	2.701E-03	-2.710E-01
650	53.00	90.00	51.90	-4.549E-06	3.697E-03	-6.366E-01
651	54.00	90.00	51.87	-5.579E-06	4.693E-03	-1.002E+00
652	55.00	90.00	51.85	-6.609E-06	5.688E-03	-1.368E+00
653	55.00	88.00	51.82	-6.609E-06	5.688E-03	-1.368E+00
654	55.00	84.00	51.82	-6.609E-06	5.688E-03	-1.368E+00
655	55.00	79.00	52.54	-6.609E-06	5.688E-03	-1.368E+00
656	55.00	74.00	53.59	-6.609E-06	5.688E-03	-1.368E+00
657	55.00	69.00	54.19	-6.609E-06	5.688E-03	-1.368E+00
658	55.00	64.00	54.26	-6.609E-06	5.688E-03	-1.368E+00
659	55.00	59.00	54.07	-6.609E-06	5.688E-03	-1.368E+00
660	55.00	54.00	53.93	-6.609E-06	5.688E-03	-1.368E+00
661	55.00	49.00	53.92	-6.609E-06	5.688E-03	-1.368E+00
662	55.00	44.50	53.90	-6.609E-06	5.688E-03	-1.368E+00
663	55.00	39.00	53.89	-6.609E-06	5.688E-03	-1.368E+00
664	55.00	34.00	53.88	-6.609E-06	5.688E-03	-1.368E+00
665	55.00	27.00	53.87	-6.609E-06	5.688E-03	-1.368E+00
666	55.00	18.00	53.85	-6.609E-06	5.688E-03	-1.368E+00
667	55.00	8.00	53.81	-6.609E-06	5.688E-03	-1.368E+00
668	55.00	6.00	53.67	-6.609E-06	5.688E-03	-1.368E+00
669	55.00	13.00	53.67	-6.609E-06	5.688E-03	-1.368E+00
670	55.00	27.00	54.32	-6.609E-06	5.688E-03	-1.368E+00
671	55.50	30.00	54.88	-6.609E-06	5.688E-03	-1.368E+00
672	56.00	30.00	54.87	-6.609E-06	5.688E-03	-1.368E+00
673	57.00	30.00	54.86	-6.609E-06	5.688E-03	-1.368E+00
674	58.00	34.00	54.75	-6.609E-06	5.688E-03	-1.368E+00
675	59.00	46.00	54.28	-5.500E-06	4.582E-03	-7.225E-01
676	59.00	89.00	53.84	-4.390E-06	3.477E-03	-7.706E-02
677	59.00	90.00	54.02	-3.280E-06	2.371E-03	5.683E-01
678	59.00	91.00	54.48	-3.280E-06	2.371E-03	5.683E-01
679	59.00	91.00	54.76	-3.280E-06	2.371E-03	5.683E-01
680	60.00	91.00	54.84	-3.280E-06	2.371E-03	5.683E-01
681	60.00	91.00	54.87	-3.280E-06	2.371E-03	5.683E-01
682	60.50	90.00	54.90	-3.280E-06	2.371E-03	5.683E-01
683	61.00	89.00	54.93	-3.280E-06	2.371E-03	5.683E-01
684	61.50	88.00	54.97	-3.280E-06	2.371E-03	5.683E-01
685	62.00	83.00	55.00	-3.280E-06	2.371E-03	5.683E-01
686	63.00	73.00	55.03	-3.280E-06	2.371E-03	5.683E-01
687	65.00	70.00	55.06	-3.280E-06	2.371E-03	5.683E-01
688	66.00	71.00	55.10	-3.280E-06	2.371E-03	5.683E-01
689	67.00	74.00	55.12	-3.280E-06	2.371E-03	5.683E-01
690	67.50	79.00	55.15	-3.280E-06	2.371E-03	5.683E-01
691	68.00	85.00	55.16	-3.280E-06	2.371E-03	5.683E-01

692	68.50	90.00	55.18	-3.280E-06	2.371E-03	5.683E-01
693	69.00	94.00	55.33	-3.280E-06	2.371E-03	5.683E-01
694	69.50	96.00	55.85	-3.280E-06	2.371E-03	5.683E-01
695	70.00	98.00	56.52	-3.280E-06	2.371E-03	5.683E-01
696	70.50	100.00	57.05	-3.280E-06	2.371E-03	5.683E-01
697	71.00	100.00	57.31	-3.280E-06	2.371E-03	5.683E-01
698	72.00	100.00	57.35	-3.280E-06	2.371E-03	5.683E-01
699	72.00	100.00	57.34	-3.280E-06	2.371E-03	5.683E-01
700	72.00	100.00	57.34	-2.967E-06	2.047E-03	8.641E-01
701	72.00	100.00	57.33	-2.653E-06	1.723E-03	1.160E+00
702	72.00	100.00	57.33	-2.340E-06	1.399E-03	1.456E+00
703	72.00	100.00	57.33	-2.340E-06	1.399E-03	1.456E+00
704	72.00	100.00	57.32	-2.340E-06	1.399E-03	1.456E+00
705	72.00	100.00	57.31	-2.340E-06	1.399E-03	1.456E+00
706	72.00	100.00	57.30	-2.340E-06	1.399E-03	1.456E+00
707	72.50	100.00	57.39	-2.340E-06	1.399E-03	1.456E+00
708	73.00	100.00	57.71	-2.340E-06	1.399E-03	1.456E+00
709	73.50	100.00	58.14	-2.340E-06	1.399E-03	1.456E+00
710	74.00	100.00	58.34	-2.340E-06	1.399E-03	1.456E+00
711	74.00	100.00	58.34	-2.340E-06	1.399E-03	1.456E+00
712	74.50	100.00	58.33	-2.340E-06	1.399E-03	1.456E+00
713	75.00	100.00	58.33	-2.340E-06	1.399E-03	1.456E+00
714	75.00	100.00	58.32	-2.340E-06	1.399E-03	1.456E+00
715	75.00	100.00	58.31	-2.340E-06	1.399E-03	1.456E+00
716	75.00	100.00	58.30	-2.340E-06	1.399E-03	1.456E+00
717	75.00	100.00	58.30	-2.340E-06	1.399E-03	1.456E+00
718	75.00	100.00	58.30	-2.340E-06	1.399E-03	1.456E+00
719	75.00	100.00	58.30	-2.340E-06	1.399E-03	1.456E+00
720	75.00	100.00	58.48	-2.340E-06	1.399E-03	1.456E+00
721	75.00	100.00	58.92	-2.340E-06	1.399E-03	1.456E+00
722	75.00	100.00	59.26	-2.340E-06	1.399E-03	1.456E+00
723	75.00	98.00	59.34	-2.340E-06	1.399E-03	1.456E+00
724	75.00	90.00	59.32	-2.340E-06	1.399E-03	1.456E+00
725	75.00	34.00	59.37	-3.622E-06	2.640E-03	9.220E-01
726	74.00	15.00	59.67	-4.905E-06	3.881E-03	3.883E-01
727	72.00	3.00	60.11	-6.187E-06	5.122E-03	-1.455E-01
728	70.00	([a])	60.32	-6.187E-06	5.122E-03	-1.455E-01
729	69.00	([a])	60.30	-6.187E-06	5.122E-03	-1.455E-01
730	68.00	([a])	60.29	-6.187E-06	5.122E-03	-1.455E-01
731	70.50	53.00	60.27	-6.187E-06	5.122E-03	-1.455E-01
732	73.00	80.00	60.26	-6.187E-06	5.122E-03	-1.455E-01
733	75.00	88.00	60.25	-6.187E-06	5.122E-03	-1.455E-01
734	77.00	94.00	60.18	-6.187E-06	5.122E-03	-1.455E-01
735	79.00	97.00	59.83	-6.187E-06	5.122E-03	-1.455E-01
736	82.00	97.00	59.36	-6.187E-06	5.122E-03	-1.455E-01
737	85.00	98.00	59.65	-6.187E-06	5.122E-03	-1.455E-01
738	85.00	98.00	60.12	-6.187E-06	5.122E-03	-1.455E-01

739	87.00	97.00	59.80	-6.187E-06	5.122E-03	-1.455E-01
740	90.00	95.00	59.82	-6.187E-06	5.122E-03	-1.455E-01
741	92.00	90.00	60.18	-6.187E-06	5.122E-03	-1.455E-01
742	93.00	88.00	60.27	-6.187E-06	5.122E-03	-1.455E-01
743	94.00	86.00	60.31	-6.187E-06	5.122E-03	-1.455E-01
744	95.00	83.00	60.35	-6.187E-06	5.122E-03	-1.455E-01
745	96.00	79.00	60.37	-6.187E-06	5.122E-03	-1.455E-01
746	97.00	74.00	60.35	-6.187E-06	5.122E-03	-1.455E-01
747	98.00	68.00	60.33	-6.187E-06	5.122E-03	-1.455E-01
748	99.00	62.00	60.30	-6.187E-06	5.122E-03	-1.455E-01
749	100.00	54.00	60.26	-6.187E-06	5.122E-03	-1.455E-01
750	100.00	30.00	60.45	-7.791E-06	6.722E-03	-9.485E-01
751	100.00	22.00	61.12	-9.395E-06	8.322E-03	-1.752E+00
752	100.00	20.00	61.91	-1.100E-05	9.923E-03	-2.555E+00
753	100.00	22.00	62.23	-1.100E-05	9.923E-03	-2.555E+00
754	100.00	30.00	62.19	-1.100E-05	9.923E-03	-2.555E+00
755	100.00	65.00	62.17	-1.100E-05	9.923E-03	-2.555E+00
756	100.00	76.00	62.19	-1.100E-05	9.923E-03	-2.555E+00
757	100.00	80.00	62.24	-1.100E-05	9.923E-03	-2.555E+00
758	100.00	78.00	62.28	-1.100E-05	9.923E-03	-2.555E+00
759	100.00	72.00	62.30	-1.100E-05	9.923E-03	-2.555E+00
760	100.00	54.00	62.79	-1.100E-05	9.923E-03	-2.555E+00
761	95.00	30.00	63.22	-1.100E-05	9.923E-03	-2.555E+00
762	85.00	12.00	63.11	-1.100E-05	9.923E-03	-2.555E+00
763	68.00	([a])	62.97	-1.100E-05	9.923E-03	-2.555E+00
764	57.00	([a])	62.82	-1.100E-05	9.923E-03	-2.555E+00
765	56.00	([a])	62.67	-1.100E-05	9.923E-03	-2.555E+00
766	57.00	([a])	62.52	-1.100E-05	9.923E-03	-2.555E+00
767	57.00	([a])	62.37	-1.100E-05	9.923E-03	-2.555E+00
768	57.00	22.00	62.32	-1.100E-05	9.923E-03	-2.555E+00
769	58.00	40.00	62.45	-1.100E-05	9.923E-03	-2.555E+00
770	59.00	45.00	62.64	-1.100E-05	9.923E-03	-2.555E+00
771	59.00	46.00	62.69	-1.100E-05	9.923E-03	-2.555E+00
772	59.50	45.00	62.66	-1.100E-05	9.923E-03	-2.555E+00
773	60.00	33.00	62.62	-1.100E-05	9.923E-03	-2.555E+00
774	60.00	0	62.59	-1.100E-05	9.923E-03	-2.555E+00
775	60.00	([a])	62.55	-1.027E-05	9.176E-03	-2.095E+00
776	60.00	([a])	62.51	-9.541E-06	8.429E-03	-1.636E+00
777	60.00	34.00	62.44	-8.813E-06	7.683E-03	-1.177E+00
778	60.00	50.00	62.37	-8.813E-06	7.683E-03	-1.177E+00
779	60.00	60.00	62.29	-8.813E-06	7.683E-03	-1.177E+00
780	60.00	69.00	62.21	-8.813E-06	7.683E-03	-1.177E+00
781	60.00	75.00	62.15	-8.813E-06	7.683E-03	-1.177E+00
782	60.00	79.00	62.46	-8.813E-06	7.683E-03	-1.177E+00
783	61.00	83.00	63.40	-8.813E-06	7.683E-03	-1.177E+00
784	61.00	84.00	63.97	-8.813E-06	7.683E-03	-1.177E+00
785	61.00	85.00	63.98	-8.813E-06	7.683E-03	-1.177E+00

786	62.00	85.00	63.94	-8.813E-06	7.683E-03	-1.177E+00
787	62.00	85.00	63.93	-8.813E-06	7.683E-03	-1.177E+00
788	62.00	85.00	63.92	-8.813E-06	7.683E-03	-1.177E+00
789	63.00	85.00	63.92	-8.813E-06	7.683E-03	-1.177E+00
790	63.00	85.00	63.91	-8.813E-06	7.683E-03	-1.177E+00
791	64.00	85.00	64.21	-8.813E-06	7.683E-03	-1.177E+00
792	64.00	85.00	64.61	-8.813E-06	7.683E-03	-1.177E+00
793	64.00	85.00	64.50	-8.813E-06	7.683E-03	-1.177E+00
794	64.00	85.00	64.05	-8.813E-06	7.683E-03	-1.177E+00
795	64.00	85.00	63.83	-8.813E-06	7.683E-03	-1.177E+00
796	64.00	84.50	63.81	-8.813E-06	7.683E-03	-1.177E+00
797	64.00	84.00	63.79	-8.813E-06	7.683E-03	-1.177E+00
798	64.00	83.00	63.77	-8.813E-06	7.683E-03	-1.177E+00
799	64.00	82.00	63.76	-8.813E-06	7.683E-03	-1.177E+00
800	64.00	81.00	63.75	-8.873E-06	7.725E-03	-1.104E+00
801	64.00	77.00	63.73	-8.933E-06	7.767E-03	-1.032E+00
802	64.00	72.00	63.72	-8.993E-06	7.810E-03	-9.592E-01
803	65.00	67.00	63.70	-8.993E-06	7.810E-03	-9.592E-01
804	66.00	64.00	63.69	-8.993E-06	7.810E-03	-9.592E-01
805	67.00	60.00	63.69	-8.993E-06	7.810E-03	-9.592E-01
806	69.00	62.30	63.68	-8.993E-06	7.810E-03	-9.592E-01
807	72.00	84.00	64.10	-8.993E-06	7.810E-03	-9.592E-01
808	73.00	90.50	64.60	-8.993E-06	7.810E-03	-9.592E-01
809	74.00	91.00	64.73	-8.993E-06	7.810E-03	-9.592E-01
810	74.00	90.00	64.73	-8.993E-06	7.810E-03	-9.592E-01
811	74.00	84.50	64.73	-8.993E-06	7.810E-03	-9.592E-01
812	73.00	74.00	64.72	-8.993E-06	7.810E-03	-9.592E-01
813	72.00	66.00	64.71	-8.993E-06	7.810E-03	-9.592E-01
814	71.00	60.00	64.71	-8.993E-06	7.810E-03	-9.592E-01
815	70.00	54.00	64.70	-8.993E-06	7.810E-03	-9.592E-01
816	69.00	50.00	64.69	-8.993E-06	7.810E-03	-9.592E-01
817	68.00	49.00	64.68	-8.993E-06	7.810E-03	-9.592E-01
818	68.00	48.00	64.82	-8.993E-06	7.810E-03	-9.592E-01
819	68.00	48.00	65.27	-8.993E-06	7.810E-03	-9.592E-01
820	68.00	48.50	65.65	-8.993E-06	7.810E-03	-9.592E-01
821	68.00	49.00	65.71	-8.993E-06	7.810E-03	-9.592E-01
822	68.00	51.00	65.72	-8.993E-06	7.810E-03	-9.592E-01
823	68.00	53.50	65.72	-8.993E-06	7.810E-03	-9.592E-01
824	68.00	55.00	65.72	-8.993E-06	7.810E-03	-9.592E-01
825	68.00	58.00	65.71	-8.993E-06	7.810E-03	-9.592E-01
826	68.00	60.00	65.70	-8.993E-06	7.810E-03	-9.592E-01
827	68.00	62.00	65.69	-8.993E-06	7.810E-03	-9.592E-01
828	68.00	64.00	65.67	-8.993E-06	7.810E-03	-9.592E-01
829	68.00	67.00	65.27	-8.993E-06	7.810E-03	-9.592E-01
830	69.00	68.50	64.33	-8.993E-06	7.810E-03	-9.592E-01
831	70.00	70.00	63.65	-8.993E-06	7.810E-03	-9.592E-01
832	70.00	70.00	63.50	-8.993E-06	7.810E-03	-9.592E-01

833	70.00	70.00	63.49	-8.993E-06	7.810E-03	-9.592E-01
834	70.00	70.00	63.49	-8.993E-06	7.810E-03	-9.592E-01
835	70.00	70.00	63.37	-8.993E-06	7.810E-03	-9.592E-01
836	70.00	70.00	63.01	-8.993E-06	7.810E-03	-9.592E-01
837	71.00	66.00	62.60	-8.993E-06	7.810E-03	-9.592E-01
838	73.00	64.00	62.44	-8.993E-06	7.810E-03	-9.592E-01
839	75.00	64.00	62.45	-8.993E-06	7.810E-03	-9.592E-01
840	77.00	98.00	62.47	-5.933E-06	4.759E-03	5.464E-01
841	79.00	100.00	62.50	-2.873E-06	1.709E-03	2.052E+00
842	81.00	100.00	62.52	1.865E-07	-1.342E-03	3.558E+00
843	82.00	100.00	62.54	1.865E-07	-1.342E-03	3.558E+00
844	83.00	100.00	62.57	1.865E-07	-1.342E-03	3.558E+00
845	84.00	98.00	62.70	1.865E-07	-1.342E-03	3.558E+00
846	84.00	94.00	62.90	1.865E-07	-1.342E-03	3.558E+00
847	85.00	93.00	63.11	1.865E-07	-1.342E-03	3.558E+00
848	86.00	94.00	63.32	1.865E-07	-1.342E-03	3.558E+00
849	87.00	98.00	63.53	1.865E-07	-1.342E-03	3.558E+00
850	89.00	100.00	63.74	1.865E-07	-1.342E-03	3.558E+00
851	92.00	100.00	62.20	1.865E-07	-1.342E-03	3.558E+00
852	95.00	100.00	62.67	1.865E-07	-1.342E-03	3.558E+00
853	97.50	100.00	63.19	1.865E-07	-1.342E-03	3.558E+00
854	100.00	100.00	63.62	1.865E-07	-1.342E-03	3.558E+00
855	100.00	100.00	64.06	1.865E-07	-1.342E-03	3.558E+00
856	100.00	100.00	64.19	6.218E-08	-4.474E-04	1.186E+00
857	100.00	100.00	63.87	-6.218E-08	4.474E-04	-1.186E+00
858	100.00	97.00	63.38	-1.865E-07	1.342E-03	-3.558E+00
859	96.00	(a)	62.62	-1.865E-07	1.342E-03	-3.558E+00
860	94.00	(a)	61.32	-1.865E-07	1.342E-03	-3.558E+00
861	91.00	(a)	59.72	-1.865E-07	1.342E-03	-3.558E+00
862	88.00	(a)	58.30	-1.865E-07	1.342E-03	-3.558E+00
863	86.00	(a)	57.08	-1.865E-07	1.342E-03	-3.558E+00
864	84.00	(a)	55.85	-1.865E-07	1.342E-03	-3.558E+00
865	82.00	(a)	54.61	-1.865E-07	1.342E-03	-3.558E+00
866	79.00	(a)	53.36	-1.865E-07	1.342E-03	-3.558E+00
867	77.00	(a)	52.10	-1.865E-07	1.342E-03	-3.558E+00
868	75.00	(a)	50.74	-1.865E-07	1.342E-03	-3.558E+00
869	73.00	(a)	49.34	-1.865E-07	1.342E-03	-3.558E+00
870	72.00	(a)	48.05	-1.865E-07	1.342E-03	-3.558E+00
871	72.00	(a)	46.82	-1.865E-07	1.342E-03	-3.558E+00
872	72.00	(a)	45.61	-1.865E-07	1.342E-03	-3.558E+00
873	71.00	8.00	44.37	-1.865E-07	1.342E-03	-3.558E+00
874	68.00	9.00	43.06	-1.865E-07	1.342E-03	-3.558E+00
875	64.00	(a)	41.65	-1.865E-07	1.342E-03	-3.558E+00
876	58.00	(a)	40.32	-1.865E-07	1.342E-03	-3.558E+00
877	56.00	53.00	39.28	-1.865E-07	1.342E-03	-3.558E+00
878	56.00	67.00	38.40	-1.865E-07	1.342E-03	-3.558E+00
879	56.00	70.00	37.30	-1.865E-07	1.342E-03	-3.558E+00

880	56.00	67.00	35.79	-1.865E-07	1.342E-03	-3.558E+00
881	55.00	60.00	34.14	-1.865E-07	1.342E-03	-3.558E+00
882	54.00	60.00	32.69	-1.865E-07	1.342E-03	-3.558E+00
883	49.00	75.00	31.38	-1.865E-07	1.342E-03	-3.558E+00
884	38.00	80.00	29.63	-1.865E-07	1.342E-03	-3.558E+00
885	30.00	78.00	27.22	-1.865E-07	1.342E-03	-3.558E+00
886	25.00	53.00	25.01	-1.865E-07	1.342E-03	-3.558E+00
887	18.00	32.00	23.09	-1.865E-07	1.342E-03	-3.558E+00
888	14.00	16.00	20.23	-1.865E-07	1.342E-03	-3.558E+00
889	9.00	3.00	17.20	-1.865E-07	1.342E-03	-3.558E+00
890	5.00	([a])	12.61	-1.865E-07	1.342E-03	-3.558E+00
891	1.00	([a])	7.43	-1.865E-07	1.342E-03	-3.558E+00
892	0	0	2.81	-1.865E-07	1.342E-03	-3.558E+00
893	0	0	0	-1.865E-07	1.342E-03	-3.558E+00
894	0	0	0	-1.865E-07	1.342E-03	-3.558E+00
895	0	0	0	-1.865E-07	1.342E-03	-3.558E+00
896	0	0	0	-1.865E-07	1.342E-03	-3.558E+00
987	0	0	0	-1.865E-07	1.342E-03	-3.558E+00
898	0	0	0	-1.865E-07	1.342E-03	-3.558E+00
899	0	0	0	-1.865E-07	1.342E-03	-3.558E+00
900	0	0	0	-1.865E-07	1.342E-03	-3.558E+00
901	0	0	0	8.801E-06	-7.855E-03	-7.493E-01
902	0	0	0	1.779E-05	-1.705E-02	2.059E+00
903	0	0	0	2.678E-05	-2.625E-02	4.867E+00
904	0	0	0	2.678E-05	-2.625E-02	4.867E+00
905	0	0	0	2.678E-05	-2.625E-02	4.867E+00
906	0	0	0	2.678E-05	-2.625E-02	4.867E+00
907	0	0	0	2.678E-05	-2.625E-02	4.867E+00
908	0	0	0	2.678E-05	-2.625E-02	4.867E+00
909	0	0	0	2.678E-05	-2.625E-02	4.867E+00
910	0	0	0	2.678E-05	-2.625E-02	4.867E+00
911	0	0	0	2.678E-05	-2.625E-02	4.867E+00
912	0	0	0	2.678E-05	-2.625E-02	4.867E+00
913	0	0	0	2.678E-05	-2.625E-02	4.867E+00
914	0	0	0	2.678E-05	-2.625E-02	4.867E+00
915	0	0	0	2.678E-05	-2.625E-02	4.867E+00
916	0	0	0	2.678E-05	-2.625E-02	4.867E+00
917	0	0	0	2.678E-05	-2.625E-02	4.867E+00
918	0	0	0	2.678E-05	-2.625E-02	4.867E+00
919	0	0	0	2.678E-05	-2.625E-02	4.867E+00
920	4.50	47.00	2.63	2.678E-05	-2.625E-02	4.867E+00
921	12.00	85.00	4.93	2.678E-05	-2.625E-02	4.867E+00
922	30.00	97.00	7.24	2.678E-05	-2.625E-02	4.867E+00
923	42.00	100.00	9.73	2.678E-05	-2.625E-02	4.867E+00
924	51.00	100.00	11.91	2.678E-05	-2.625E-02	4.867E+00
925	54.00	100.00	14.16	2.678E-05	-2.625E-02	4.867E+00
926	54.00	97.00	16.04	2.678E-05	-2.625E-02	4.867E+00

927	52.00	90.00	17.98	2.678E-05	-2.625E-02	4.867E+00
928	48.00	75.00	20.21	2.678E-05	-2.625E-02	4.867E+00
929	44.00	57.00	22.03	2.678E-05	-2.625E-02	4.867E+00
930	37.00	47.00	22.35	8.925E-06	-8.749E-03	1.622E+00
931	29.00	40.00	21.52	-8.925E-06	8.749E-03	-1.622E+00
932	24.00	34.00	20.04	-2.678E-05	2.625E-02	-4.867E+00
933	21.00	27.00	18.29	-2.678E-05	2.625E-02	-4.867E+00
934	22.00	24.00	16.40	-2.678E-05	2.625E-02	-4.867E+00
935	22.50	22.00	14.40	-2.678E-05	2.625E-02	-4.867E+00
936	20.00	16.00	12.23	-2.678E-05	2.625E-02	-4.867E+00
937	15.00	7.00	9.84	-2.678E-05	2.625E-02	-4.867E+00
938	10.00	0	8.55	-2.678E-05	2.625E-02	-4.867E+00
939	5.00	(a)	7.56	-2.678E-05	2.625E-02	-4.867E+00
940	2.00	(a)	6.14	-2.678E-05	2.625E-02	-4.867E+00
941	1.00	(a)	2.60	-2.678E-05	2.625E-02	-4.867E+00
942	0	0	0	-2.678E-05	2.625E-02	-4.867E+00
943	0	0	0	-2.678E-05	2.625E-02	-4.867E+00
944	0	0	0	-1.658E-05	1.607E-02	-3.386E+00
945	1.00	0	1.06	-6.376E-06	5.889E-03	-1.905E+00
946	5.00	20.00	2.16	3.823E-06	-4.291E-03	-4.241E-01
947	15.00	43.00	3.30	3.823E-06	-4.291E-03	-4.241E-01
948	28.00	52.00	4.37	3.823E-06	-4.291E-03	-4.241E-01
949	34.00	64.00	5.42	3.823E-06	-4.291E-03	-4.241E-01
950	37.00	74.00	6.47	3.823E-06	-4.291E-03	-4.241E-01
951	37.50	90.00	7.51	3.823E-06	-4.291E-03	-4.241E-01
952	37.00	56.00	8.55	3.823E-06	-4.291E-03	-4.241E-01
953	36.00	27.00	9.55	3.823E-06	-4.291E-03	-4.241E-01
954	35.00	(a)	10.25	3.823E-06	-4.291E-03	-4.241E-01
955	33.00	(a)	10.78	3.823E-06	-4.291E-03	-4.241E-01
956	29.00	(a)	11.16	3.823E-06	-4.291E-03	-4.241E-01
957	29.00	(a)	11.76	3.823E-06	-4.291E-03	-4.241E-01
958	29.00	(a)	12.59	3.823E-06	-4.291E-03	-4.241E-01
959	34.00	30.00	13.80	3.823E-06	-4.291E-03	-4.241E-01
960	38.00	75.00	14.85	3.823E-06	-4.291E-03	-4.241E-01
961	34.00	70.00	15.59	3.823E-06	-4.291E-03	-4.241E-01
962	31.00	25.00	16.20	3.823E-06	-4.291E-03	-4.241E-01
963	28.00	(a)	16.82	3.823E-06	-4.291E-03	-4.241E-01
964	26.00	(a)	17.55	3.823E-06	-4.291E-03	-4.241E-01
965	24.00	(a)	17.91	3.823E-06	-4.291E-03	-4.241E-01
966	23.00	4.00	18.08	3.823E-06	-4.291E-03	-4.241E-01
967	23.00	22.00	18.10	3.823E-06	-4.291E-03	-4.241E-01
968	24.00	30.00	18.31	3.823E-06	-4.291E-03	-4.241E-01
969	23.00	32.00	18.67	3.823E-06	-4.291E-03	-4.241E-01
970	22.00	25.00	19.23	7.198E-06	-7.629E-03	2.015E+00
971	18.00	18.00	19.69	1.057E-05	-1.097E-02	4.453E+00
972	16.00	14.00	20.02	1.395E-05	-1.430E-02	6.892E+00
973	15.00	10.00	19.94	1.395E-05	-1.430E-02	6.892E+00

974	15.00	0.0	19.80	1.395E-05	-1.430E-02	6.892E+00
975	15.00	(a)	19.69	1.395E-05	-1.430E-02	6.892E+00
976	15.00	(a)	19.76	1.395E-05	-1.430E-02	6.892E+00
977	18.00	(a)	19.93	1.395E-05	-1.430E-02	6.892E+00
978	25.00	40.00	20.24	1.395E-05	-1.430E-02	6.892E+00
979	37.00	90.00	20.69	1.395E-05	-1.430E-02	6.892E+00
980	46.00	90.00	21.23	1.395E-05	-1.430E-02	6.892E+00
981	49.00	90.00	21.78	1.395E-05	-1.430E-02	6.892E+00
982	49.00	90.00	22.15	1.395E-05	-1.430E-02	6.892E+00
983	49.00	85.00	22.33	1.395E-05	-1.430E-02	6.892E+00
984	47.00	77.00	22.36	1.395E-05	-1.430E-02	6.892E+00
985	44.00	59.00	22.36	4.650E-06	-4.768E-03	2.297E+00
986	43.00	36.00	22.33	-4.650E-06	4.768E-03	-2.297E+00
987	42.00	13.00	22.15	-1.395E-05	1.430E-02	-6.892E+00
988	40.00	(a)	21.91	-1.395E-05	1.430E-02	-6.892E+00
989	41.00	65.00	21.62	-1.395E-05	1.430E-02	-6.892E+00
990	44.00	65.00	21.32	-1.395E-05	1.430E-02	-6.892E+00
991	45.00	65.00	21.01	-1.395E-05	1.430E-02	-6.892E+00
992	45.00	62.00	20.70	-1.395E-05	1.430E-02	-6.892E+00
993	44.00	56.00	20.48	-1.395E-05	1.430E-02	-6.892E+00
994	42.00	46.00	20.31	-1.395E-05	1.430E-02	-6.892E+00
995	41.00	36.00	20.13	-1.395E-05	1.430E-02	-6.892E+00
996	39.00	20.00	19.86	-1.395E-05	1.430E-02	-6.892E+00
997	38.00	4.00	19.49	-1.395E-05	1.430E-02	-6.892E+00
998	37.00	33.00	19.11	-1.395E-05	1.430E-02	-6.892E+00
999	38.00	39.00	18.71	-1.395E-05	1.430E-02	-6.892E+00
1,000	36.00	40.00	18.30	-1.395E-05	1.430E-02	-6.892E+00
1,001	35.00	40.00	17.86	-1.395E-05	1.430E-02	-6.892E+00
1,002	33.00	39.00	17.39	-1.395E-05	1.430E-02	-6.892E+00
1,003	30.00	36.00	16.86	-1.395E-05	1.430E-02	-6.892E+00
1,004	27.00	33.00	16.31	-1.395E-05	1.430E-02	-6.892E+00
1,005	22.00	24.00	15.75	-1.395E-05	1.430E-02	-6.892E+00
1,006	21.00	(a)	15.24	-1.395E-05	1.430E-02	-6.892E+00
1,007	20.00	(a)	14.73	-1.395E-05	1.430E-02	-6.892E+00
1,008	18.00	(a)	14.23	-1.395E-05	1.430E-02	-6.892E+00
1,009	17.00	28.00	13.73	-1.395E-05	1.430E-02	-6.892E+00
1,010	16.00	5.00	12.79	-1.395E-05	1.430E-02	-6.892E+00
1,011	14.00	(a)	11.11	-1.395E-05	1.430E-02	-6.892E+00
1,012	12.00	(a)	9.43	-1.395E-05	1.430E-02	-6.892E+00
1,013	9.00	(a)	7.75	-1.395E-05	1.430E-02	-6.892E+00
1,014	7.00	(a)	6.07	-1.395E-05	1.430E-02	-6.892E+00
1,015	5.00	(a)	4.39	-4.650E-06	4.768E-03	-2.297E+00
1,016	4.00	(a)	2.71	4.650E-06	-4.768E-03	2.297E+00
1,017	3.00	(a)	1.03	1.395E-05	-1.430E-02	6.892E+00
1,018	2.00	(a)	0.19	1.395E-05	-1.430E-02	6.892E+00
1,019	0	0	0	1.395E-05	-1.430E-02	6.892E+00
1,020	0	0	0	1.395E-05	-1.430E-02	6.892E+00

1,021	0	0	0	1.458E-05	-1.532E-02	5.630E+00
1,022	0	0	0	1.520E-05	-1.634E-02	4.368E+00
1,023	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,024	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,025	2.00	7.00	3.25	1.583E-05	-1.736E-02	3.105E+00
1,026	6.00	15.00	5.47	1.583E-05	-1.736E-02	3.105E+00
1,027	10.00	28.00	6.71	1.583E-05	-1.736E-02	3.105E+00
1,028	11.00	26.00	6.71	1.583E-05	-1.736E-02	3.105E+00
1,029	10.00	10.00	6.71	5.277E-06	-5.787E-03	1.035E+00
1,030	8.00	3.00	6.55	-5.277E-06	5.787E-03	-1.035E+00
1,031	5.00	0	6.01	-1.583E-05	1.736E-02	-3.105E+00
1,032	2.00	0	5.15	-1.583E-05	1.736E-02	-3.105E+00
1,033	0	0	3.90	-1.583E-05	1.736E-02	-3.105E+00
1,034	0	0	2.19	-1.583E-05	1.736E-02	-3.105E+00
1,035	0	0	0	-5.277E-06	5.787E-03	-1.035E+00
1,036	0	0	0	5.277E-06	-5.787E-03	1.035E+00
1,037	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,038	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,039	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,040	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,041	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,042	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,043	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,044	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,045	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,046	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,047	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,048	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,049	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,050	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,051	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,052	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,053	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,054	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,055	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,056	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,057	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,058	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,059	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,060	0	0	0	1.583E-05	-1.736E-02	3.105E+00
1,061	4.00	5.00	1.95	1.583E-05	-1.736E-02	3.105E+00
1,062	11.00	35.00	3.70	1.583E-05	-1.736E-02	3.105E+00
1,063	21.00	73.00	5.53	1.583E-05	-1.736E-02	3.105E+00
1,064	25.00	86.00	7.22	1.583E-05	-1.736E-02	3.105E+00
1,065	26.00	90.00	8.64	1.583E-05	-1.736E-02	3.105E+00
1,066	25.00	90.00	10.33	1.583E-05	-1.736E-02	3.105E+00
1,067	23.00	83.00	11.18	5.277E-06	-5.787E-03	1.035E+00

1,068	20.00	32.00	10.57	-5.277E-06	5.787E-03	-1.035E+00
1,069	16.00	(a)	9.33	-1.583E-05	1.736E-02	-3.105E+00
1,070	14.00	(a)	7.87	-1.583E-05	1.736E-02	-3.105E+00
1,071	10.00	(a)	6.27	-1.583E-05	1.736E-02	-3.105E+00
1,072	7.00	(a)	4.58	-1.583E-05	1.736E-02	-3.105E+00
1,073	3.00	(a)	3.81	-1.583E-05	1.736E-02	-3.105E+00
1,074	1.00	(a)	2.35	-1.583E-05	1.736E-02	-3.105E+00
1,075	0	0	0	-1.583E-05	1.736E-02	-3.105E+00
1,076	0	0	0	-6.540E-06	7.597E-03	-2.563E+00
1,077	0	0	0	2.749E-06	-2.167E-03	-2.021E+00
1,078	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,079	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,080	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,081	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,082	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,083	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,084	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,085	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,086	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,087	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,088	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,089	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,090	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,091	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,092	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,093	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,094	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,095	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,096	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,097	0	0	0	1.204E-05	-1.193E-02	-1.480E+00
1,098	1.00	3.00	1.35	1.204E-05	-1.193E-02	-1.480E+00
1,099	3.00	6.00	3.37	1.204E-05	-1.193E-02	-1.480E+00
1,100	6.00	13.00	6.40	1.204E-05	-1.193E-02	-1.480E+00
1,101	9.00	14.00	8.47	1.204E-05	-1.193E-02	-1.480E+00
1,102	12.00	16.00	9.57	1.204E-05	-1.193E-02	-1.480E+00
1,103	15.00	28.00	10.19	1.204E-05	-1.193E-02	-1.480E+00
1,104	18.00	60.00	10.35	1.204E-05	-1.193E-02	-1.480E+00
1,105	20.00	47.00	10.46	1.204E-05	-1.193E-02	-1.480E+00
1,106	21.00	31.00	10.11	1.204E-05	-1.193E-02	-1.480E+00
1,107	21.00	15.00	9.12	1.204E-05	-1.193E-02	-1.480E+00
1,108	20.00	(a)	7.81	1.133E-05	-1.140E-02	1.667E-01
1,109	20.00	(a)	7.87	1.062E-05	-1.087E-02	1.813E+00
1,110	20.00	(a)	9.57	9.917E-06	-1.035E-02	3.459E+00
1,111	20.00	70.00	9.75	9.917E-06	-1.035E-02	3.459E+00
1,112	21.00	83.00	9.84	9.917E-06	-1.035E-02	3.459E+00
1,113	22.00	84.00	9.96	9.917E-06	-1.035E-02	3.459E+00
1,114	22.00	83.00	10.13	3.306E-06	-3.449E-03	1.153E+00

1,115	18.00	78.00	9.36	-3.306E-06	3.449E-03	-1.153E+00
1,116	14.00	68.00	8.80	-9.917E-06	1.035E-02	-3.459E+00
1,117	8.00	10.00	7.67	-9.917E-06	1.035E-02	-3.459E+00
1,118	4.00	4.00	6.08	-9.917E-06	1.035E-02	-3.459E+00
1,119	1.00	0.0	4.03	-9.917E-06	1.035E-02	-3.459E+00
1,120	0	0	0	-3.306E-06	3.449E-03	-1.153E+00
1,121	0	0	0	3.306E-06	-3.449E-03	1.153E+00
1,122	0	0	0	9.917E-06	-1.035E-02	3.459E+00
1,123	0	0	0	9.917E-06	-1.035E-02	3.459E+00
1,124	0	0	0	9.917E-06	-1.035E-02	3.459E+00
1,125	0	1.00	0	9.917E-06	-1.035E-02	3.459E+00
1,126	1.00	5.00	3.25	9.917E-06	-1.035E-02	3.459E+00
1,127	5.00	18.00	5.47	9.917E-06	-1.035E-02	3.459E+00
1,128	9.00	19.00	6.71	9.917E-06	-1.035E-02	3.459E+00
1,129	12.00	18.00	6.71	9.917E-06	-1.035E-02	3.459E+00
1,130	12.00	15.00	6.71	9.917E-06	-1.035E-02	3.459E+00
1,131	9.00	10.00	6.55	9.917E-06	-1.035E-02	3.459E+00
1,132	5.00	5.00	6.01	9.917E-06	-1.035E-02	3.459E+00
1,133	2.00	2.00	5.15	9.917E-06	-1.035E-02	3.459E+00
1,134	0	0	3.90	9.917E-06	-1.035E-02	3.459E+00
1,135	0	0	2.19	9.917E-06	-1.035E-02	3.459E+00
1,136	0	0	0	6.611E-06	-6.897E-03	2.306E+00
1,137	0	0	0	3.306E-06	-3.449E-03	1.153E+00
1,138	0	0	0	0	0	0
1,139	0	0	0	0	0	0
1,140	0	0	0	0	0	0
1,141	0	0	0	0	0	0
1,142	0	0	0	0	0	0
1,143	0	0	0	0	0	0
1,144	0	0	0	0	0	0
1,145	0	0	0	0	0	0
1,146	0	0	0	0	0	0
1,147	0	0	0	0	0	0
1,148	0	0	0	0	0	0
1,149	0	0	0	0	0	0
1,150	0	0	0	0	0	0
1,151	0	0	0	0	0	0
1,152	0	0	0	0	0	0
1,153	0	0	0	0	0	0
1,154	0	0	0	0	0	0
1,155	0	0	0	0	0	0
1,156	0	0	0	0	0	0
1,157	0	0	0	0	0	0
1,158	0	0	0	0	0	0
1,159	0	0	0	0	0	0
1,160	0	0	0	0	0	0
1,161	0	0	0	0	0	0

1,162	0	0	0	0	0	0
1,163	0	0	0	0	0	0
1,164	0	0	0	0	0	0
1,165	0	0	0	0	0	0
1,166	0	0	0	0	0	0
1,167	0	0	0	0	0	0

[a]Closed throttle motoring.

(c) The following transient duty cycle applies for compression ignition engines and powertrains:

Record (seconds)	Engine testing		Powertrain testing			
	Normalized revolutions per minute (percent)	Normalized torque (percent)	Vehicle speed (mi/hr)	Road grade coefficients		
				a	*b*	*c*
1	0	0	0	0	0	0
2	0	0	0	1.248E-05	-1.073E-02	1.064E+00
3	0	0	0	1.872E-05	-1.609E-02	1.596E+00
4	0	0	0	1.872E-05	-1.609E-02	1.596E+00
5	0	0	0	1.872E-05	-1.609E-02	1.596E+00
6	0	0	0	1.872E-05	-1.609E-02	1.596E+00
7	0	0	0	1.872E-05	-1.609E-02	1.596E+00
8	0	0	0	1.872E-05	-1.609E-02	1.596E+00
9	0	0	0	1.872E-05	-1.609E-02	1.596E+00
10	0	0	0	1.872E-05	-1.609E-02	1.596E+00
11	0	0	0	1.872E-05	-1.609E-02	1.596E+00
12	0	0	0	1.872E-05	-1.609E-02	1.596E+00
13	0	0	0	1.872E-05	-1.609E-02	1.596E+00
14	0	0	0	1.872E-05	-1.609E-02	1.596E+00
15	0	0	0	1.872E-05	-1.609E-02	1.596E+00
16	0	0	0	1.872E-05	-1.609E-02	1.596E+00
17	0	0	0	1.872E-05	-1.609E-02	1.596E+00
18	0	0	0	1.872E-05	-1.609E-02	1.596E+00
19	0	0	0	1.872E-05	-1.609E-02	1.596E+00
20	0	0	0	1.872E-05	-1.609E-02	1.596E+00
21	0	0	0	1.872E-05	-1.609E-02	1.596E+00
22	0	0	0	1.872E-05	-1.609E-02	1.596E+00
23	0	0	0	1.872E-05	-1.609E-02	1.596E+00
24	0	0	0	1.872E-05	-1.609E-02	1.596E+00
25	0	3.67	0	1.872E-05	-1.609E-02	1.596E+00
26	0	47.69	0	1.872E-05	-1.609E-02	1.596E+00
27	2.78	59.41	0.33	1.872E-05	-1.609E-02	1.596E+00
28	8.12	84.54	1.67	1.872E-05	-1.609E-02	1.596E+00
29	13.95	80.00	2.83	1.872E-05	-1.609E-02	1.596E+00
30	29.90	80.00	4.02	1.872E-05	-1.609E-02	1.596E+00

31	33.87	79.29	5.64	1.872E-05	-1.609E-02	1.596E+00
32	27.86	38.25	7.39	1.872E-05	-1.609E-02	1.596E+00
33	19.63	26.67	8.83	1.872E-05	-1.609E-02	1.596E+00
34	26.79	15.10	9.15	1.872E-05	-1.609E-02	1.596E+00
35	19.85	16.47	9.70	1.872E-05	-1.609E-02	1.596E+00
36	17.51	28.05	11.37	1.872E-05	-1.609E-02	1.596E+00
37	17.86	20.38	13.04	1.872E-05	-1.609E-02	1.596E+00
38	16.37	([a])	14.74	1.872E-05	-1.609E-02	1.596E+00
39	5.85	([a])	16.41	2.033E-05	-1.775E-02	3.890E+00
40	14.13	([a])	16.85	2.194E-05	-1.941E-02	6.184E+00
41	21.10	([a])	16.09	2.356E-05	-2.107E-02	8.477E+00
42	15.63	([a])	15.23	2.356E-05	-2.107E-02	8.477E+00
43	12.67	62.52	14.22	2.356E-05	-2.107E-02	8.477E+00
44	14.86	69.36	13.02	2.356E-05	-2.107E-02	8.477E+00
45	24.79	60.00	12.47	2.356E-05	-2.107E-02	8.477E+00
46	33.06	63.79	13.05	2.356E-05	-2.107E-02	8.477E+00
47	42.29	75.36	14.26	2.356E-05	-2.107E-02	8.477E+00
48	48.90	80.00	15.09	2.356E-05	-2.107E-02	8.477E+00
49	51.52	80.00	15.42	2.356E-05	-2.107E-02	8.477E+00
50	48.24	79.92	15.96	2.356E-05	-2.107E-02	8.477E+00
51	51.79	65.03	16.58	2.356E-05	-2.107E-02	8.477E+00
52	52.37	43.23	17.61	2.356E-05	-2.107E-02	8.477E+00
53	56.14	50.00	18.33	2.356E-05	-2.107E-02	8.477E+00
54	62.35	50.00	18.65	2.356E-05	-2.107E-02	8.477E+00
55	64.29	42.05	19.67	2.356E-05	-2.107E-02	8.477E+00
56	67.69	40.00	20.47	2.356E-05	-2.107E-02	8.477E+00
57	75.20	42.20	20.57	2.356E-05	-2.107E-02	8.477E+00
58	74.88	41.28	20.68	2.356E-05	-2.107E-02	8.477E+00
59	71.92	([a])	21.56	2.356E-05	-2.107E-02	8.477E+00
60	71.88	([a])	23.19	2.356E-05	-2.107E-02	8.477E+00
61	69.64	([a])	23.64	7.852E-06	-7.024E-03	2.826E+00
62	71.24	([a])	22.75	-7.852E-06	7.024E-03	-2.826E+00
63	71.72	30.54	21.81	-2.356E-05	2.107E-02	-8.477E+00
64	76.41	42.12	20.79	-2.356E-05	2.107E-02	-8.477E+00
65	73.02	50.00	19.86	-2.356E-05	2.107E-02	-8.477E+00
66	69.64	50.00	19.18	-2.356E-05	2.107E-02	-8.477E+00
67	72.09	43.16	18.75	-2.356E-05	2.107E-02	-8.477E+00
68	82.23	73.65	18.43	-2.356E-05	2.107E-02	-8.477E+00
69	78.58	([a])	18.61	-2.356E-05	2.107E-02	-8.477E+00
70	75.00	([a])	19.11	-2.356E-05	2.107E-02	-8.477E+00
71	75.00	([a])	18.76	-2.356E-05	2.107E-02	-8.477E+00
72	72.47	([a])	17.68	-2.356E-05	2.107E-02	-8.477E+00
73	62.91	([a])	16.46	-2.356E-05	2.107E-02	-8.477E+00
74	58.93	13.57	15.06	-2.356E-05	2.107E-02	-8.477E+00
75	55.56	29.43	13.41	-2.356E-05	2.107E-02	-8.477E+00
76	57.14	20.00	11.91	-2.356E-05	2.107E-02	-8.477E+00
77	56.68	17.42	11.09	-2.356E-05	2.107E-02	-8.477E+00

78	53.88	10.00	10.90	-2.356E-05	2.107E-02	-8.477E+00
79	50.76	10.00	11.40	-2.356E-05	2.107E-02	-8.477E+00
80	50.00	([a])	12.38	-2.356E-05	2.107E-02	-8.477E+00
81	46.83	([a])	13.02	-2.356E-05	2.107E-02	-8.477E+00
82	35.63	10.00	12.30	-2.356E-05	2.107E-02	-8.477E+00
83	32.48	10.00	10.32	-2.356E-05	2.107E-02	-8.477E+00
84	26.79	10.00	9.70	-2.356E-05	2.107E-02	-8.477E+00
85	24.94	10.00	11.05	-2.356E-05	2.107E-02	-8.477E+00
86	23.21	16.74	11.88	-2.356E-05	2.107E-02	-8.477E+00
87	24.70	3.36	12.21	-2.356E-05	2.107E-02	-8.477E+00
88	25.00	([a])	13.29	-2.356E-05	2.107E-02	-8.477E+00
89	24.47	([a])	13.73	-2.356E-05	2.107E-02	-8.477E+00
90	18.71	([a])	12.77	-2.356E-05	2.107E-02	-8.477E+00
91	10.85	([a])	11.46	-2.356E-05	2.107E-02	-8.477E+00
92	3.40	([a])	9.84	-2.356E-05	2.107E-02	-8.477E+00
93	0	0	7.62	-2.356E-05	2.107E-02	-8.477E+00
94	0	0	3.57	-2.356E-05	2.107E-02	-8.477E+00
95	0	0.91	1.33	-2.356E-05	2.107E-02	-8.477E+00
96	0	7.52	0	-2.356E-05	2.107E-02	-8.477E+00
97	0	0	0	-2.356E-05	2.107E-02	-8.477E+00
98	0	0	0	-2.356E-05	2.107E-02	-8.477E+00
99	0	0	0	-2.356E-05	2.107E-02	-8.477E+00
100	0	0	0	-9.275E-06	8.450E-03	-4.643E+00
101	0	0	0	5.004E-06	-4.171E-03	-8.092E-01
102	0	0	0	1.928E-05	-1.679E-02	3.025E+00
103	0	0	0	1.928E-05	-1.679E-02	3.025E+00
104	0	0	0	1.928E-05	-1.679E-02	3.025E+00
105	0	0	0	1.928E-05	-1.679E-02	3.025E+00
106	0	0	0	1.928E-05	-1.679E-02	3.025E+00
107	0	0	0	1.928E-05	-1.679E-02	3.025E+00
108	0	0	0	1.928E-05	-1.679E-02	3.025E+00
109	0	0	0	1.928E-05	-1.679E-02	3.025E+00
110	0	0	0	1.928E-05	-1.679E-02	3.025E+00
111	0	0	0	1.928E-05	-1.679E-02	3.025E+00
112	0	0	0	1.928E-05	-1.679E-02	3.025E+00
113	0	0	0	1.928E-05	-1.679E-02	3.025E+00
114	0	0	0	1.928E-05	-1.679E-02	3.025E+00
115	0	0	0	1.928E-05	-1.679E-02	3.025E+00
116	0	0	0	1.928E-05	-1.679E-02	3.025E+00
117	0	0	0	1.928E-05	-1.679E-02	3.025E+00
118	0	0	0	1.928E-05	-1.679E-02	3.025E+00
119	0	0	0	1.928E-05	-1.679E-02	3.025E+00
120	0	0	0	1.928E-05	-1.679E-02	3.025E+00
121	0	0	0	1.928E-05	-1.679E-02	3.025E+00
122	0	0	0	1.928E-05	-1.679E-02	3.025E+00
123	0	0	0	1.928E-05	-1.679E-02	3.025E+00
124	0	0	0	1.928E-05	-1.679E-02	3.025E+00

125	0	0	0	1.928E-05	-1.679E-02	3.025E+00
126	0	0	0	1.928E-05	-1.679E-02	3.025E+00
127	0	0	0	1.928E-05	-1.679E-02	3.025E+00
128	0	0	0	1.928E-05	-1.679E-02	3.025E+00
129	1.58	([a])	0	1.928E-05	-1.679E-02	3.025E+00
130	1.43	([a])	0	1.928E-05	-1.679E-02	3.025E+00
131	0	0	0	1.928E-05	-1.679E-02	3.025E+00
132	0	0	0	1.928E-05	-1.679E-02	3.025E+00
133	1.91	9.28	0	1.928E-05	-1.679E-02	3.025E+00
134	2.75	0	0	1.928E-05	-1.679E-02	3.025E+00
135	0	0	0	1.928E-05	-1.679E-02	3.025E+00
136	0	0	0	1.928E-05	-1.679E-02	3.025E+00
137	0	0	0	1.928E-05	-1.679E-02	3.025E+00
138	0	0	0	1.928E-05	-1.679E-02	3.025E+00
139	0	0	0	1.928E-05	-1.679E-02	3.025E+00
140	0	0	0	1.928E-05	-1.679E-02	3.025E+00
141	0	0	0	1.928E-05	-1.679E-02	3.025E+00
142	0	0	0	1.928E-05	-1.679E-02	3.025E+00
143	0	0	0	1.928E-05	-1.679E-02	3.025E+00
144	0	0	0	1.928E-05	-1.679E-02	3.025E+00
145	0	0	0	1.928E-05	-1.679E-02	3.025E+00
146	0	0	0	1.928E-05	-1.679E-02	3.025E+00
147	0	5.51	0	1.928E-05	-1.679E-02	3.025E+00
148	0	11.34	0	1.928E-05	-1.679E-02	3.025E+00
149	0	0	0	1.928E-05	-1.679E-02	3.025E+00
150	0	0	0	1.928E-05	-1.679E-02	3.025E+00
151	0	0	0	1.928E-05	-1.679E-02	3.025E+00
152	0	0	0	1.928E-05	-1.679E-02	3.025E+00
153	0	0	0	1.928E-05	-1.679E-02	3.025E+00
154	0	0	0	1.928E-05	-1.679E-02	3.025E+00
155	0	0	0	1.928E-05	-1.679E-02	3.025E+00
156	0	0	0	1.928E-05	-1.679E-02	3.025E+00
157	0	0	0	1.928E-05	-1.679E-02	3.025E+00
158	0	0.21	0	1.928E-05	-1.679E-02	3.025E+00
159	0	30.00	0	1.928E-05	-1.679E-02	3.025E+00
160	0	26.78	0	1.928E-05	-1.679E-02	3.025E+00
161	0	20.00	0	1.928E-05	-1.679E-02	3.025E+00
162	0	20.00	0	1.928E-05	-1.679E-02	3.025E+00
163	0	4.12	0	1.928E-05	-1.679E-02	3.025E+00
164	0	0	0	1.928E-05	-1.679E-02	3.025E+00
165	0	0	0	1.928E-05	-1.679E-02	3.025E+00
166	0	0	0	1.928E-05	-1.679E-02	3.025E+00
167	0	0	0	1.928E-05	-1.679E-02	3.025E+00
168	0	0	0	1.928E-05	-1.679E-02	3.025E+00
169	0	0	0	1.928E-05	-1.679E-02	3.025E+00
170	0	0	0	1.928E-05	-1.679E-02	3.025E+00
171	0	0	0	1.928E-05	-1.679E-02	3.025E+00

172	0	0	0	1.928E-05	-1.679E-02	3.025E+00
173	0	0	0	1.928E-05	-1.679E-02	3.025E+00
174	0	0	0	1.928E-05	-1.679E-02	3.025E+00
175	0	0	0	1.928E-05	-1.679E-02	3.025E+00
176	0	0	0	1.928E-05	-1.679E-02	3.025E+00
177	0	0	0	1.928E-05	-1.679E-02	3.025E+00
178	0	0	0	1.928E-05	-1.679E-02	3.025E+00
179	0	0	0	1.928E-05	-1.679E-02	3.025E+00
180	0	0	0	1.928E-05	-1.679E-02	3.025E+00
181	0	0	0	1.928E-05	-1.679E-02	3.025E+00
182	0	0	0	1.928E-05	-1.679E-02	3.025E+00
183	0	0	0	1.928E-05	-1.679E-02	3.025E+00
184	0	20.00	0	1.928E-05	-1.679E-02	3.025E+00
185	0	20.00	0	1.928E-05	-1.679E-02	3.025E+00
186	0	11.73	0	1.928E-05	-1.679E-02	3.025E+00
187	0	0	0	1.928E-05	-1.679E-02	3.025E+00
188	0	0	0	1.928E-05	-1.679E-02	3.025E+00
189	0	0	0	1.928E-05	-1.679E-02	3.025E+00
190	0	0	0	1.928E-05	-1.679E-02	3.025E+00
191	0	0	0	1.928E-05	-1.679E-02	3.025E+00
192	0	0	0	1.928E-05	-1.679E-02	3.025E+00
193	0	0	0	1.928E-05	-1.679E-02	3.025E+00
194	0	0	0	1.928E-05	-1.679E-02	3.025E+00
195	0	0	0	1.928E-05	-1.679E-02	3.025E+00
196	0	0	0	1.928E-05	-1.679E-02	3.025E+00
197	0	0	0	1.928E-05	-1.679E-02	3.025E+00
198	0	0	0	1.928E-05	-1.679E-02	3.025E+00
199	0	0	0	1.928E-05	-1.679E-02	3.025E+00
200	0	0	0	1.928E-05	-1.679E-02	3.025E+00
201	0	0	0	1.928E-05	-1.679E-02	3.025E+00
202	0	0	0	1.928E-05	-1.679E-02	3.025E+00
203	0	0	0	1.928E-05	-1.679E-02	3.025E+00
204	0	0	0	1.928E-05	-1.679E-02	3.025E+00
205	0	0	0	1.928E-05	-1.679E-02	3.025E+00
206	0	0	0	1.928E-05	-1.679E-02	3.025E+00
207	0	0	0	1.928E-05	-1.679E-02	3.025E+00
208	0	0	0	1.928E-05	-1.679E-02	3.025E+00
209	0	0	0	1.928E-05	-1.679E-02	3.025E+00
210	0	0	0	1.928E-05	-1.679E-02	3.025E+00
211	0	0	0	1.928E-05	-1.679E-02	3.025E+00
212	0	0	0	1.928E-05	-1.679E-02	3.025E+00
213	0	0	0	1.928E-05	-1.679E-02	3.025E+00
214	0	73.41	0	1.928E-05	-1.679E-02	3.025E+00
215	0	90.00	0	1.928E-05	-1.679E-02	3.025E+00
216	27.95	81.30	0	1.928E-05	-1.679E-02	3.025E+00
217	36.74	90.00	2.80	1.928E-05	-1.679E-02	3.025E+00
218	39.29	90.00	5.59	1.928E-05	-1.679E-02	3.025E+00

219	41.44	90.00	8.39	1.928E-05	-1.679E-02	3.025E+00
220	45.57	82.41	11.19	1.928E-05	-1.679E-02	3.025E+00
221	59.52	80.00	14.30	1.928E-05	-1.679E-02	3.025E+00
222	66.99	90.00	16.03	1.928E-05	-1.679E-02	3.025E+00
223	80.22	90.00	17.30	1.928E-05	-1.679E-02	3.025E+00
224	86.41	93.88	19.72	1.928E-05	-1.679E-02	3.025E+00
225	86.53	50.94	23.18	1.928E-05	-1.679E-02	3.025E+00
226	84.46	17.02	25.27	1.928E-05	-1.679E-02	3.025E+00
227	88.54	28.60	26.91	1.928E-05	-1.679E-02	3.025E+00
228	89.29	39.83	28.89	1.928E-05	-1.679E-02	3.025E+00
229	89.29	30.00	29.43	1.928E-05	-1.679E-02	3.025E+00
230	89.29	26.69	29.50	1.928E-05	-1.679E-02	3.025E+00
231	90.16	20.00	30.49	1.928E-05	-1.679E-02	3.025E+00
232	89.92	20.00	32.02	1.928E-05	-1.679E-02	3.025E+00
233	89.29	36.06	32.91	1.928E-05	-1.679E-02	3.025E+00
234	85.86	40.00	32.55	1.928E-05	-1.679E-02	3.025E+00
235	85.51	30.00	32.26	1.928E-05	-1.679E-02	3.025E+00
236	84.42	32.75	32.65	1.928E-05	-1.679E-02	3.025E+00
237	86.48	35.68	33.50	1.928E-05	-1.679E-02	3.025E+00
238	88.55	30.00	34.96	1.928E-05	-1.679E-02	3.025E+00
239	89.29	44.93	36.44	1.928E-05	-1.679E-02	3.025E+00
240	90.90	50.00	36.95	6.428E-06	-5.597E-03	1.008E+00
241	77.27	([a])	37.02	-6.428E-06	5.597E-03	-1.008E+00
242	56.75	([a])	36.97	-1.928E-05	1.679E-02	-3.025E+00
243	50.00	([a])	36.37	-1.928E-05	1.679E-02	-3.025E+00
244	41.07	([a])	35.56	-1.928E-05	1.679E-02	-3.025E+00
245	37.38	45.18	34.72	-1.928E-05	1.679E-02	-3.025E+00
246	34.21	78.47	33.84	-1.928E-05	1.679E-02	-3.025E+00
247	32.13	80.00	33.40	-1.928E-05	1.679E-02	-3.025E+00
248	27.71	80.00	32.93	-1.928E-05	1.679E-02	-3.025E+00
249	22.64	80.00	31.98	-1.928E-05	1.679E-02	-3.025E+00
250	20.58	60.97	30.98	-1.928E-05	1.679E-02	-3.025E+00
251	16.25	27.34	29.91	-1.928E-05	1.679E-02	-3.025E+00
252	11.46	43.71	28.73	-1.928E-05	1.679E-02	-3.025E+00
253	9.02	68.95	27.34	-1.928E-05	1.679E-02	-3.025E+00
254	3.38	68.95	25.85	-1.928E-05	1.679E-02	-3.025E+00
255	1.32	44.28	24.49	-1.928E-05	1.679E-02	-3.025E+00
256	0	0	23.19	-1.928E-05	1.679E-02	-3.025E+00
257	0	0	21.87	-1.928E-05	1.679E-02	-3.025E+00
258	0	0	17.39	-1.928E-05	1.679E-02	-3.025E+00
259	0	0	12.92	-1.928E-05	1.679E-02	-3.025E+00
260	0	0	8.45	-1.928E-05	1.679E-02	-3.025E+00
261	0	0	3.97	-1.928E-05	1.679E-02	-3.025E+00
262	0	0	0	-1.928E-05	1.679E-02	-3.025E+00
263	0	24.97	0	-1.928E-05	1.679E-02	-3.025E+00
264	0	17.16	0	-1.928E-05	1.679E-02	-3.025E+00
265	0	6.20	0	-6.926E-06	5.240E-03	8.504E-01

266	0	10.00	0	5.431E-06	-6.313E-03	4.726E+00
267	0	10.00	0	1.779E-05	-1.787E-02	8.601E+00
268	0	0	0	1.779E-05	-1.787E-02	8.601E+00
269	0	0	0	1.779E-05	-1.787E-02	8.601E+00
270	0	0	0	1.779E-05	-1.787E-02	8.601E+00
271	0	0	0	1.779E-05	-1.787E-02	8.601E+00
272	0	0	0	1.779E-05	-1.787E-02	8.601E+00
273	0	0	0	1.779E-05	-1.787E-02	8.601E+00
274	0	0	0	1.779E-05	-1.787E-02	8.601E+00
275	0	0	0	1.779E-05	-1.787E-02	8.601E+00
276	0	0	0	1.779E-05	-1.787E-02	8.601E+00
277	0	0	0	1.779E-05	-1.787E-02	8.601E+00
278	0	0	0	1.779E-05	-1.787E-02	8.601E+00
279	0	0	0	1.779E-05	-1.787E-02	8.601E+00
280	0	0	0	1.779E-05	-1.787E-02	8.601E+00
281	0	0	0	1.779E-05	-1.787E-02	8.601E+00
282	0	0	0	1.779E-05	-1.787E-02	8.601E+00
283	0	0	0	1.779E-05	-1.787E-02	8.601E+00
284	0	0	0	1.779E-05	-1.787E-02	8.601E+00
285	0	0	0	1.779E-05	-1.787E-02	8.601E+00
286	0	0	0	1.779E-05	-1.787E-02	8.601E+00
287	0	0	0	1.779E-05	-1.787E-02	8.601E+00
288	0	0	0	1.779E-05	-1.787E-02	8.601E+00
289	0	0	0	1.779E-05	-1.787E-02	8.601E+00
290	0	0	0	1.779E-05	-1.787E-02	8.601E+00
291	0	0	0	1.779E-05	-1.787E-02	8.601E+00
292	0	0	0	1.779E-05	-1.787E-02	8.601E+00
293	0	0	0	1.779E-05	-1.787E-02	8.601E+00
294	0	0	0	1.779E-05	-1.787E-02	8.601E+00
295	0	0	0	1.779E-05	-1.787E-02	8.601E+00
296	0	0	0	1.779E-05	-1.787E-02	8.601E+00
297	0	0	0	1.779E-05	-1.787E-02	8.601E+00
298	0	0	0	1.779E-05	-1.787E-02	8.601E+00
299	0	0	0	1.779E-05	-1.787E-02	8.601E+00
300	0	0	0	1.779E-05	-1.787E-02	8.601E+00
301	0	0	0	1.779E-05	-1.787E-02	8.601E+00
302	0	0	0	1.779E-05	-1.787E-02	8.601E+00
303	0	0	0	1.779E-05	-1.787E-02	8.601E+00
304	0	0	0	1.779E-05	-1.787E-02	8.601E+00
305	0	0	0	1.779E-05	-1.787E-02	8.601E+00
306	0	0	0	1.779E-05	-1.787E-02	8.601E+00
307	0	0	0	1.779E-05	-1.787E-02	8.601E+00
308	0	0	0	1.779E-05	-1.787E-02	8.601E+00
309	0	0	0	1.779E-05	-1.787E-02	8.601E+00
310	0	0	0	1.779E-05	-1.787E-02	8.601E+00
311	0	0	0	1.779E-05	-1.787E-02	8.601E+00
312	0	0	0	1.779E-05	-1.787E-02	8.601E+00

313	0	0	0	1.779E-05	-1.787E-02	8.601E+00
314	0	0	0	1.779E-05	-1.787E-02	8.601E+00
315	0	0	0	1.779E-05	-1.787E-02	8.601E+00
316	0	0	0	1.779E-05	-1.787E-02	8.601E+00
317	0	0	0	1.779E-05	-1.787E-02	8.601E+00
318	0	0	0	1.779E-05	-1.787E-02	8.601E+00
319	0	0	0	1.779E-05	-1.787E-02	8.601E+00
320	0	0	0	1.779E-05	-1.787E-02	8.601E+00
321	0	15.55	0	1.779E-05	-1.787E-02	8.601E+00
322	0	20.00	0	1.779E-05	-1.787E-02	8.601E+00
323	21.59	19.08	1.20	1.779E-05	-1.787E-02	8.601E+00
324	20.54	10.00	2.18	1.779E-05	-1.787E-02	8.601E+00
325	10.32	1.86	2.88	1.779E-05	-1.787E-02	8.601E+00
326	6.13	([a])	3.00	1.779E-05	-1.787E-02	8.601E+00
327	5.36	([a])	2.28	1.779E-05	-1.787E-02	8.601E+00
328	0.64	([a])	0	1.779E-05	-1.787E-02	8.601E+00
329	0	0	0	1.779E-05	-1.787E-02	8.601E+00
330	0	0	0	1.779E-05	-1.787E-02	8.601E+00
331	0	0	0	1.779E-05	-1.787E-02	8.601E+00
332	0	0	0	1.779E-05	-1.787E-02	8.601E+00
333	0	0	0	1.779E-05	-1.787E-02	8.601E+00
334	0	0	0	1.779E-05	-1.787E-02	8.601E+00
335	0	0	0	1.779E-05	-1.787E-02	8.601E+00
336	0	0	0	1.779E-05	-1.787E-02	8.601E+00
337	0	0	0	1.779E-05	-1.787E-02	8.601E+00
338	0	0	0	1.779E-05	-1.787E-02	8.601E+00
339	0	0	0	1.779E-05	-1.787E-02	8.601E+00
340	0	0	0	1.779E-05	-1.787E-02	8.601E+00
341	0	0	0	1.779E-05	-1.787E-02	8.601E+00
342	0	0	0	1.779E-05	-1.787E-02	8.601E+00
343	0	0	0	1.779E-05	-1.787E-02	8.601E+00
344	0	0	0	1.779E-05	-1.787E-02	8.601E+00
345	0	0	0	1.779E-05	-1.787E-02	8.601E+00
346	0	0	0	1.779E-05	-1.787E-02	8.601E+00
347	0	0	0	1.779E-05	-1.787E-02	8.601E+00
348	0	0	0	1.779E-05	-1.787E-02	8.601E+00
349	0	0	0	1.779E-05	-1.787E-02	8.601E+00
350	0	0	0	1.779E-05	-1.787E-02	8.601E+00
351	0	0	0	1.779E-05	-1.787E-02	8.601E+00
352	0	0	0	1.779E-05	-1.787E-02	8.601E+00
353	0	0	0	1.779E-05	-1.787E-02	8.601E+00
354	0	0	0	1.779E-05	-1.787E-02	8.601E+00
355	0	0	0	1.779E-05	-1.787E-02	8.601E+00
356	0	0	0	1.779E-05	-1.787E-02	8.601E+00
357	0	0	0	1.779E-05	-1.787E-02	8.601E+00
358	0	0	0	1.779E-05	-1.787E-02	8.601E+00
359	0	0	0	1.779E-05	-1.787E-02	8.601E+00

360	0	0	0	1.779E-05	-1.787E-02	8.601E+00
361	0	0	0	1.779E-05	-1.787E-02	8.601E+00
362	0	0	0	1.779E-05	-1.787E-02	8.601E+00
363	0	0	0	1.779E-05	-1.787E-02	8.601E+00
364	0	0	0	1.779E-05	-1.787E-02	8.601E+00
365	0	0	0	1.779E-05	-1.787E-02	8.601E+00
366	0	0	0	1.779E-05	-1.787E-02	8.601E+00
367	0	0	0	1.779E-05	-1.787E-02	8.601E+00
368	0	0	0	1.779E-05	-1.787E-02	8.601E+00
369	0	0	0	1.779E-05	-1.787E-02	8.601E+00
370	0	0	0	1.779E-05	-1.787E-02	8.601E+00
371	0	0	0	1.779E-05	-1.787E-02	8.601E+00
372	0	0	0	1.779E-05	-1.787E-02	8.601E+00
373	0	0	0	1.779E-05	-1.787E-02	8.601E+00
374	0	0	0	1.779E-05	-1.787E-02	8.601E+00
375	0	0	0	2.077E-05	-1.947E-02	7.751E+00
376	0	0	0	2.376E-05	-2.108E-02	6.900E+00
377	0	29.59	0	2.674E-05	-2.269E-02	6.050E+00
378	-1.34	87.46	0	2.674E-05	-2.269E-02	6.050E+00
379	7.93	100.00	1.15	2.674E-05	-2.269E-02	6.050E+00
380	41.11	100.00	3.82	2.674E-05	-2.269E-02	6.050E+00
381	68.65	100.00	6.11	2.674E-05	-2.269E-02	6.050E+00
382	71.43	100.00	10.00	2.674E-05	-2.269E-02	6.050E+00
383	73.34	94.64	14.52	2.674E-05	-2.269E-02	6.050E+00
384	76.24	83.07	18.09	2.674E-05	-2.269E-02	6.050E+00
385	78.30	88.51	20.64	2.674E-05	-2.269E-02	6.050E+00
386	82.14	79.83	22.36	2.674E-05	-2.269E-02	6.050E+00
387	82.14	61.66	23.70	2.674E-05	-2.269E-02	6.050E+00
388	84.45	66.77	24.80	2.674E-05	-2.269E-02	6.050E+00
389	91.86	60.00	25.26	2.674E-05	-2.269E-02	6.050E+00
390	94.64	72.76	25.44	2.674E-05	-2.269E-02	6.050E+00
391	97.48	8.43	25.57	2.674E-05	-2.269E-02	6.050E+00
392	99.92	([a])	25.79	2.674E-05	-2.269E-02	6.050E+00
393	73.21	([a])	25.80	2.674E-05	-2.269E-02	6.050E+00
394	70.83	([a])	24.98	2.674E-05	-2.269E-02	6.050E+00
395	63.53	([a])	23.70	2.674E-05	-2.269E-02	6.050E+00
396	61.46	([a])	22.23	2.674E-05	-2.269E-02	6.050E+00
397	69.96	49.17	20.51	2.674E-05	-2.269E-02	6.050E+00
398	73.21	70.00	18.44	2.674E-05	-2.269E-02	6.050E+00
399	72.01	69.46	18.19	2.674E-05	-2.269E-02	6.050E+00
400	82.90	60.00	21.27	2.674E-05	-2.269E-02	6.050E+00
401	87.04	60.00	23.53	2.674E-05	-2.269E-02	6.050E+00
402	88.35	60.00	23.88	2.674E-05	-2.269E-02	6.050E+00
403	89.95	60.00	24.03	2.674E-05	-2.269E-02	6.050E+00
404	92.57	43.17	24.17	2.228E-05	-1.969E-02	5.457E+00
405	92.86	10.04	24.30	1.781E-05	-1.670E-02	4.864E+00
406	71.98	20.00	24.09	1.335E-05	-1.370E-02	4.271E+00

407	74.44	20.00	24.97	1.335E-05	-1.370E-02	4.271E+00
408	72.38	15.29	25.32	4.449E-06	-4.566E-03	1.424E+00
409	71.43	10.00	24.15	-4.449E-06	4.566E-03	-1.424E+00
410	68.63	([a])	23.14	-1.335E-05	1.370E-02	-4.271E+00
411	66.17	([a])	22.38	-1.335E-05	1.370E-02	-4.271E+00
412	63.93	([a])	21.58	-1.335E-05	1.370E-02	-4.271E+00
413	63.02	([a])	20.06	-1.335E-05	1.370E-02	-4.271E+00
414	69.64	([a])	18.29	-1.335E-05	1.370E-02	-4.271E+00
415	71.69	1.45	16.16	-1.335E-05	1.370E-02	-4.271E+00
416	71.91	17.30	13.44	-1.335E-05	1.370E-02	-4.271E+00
417	69.85	11.13	11.00	-1.335E-05	1.370E-02	-4.271E+00
418	70.04	19.55	10.13	-7.827E-06	7.759E-03	-3.711E+00
419	75.32	24.16	11.50	-2.306E-06	1.819E-03	-3.150E+00
420	64.43	80.00	13.65	3.214E-06	-4.121E-03	-2.590E+00
421	70.63	74.83	15.03	3.214E-06	-4.121E-03	-2.590E+00
422	80.44	16.04	17.50	3.214E-06	-4.121E-03	-2.590E+00
423	66.11	([a])	20.79	3.214E-06	-4.121E-03	-2.590E+00
424	60.73	([a])	22.92	3.214E-06	-4.121E-03	-2.590E+00
425	61.19	([a])	23.23	3.214E-06	-4.121E-03	-2.590E+00
426	53.03	([a])	22.42	3.214E-06	-4.121E-03	-2.590E+00
427	56.73	([a])	21.51	3.214E-06	-4.121E-03	-2.590E+00
428	62.50	2.38	20.46	3.214E-06	-4.121E-03	-2.590E+00
429	65.27	17.76	19.25	3.214E-06	-4.121E-03	-2.590E+00
430	64.40	([a])	19.61	3.214E-06	-4.121E-03	-2.590E+00
431	60.06	([a])	21.94	3.214E-06	-4.121E-03	-2.590E+00
432	32.17	([a])	22.99	3.214E-06	-4.121E-03	-2.590E+00
433	18.53	([a])	22.51	3.214E-06	-4.121E-03	-2.590E+00
434	10.26	([a])	21.98	3.214E-06	-4.121E-03	-2.590E+00
435	-1.87	0.0	21.39	3.214E-06	-4.121E-03	-2.590E+00
436	-0.65	0.0	20.73	3.214E-06	-4.121E-03	-2.590E+00
437	7.65	60.00	20.38	3.214E-06	-4.121E-03	-2.590E+00
438	27.28	61.93	20.38	3.214E-06	-4.121E-03	-2.590E+00
439	59.91	63.00	20.78	3.214E-06	-4.121E-03	-2.590E+00
440	76.81	39.85	21.84	3.214E-06	-4.121E-03	-2.590E+00
441	79.76	30.00	23.60	3.214E-06	-4.121E-03	-2.590E+00
442	81.82	30.00	25.31	3.214E-06	-4.121E-03	-2.590E+00
443	87.39	10.40	26.41	3.214E-06	-4.121E-03	-2.590E+00
444	87.26	1.37	27.29	3.214E-06	-4.121E-03	-2.590E+00
445	85.71	10.00	27.97	3.214E-06	-4.121E-03	-2.590E+00
446	85.71	0.96	28.20	3.214E-06	-4.121E-03	-2.590E+00
447	85.71	([a])	28.31	3.214E-06	-4.121E-03	-2.590E+00
448	76.13	28.34	29.22	3.214E-06	-4.121E-03	-2.590E+00
449	78.16	30.76	29.63	3.214E-06	-4.121E-03	-2.590E+00
450	76.93	29.18	29.64	3.214E-06	-4.121E-03	-2.590E+00
451	78.57	20.00	30.67	3.214E-06	-4.121E-03	-2.590E+00
452	77.87	20.00	32.17	3.214E-06	-4.121E-03	-2.590E+00
453	76.79	20.00	33.10	3.214E-06	-4.121E-03	-2.590E+00

454	78.05	20.00	33.30	3.214E-06	-4.121E-03	-2.590E+00
455	78.57	11.32	33.15	3.214E-06	-4.121E-03	-2.590E+00
456	69.50	(a)	32.66	3.214E-06	-4.121E-03	-2.590E+00
457	64.29	(a)	31.98	3.214E-06	-4.121E-03	-2.590E+00
458	63.68	(a)	31.48	3.214E-06	-4.121E-03	-2.590E+00
459	62.50	0.04	31.39	3.214E-06	-4.121E-03	-2.590E+00
460	62.50	(a)	31.30	3.214E-06	-4.121E-03	-2.590E+00
461	66.86	(a)	32.20	3.214E-06	-4.121E-03	-2.590E+00
462	66.13	(a)	33.13	3.214E-06	-4.121E-03	-2.590E+00
463	60.48	(a)	33.13	3.214E-06	-4.121E-03	-2.590E+00
464	58.93	(a)	33.14	3.214E-06	-4.121E-03	-2.590E+00
465	57.35	(a)	33.14	3.214E-06	-4.121E-03	-2.590E+00
466	55.36	(a)	33.15	3.214E-06	-4.121E-03	-2.590E+00
467	49.95	(a)	33.16	3.214E-06	-4.121E-03	-2.590E+00
468	48.21	(a)	33.16	3.214E-06	-4.121E-03	-2.590E+00
469	59.31	(a)	33.17	2.308E-06	-3.167E-03	-2.524E+00
470	67.15	70.00	33.30	1.401E-06	-2.214E-03	-2.458E+00
471	76.79	54.53	33.56	4.942E-07	-1.260E-03	-2.391E+00
472	76.79	24.56	35.59	4.942E-07	-1.260E-03	-2.391E+00
473	79.29	(a)	39.04	4.942E-07	-1.260E-03	-2.391E+00
474	80.36	(a)	41.83	4.942E-07	-1.260E-03	-2.391E+00
475	94.18	(a)	43.06	4.942E-07	-1.260E-03	-2.391E+00
476	66.07	(a)	43.13	4.942E-07	-1.260E-03	-2.391E+00
477	65.48	(a)	43.21	4.942E-07	-1.260E-03	-2.391E+00
478	63.41	10.00	43.29	4.942E-07	-1.260E-03	-2.391E+00
479	68.27	29.38	43.37	4.942E-07	-1.260E-03	-2.391E+00
480	72.87	40.00	44.00	4.942E-07	-1.260E-03	-2.391E+00
481	69.79	30.39	45.13	4.942E-07	-1.260E-03	-2.391E+00
482	66.19	26.46	47.02	4.942E-07	-1.260E-03	-2.391E+00
483	80.36	0.0	49.20	4.942E-07	-1.260E-03	-2.391E+00
484	81.13	0.0	49.92	4.942E-07	-1.260E-03	-2.391E+00
485	82.14	(a)	50.36	4.942E-07	-1.260E-03	-2.391E+00
486	83.48	(a)	51.52	4.942E-07	-1.260E-03	-2.391E+00
487	83.93	(a)	52.11	4.942E-07	-1.260E-03	-2.391E+00
488	84.04	(a)	52.12	4.942E-07	-1.260E-03	-2.391E+00
489	79.43	(a)	52.14	4.942E-07	-1.260E-03	-2.391E+00
490	56.47	(a)	52.16	4.942E-07	-1.260E-03	-2.391E+00
491	55.36	(a)	52.18	4.942E-07	-1.260E-03	-2.391E+00
492	44.23	45.37	52.20	4.942E-07	-1.260E-03	-2.391E+00
493	46.87	86.99	52.22	4.942E-07	-1.260E-03	-2.391E+00
494	57.14	90.00	52.16	4.942E-07	-1.260E-03	-2.391E+00
495	58.03	90.00	52.53	4.942E-07	-1.260E-03	-2.391E+00
496	64.22	93.22	52.98	4.942E-07	-1.260E-03	-2.391E+00
497	70.42	95.21	53.65	4.942E-07	-1.260E-03	-2.391E+00
498	73.21	83.64	54.77	4.942E-07	-1.260E-03	-2.391E+00
499	77.46	80.00	55.14	4.942E-07	-1.260E-03	-2.391E+00
500	83.67	80.00	54.57	4.942E-07	-1.260E-03	-2.391E+00

501	84.71	80.00	53.63	4.942E-07	-1.260E-03	-2.391E+00
502	92.50	80.00	52.70	4.942E-07	-1.260E-03	-2.391E+00
503	90.38	41.89	52.03	4.942E-07	-1.260E-03	-2.391E+00
504	85.25	24.85	51.66	4.942E-07	-1.260E-03	-2.391E+00
505	87.50	50.00	51.42	4.942E-07	-1.260E-03	-2.391E+00
506	89.10	50.00	51.28	4.942E-07	-1.260E-03	-2.391E+00
507	94.83	46.82	51.13	4.942E-07	-1.260E-03	-2.391E+00
508	98.96	([a])	51.53	4.942E-07	-1.260E-03	-2.391E+00
509	87.99	([a])	52.04	1.647E-07	-4.200E-04	-7.972E-01
510	63.35	([a])	51.32	-1.647E-07	4.200E-04	7.972E-01
511	60.06	([a])	49.20	-4.942E-07	1.260E-03	2.391E+00
512	54.43	([a])	46.43	-4.942E-07	1.260E-03	2.391E+00
513	42.88	([a])	43.58	-4.942E-07	1.260E-03	2.391E+00
514	46.71	([a])	40.65	-4.942E-07	1.260E-03	2.391E+00
515	48.21	([a])	37.62	-4.942E-07	1.260E-03	2.391E+00
516	58.28	([a])	34.62	-4.942E-07	1.260E-03	2.391E+00
517	69.64	([a])	31.62	-4.942E-07	1.260E-03	2.391E+00
518	51.44	([a])	28.44	-4.942E-07	1.260E-03	2.391E+00
519	38.02	([a])	25.01	-4.942E-07	1.260E-03	2.391E+00
520	34.65	([a])	21.38	-4.942E-07	1.260E-03	2.391E+00
521	19.97	([a])	17.39	-4.942E-07	1.260E-03	2.391E+00
522	3.14	([a])	12.76	-4.942E-07	1.260E-03	2.391E+00
523	0	0	6.14	-4.942E-07	1.260E-03	2.391E+00
524	-1.30	36.39	0	-4.942E-07	1.260E-03	2.391E+00
525	-0.21	5.75	0	-4.942E-07	1.260E-03	2.391E+00
526	0	0	0	-4.942E-07	1.260E-03	2.391E+00
527	0	0	0	-4.942E-07	1.260E-03	2.391E+00
528	0	0	0	-4.942E-07	1.260E-03	2.391E+00
529	0	0	0	-4.942E-07	1.260E-03	2.391E+00
530	0	0	0	7.439E-06	-5.768E-03	1.455E+00
531	0	0	0	1.537E-05	-1.280E-02	5.195E-01
532	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
533	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
534	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
535	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
536	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
537	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
538	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
539	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
540	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
541	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
542	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
543	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
544	0	([a])	0	2.331E-05	-1.982E-02	-4.165E-01
545	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
546	-0.67	0	0	2.331E-05	-1.982E-02	-4.165E-01
547	-0.50	0	0	2.331E-05	-1.982E-02	-4.165E-01

548	3.57	([a])	0	2.331E-05	-1.982E-02	-4.165E-01
549	0.61	([a])	0	2.331E-05	-1.982E-02	-4.165E-01
550	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
551	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
552	0	2.60	0	2.331E-05	-1.982E-02	-4.165E-01
553	0	20.00	0	2.331E-05	-1.982E-02	-4.165E-01
554	0	20.00	0	2.331E-05	-1.982E-02	-4.165E-01
555	0	7.96	0	2.331E-05	-1.982E-02	-4.165E-01
556	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
557	0	0	0	2.331E-05	-1.982E-02	-4.165E-01
558	0	78.53	0	2.331E-05	-1.982E-02	-4.165E-01
559	1.65	60.00	0	2.331E-05	-1.982E-02	-4.165E-01
560	9.91	63.88	2.80	2.331E-05	-1.982E-02	-4.165E-01
561	14.29	70.00	6.02	2.331E-05	-1.982E-02	-4.165E-01
562	26.83	70.00	8.57	2.331E-05	-1.982E-02	-4.165E-01
563	38.29	70.00	11.07	2.331E-05	-1.982E-02	-4.165E-01
564	50.09	70.00	13.68	2.331E-05	-1.982E-02	-4.165E-01
565	56.60	66.52	16.52	2.331E-05	-1.982E-02	-4.165E-01
566	63.09	59.94	19.38	2.331E-05	-1.982E-02	-4.165E-01
567	65.16	80.00	21.91	2.331E-05	-1.982E-02	-4.165E-01
568	69.53	86.46	24.34	2.331E-05	-1.982E-02	-4.165E-01
569	78.60	90.00	27.02	2.331E-05	-1.982E-02	-4.165E-01
570	80.36	90.00	29.41	2.331E-05	-1.982E-02	-4.165E-01
571	82.35	100.00	31.57	2.331E-05	-1.982E-02	-4.165E-01
572	83.93	100.00	33.52	2.331E-05	-1.982E-02	-4.165E-01
573	84.70	100.00	35.75	2.331E-05	-1.982E-02	-4.165E-01
574	85.71	100.00	38.34	2.331E-05	-1.982E-02	-4.165E-01
575	87.04	100.00	40.83	2.331E-05	-1.982E-02	-4.165E-01
576	97.18	100.00	43.37	2.331E-05	-1.982E-02	-4.165E-01
577	98.21	83.92	44.90	2.331E-05	-1.982E-02	-4.165E-01
578	93.54	([a])	45.32	7.769E-06	-6.608E-03	-1.388E-01
579	78.13	([a])	45.25	-7.769E-06	6.608E-03	1.388E-01
580	80.36	0	44.24	-2.331E-05	1.982E-02	4.165E-01
581	81.59	([a])	42.61	-2.331E-05	1.982E-02	4.165E-01
582	73.07	([a])	40.93	-2.331E-05	1.982E-02	4.165E-01
583	58.92	([a])	39.03	-2.331E-05	1.982E-02	4.165E-01
584	56.86	([a])	36.96	-2.331E-05	1.982E-02	4.165E-01
585	54.22	([a])	34.84	-2.331E-05	1.982E-02	4.165E-01
586	50.94	([a])	32.66	-2.331E-05	1.982E-02	4.165E-01
587	47.74	([a])	30.40	-2.331E-05	1.982E-02	4.165E-01
588	45.02	([a])	28.04	-2.331E-05	1.982E-02	4.165E-01
589	39.56	([a])	25.57	-2.331E-05	1.982E-02	4.165E-01
590	33.55	37.91	22.94	-2.331E-05	1.982E-02	4.165E-01
591	29.89	20.00	20.11	-2.331E-05	1.982E-02	4.165E-01
592	27.82	20.00	18.17	-2.331E-05	1.982E-02	4.165E-01
593	25.76	20.00	17.20	-2.331E-05	1.982E-02	4.165E-01
594	19.76	20.00	16.06	-2.331E-05	1.982E-02	4.165E-01

595	8.31	([a])	14.93	-2.331E-05	1.982E-02	4.165E-01
596	0	0	13.78	-2.331E-05	1.982E-02	4.165E-01
597	0	0	10.72	-2.331E-05	1.982E-02	4.165E-01
598	0	0	6.24	-2.331E-05	1.982E-02	4.165E-01
599	0	0	1.77	-2.331E-05	1.982E-02	4.165E-01
600	0	0	0	-2.331E-05	1.982E-02	4.165E-01
601	0	0	0	-2.331E-05	1.982E-02	4.165E-01
602	0	0	0	-2.331E-05	1.982E-02	4.165E-01
603	0	0	0	-2.331E-05	1.982E-02	4.165E-01
604	0	0	0	-2.331E-05	1.982E-02	4.165E-01
605	0	0	0	-2.331E-05	1.982E-02	4.165E-01
606	2.25	6.30	0	-2.331E-05	1.982E-02	4.165E-01
607	9.20	17.87	0	-1.029E-05	8.762E-03	1.296E+00
608	12.40	20.00	0.75	2.727E-06	-2.302E-03	2.176E+00
609	18.04	20.00	1.90	1.574E-05	-1.337E-02	3.055E+00
610	21.49	22.59	3.81	1.574E-05	-1.337E-02	3.055E+00
611	29.76	17.50	5.91	1.574E-05	-1.337E-02	3.055E+00
612	35.98	([a])	7.92	1.574E-05	-1.337E-02	3.055E+00
613	42.72	([a])	9.86	1.574E-05	-1.337E-02	3.055E+00
614	58.93	7.78	9.37	1.574E-05	-1.337E-02	3.055E+00
615	60.71	10.93	5.32	1.574E-05	-1.337E-02	3.055E+00
616	60.35	32.04	1.45	1.574E-05	-1.337E-02	3.055E+00
617	58.93	40.00	4.28	1.574E-05	-1.337E-02	3.055E+00
618	59.86	40.00	6.78	1.574E-05	-1.337E-02	3.055E+00
619	60.71	40.00	9.12	1.574E-05	-1.337E-02	3.055E+00
620	60.71	48.33	11.69	1.574E-05	-1.337E-02	3.055E+00
621	67.79	99.53	14.17	1.574E-05	-1.337E-02	3.055E+00
622	69.64	100.00	16.35	1.574E-05	-1.337E-02	3.055E+00
623	69.64	100.00	19.18	1.574E-05	-1.337E-02	3.055E+00
624	68.81	100.00	22.35	1.574E-05	-1.337E-02	3.055E+00
625	67.86	100.00	25.17	1.574E-05	-1.337E-02	3.055E+00
626	67.86	100.00	27.60	1.574E-05	-1.337E-02	3.055E+00
627	67.86	100.00	29.72	1.574E-05	-1.337E-02	3.055E+00
628	67.53	100.00	31.71	1.574E-05	-1.337E-02	3.055E+00
629	65.18	97.50	33.60	1.574E-05	-1.337E-02	3.055E+00
630	68.58	90.00	35.39	1.574E-05	-1.337E-02	3.055E+00
631	71.66	90.00	37.08	1.574E-05	-1.337E-02	3.055E+00
632	74.50	90.00	38.83	1.574E-05	-1.337E-02	3.055E+00
633	75.00	98.79	40.28	1.574E-05	-1.337E-02	3.055E+00
634	75.00	100.00	41.29	1.574E-05	-1.337E-02	3.055E+00
635	74.65	100.00	42.31	1.574E-05	-1.337E-02	3.055E+00
636	73.21	100.00	42.90	1.574E-05	-1.337E-02	3.055E+00
637	74.13	94.91	42.94	1.574E-05	-1.337E-02	3.055E+00
638	77.38	90.00	42.83	1.574E-05	-1.337E-02	3.055E+00
639	80.04	90.00	42.74	1.574E-05	-1.337E-02	3.055E+00
640	80.36	99.81	42.65	1.574E-05	-1.337E-02	3.055E+00
641	79.87	100.00	42.56	1.574E-05	-1.337E-02	3.055E+00

642	76.79	100.00	42.88	1.574E-05	-1.337E-02	3.055E+00
643	76.79	95.47	43.29	1.574E-05	-1.337E-02	3.055E+00
644	77.88	90.00	43.30	1.574E-05	-1.337E-02	3.055E+00
645	78.57	90.00	43.37	1.574E-05	-1.337E-02	3.055E+00
646	78.57	80.74	43.79	1.574E-05	-1.337E-02	3.055E+00
647	78.57	79.17	44.07	1.574E-05	-1.337E-02	3.055E+00
648	78.57	77.21	44.01	1.574E-05	-1.337E-02	3.055E+00
649	78.57	100.00	44.41	1.046E-05	-8.994E-03	2.433E+00
650	78.57	94.45	44.85	5.183E-06	-4.623E-03	1.811E+00
651	78.57	90.00	44.83	-9.733E-08	-2.513E-04	1.190E+00
652	78.57	90.00	44.78	-9.733E-08	-2.513E-04	1.190E+00
653	80.36	90.00	45.00	-9.733E-08	-2.513E-04	1.190E+00
654	80.03	90.00	45.80	-9.733E-08	-2.513E-04	1.190E+00
655	79.18	90.00	46.46	-9.733E-08	-2.513E-04	1.190E+00
656	80.36	90.00	46.54	-9.733E-08	-2.513E-04	1.190E+00
657	80.36	90.00	46.12	-9.733E-08	-2.513E-04	1.190E+00
658	81.81	81.86	45.94	-9.733E-08	-2.513E-04	1.190E+00
659	82.14	80.00	45.81	-9.733E-08	-2.513E-04	1.190E+00
660	80.36	81.29	45.45	-9.733E-08	-2.513E-04	1.190E+00
661	79.85	92.86	45.81	-9.733E-08	-2.513E-04	1.190E+00
662	77.78	100.00	46.26	-9.733E-08	-2.513E-04	1.190E+00
663	76.79	100.00	46.32	-9.733E-08	-2.513E-04	1.190E+00
664	76.79	100.00	46.28	-9.733E-08	-2.513E-04	1.190E+00
665	80.05	100.00	46.46	-9.733E-08	-2.513E-04	1.190E+00
666	80.36	99.27	46.92	-9.733E-08	-2.513E-04	1.190E+00
667	80.77	90.00	47.16	-9.733E-08	-2.513E-04	1.190E+00
668	82.84	90.00	47.58	-9.733E-08	-2.513E-04	1.190E+00
669	84.90	90.00	48.04	-9.733E-08	-2.513E-04	1.190E+00
670	89.48	82.97	48.05	-9.733E-08	-2.513E-04	1.190E+00
671	91.07	80.00	48.02	-9.733E-08	-2.513E-04	1.190E+00
672	91.07	70.18	48.00	-9.733E-08	-2.513E-04	1.190E+00
673	91.07	80.00	47.97	-9.733E-08	-2.513E-04	1.190E+00
674	86.91	50.07	47.95	-9.733E-08	-2.513E-04	1.190E+00
675	77.70	([a])	47.95	-9.733E-08	-2.513E-04	1.190E+00
676	76.79	([a])	48.86	-9.733E-08	-2.513E-04	1.190E+00
677	65.29	22.19	49.92	-9.733E-08	-2.513E-04	1.190E+00
678	67.65	39.62	50.26	-9.733E-08	-2.513E-04	1.190E+00
679	67.64	48.80	50.18	-9.733E-08	-2.513E-04	1.190E+00
680	67.06	37.23	49.91	-9.733E-08	-2.513E-04	1.190E+00
681	69.64	34.34	49.90	-9.733E-08	-2.513E-04	1.190E+00
682	71.76	40.00	49.88	-9.733E-08	-2.513E-04	1.190E+00
683	69.21	47.49	49.87	-9.733E-08	-2.513E-04	1.190E+00
684	72.71	50.00	49.86	-9.733E-08	-2.513E-04	1.190E+00
685	73.33	39.36	49.85	-9.733E-08	-2.513E-04	1.190E+00
686	75.00	27.79	49.83	-9.733E-08	-2.513E-04	1.190E+00
687	75.00	16.21	49.82	-9.733E-08	-2.513E-04	1.190E+00
688	75.00	15.36	49.67	-9.733E-08	-2.513E-04	1.190E+00

689	76.24	26.93	49.60	-9.733E-08	-2.513E-04	1.190E+00
690	76.79	30.00	50.23	-9.733E-08	-2.513E-04	1.190E+00
691	76.79	30.08	50.78	-9.733E-08	-2.513E-04	1.190E+00
692	76.49	40.00	50.77	-9.733E-08	-2.513E-04	1.190E+00
693	75.58	40.00	50.76	-9.733E-08	-2.513E-04	1.190E+00
694	76.79	35.20	50.64	-9.733E-08	-2.513E-04	1.190E+00
695	77.93	30.00	50.14	-9.733E-08	-2.513E-04	1.190E+00
696	78.57	22.05	49.74	-9.733E-08	-2.513E-04	1.190E+00
697	76.87	([a])	50.07	-9.733E-08	-2.513E-04	1.190E+00
698	74.80	([a])	50.56	-9.733E-08	-2.513E-04	1.190E+00
699	72.74	([a])	50.73	-2.744E-06	1.973E-03	3.071E-01
700	72.95	([a])	50.76	-5.391E-06	4.198E-03	-5.755E-01
701	76.04	([a])	50.79	-8.038E-06	6.423E-03	-1.458E+00
702	75.46	([a])	50.82	-8.038E-06	6.423E-03	-1.458E+00
703	73.40	([a])	50.85	-8.038E-06	6.423E-03	-1.458E+00
704	71.33	([a])	50.88	-8.038E-06	6.423E-03	-1.458E+00
705	69.27	([a])	50.91	-8.038E-06	6.423E-03	-1.458E+00
706	67.86	6.31	50.94	-8.038E-06	6.423E-03	-1.458E+00
707	70.68	0	50.98	-8.038E-06	6.423E-03	-1.458E+00
708	67.11	27.36	51.00	-8.038E-06	6.423E-03	-1.458E+00
709	64.29	40.00	51.03	-8.038E-06	6.423E-03	-1.458E+00
710	64.29	40.00	51.04	-8.038E-06	6.423E-03	-1.458E+00
711	66.07	38.44	51.05	-8.038E-06	6.423E-03	-1.458E+00
712	66.07	30.00	51.19	-8.038E-06	6.423E-03	-1.458E+00
713	66.07	30.00	51.69	-8.038E-06	6.423E-03	-1.458E+00
714	66.07	36.28	52.35	-8.038E-06	6.423E-03	-1.458E+00
715	64.67	47.86	52.85	-8.038E-06	6.423E-03	-1.458E+00
716	60.92	59.43	53.06	-8.038E-06	6.423E-03	-1.458E+00
717	65.89	50.00	53.07	-8.038E-06	6.423E-03	-1.458E+00
718	64.75	50.00	53.06	-8.038E-06	6.423E-03	-1.458E+00
719	66.07	45.85	53.06	-8.038E-06	6.423E-03	-1.458E+00
720	65.04	57.18	53.05	-8.038E-06	6.423E-03	-1.458E+00
721	68.20	62.70	53.05	-8.038E-06	6.423E-03	-1.458E+00
722	72.81	60.00	53.05	-8.038E-06	6.423E-03	-1.458E+00
723	71.59	60.00	53.04	-8.038E-06	6.423E-03	-1.458E+00
724	74.64	60.00	53.03	-6.308E-06	4.994E-03	-7.637E-01
725	74.50	56.40	53.02	-4.577E-06	3.565E-03	-6.931E-02
726	76.79	50.00	53.24	-2.847E-06	2.136E-03	6.251E-01
727	77.99	50.00	53.73	-2.847E-06	2.136E-03	6.251E-01
728	77.09	50.00	53.98	-2.847E-06	2.136E-03	6.251E-01
729	76.79	40.11	53.98	-2.847E-06	2.136E-03	6.251E-01
730	78.83	61.47	53.98	-2.847E-06	2.136E-03	6.251E-01
731	79.27	63.92	53.98	-2.847E-06	2.136E-03	6.251E-01
732	77.61	50.00	53.97	-2.847E-06	2.136E-03	6.251E-01
733	77.46	50.00	53.95	-2.847E-06	2.136E-03	6.251E-01
734	78.17	42.24	53.95	-2.847E-06	2.136E-03	6.251E-01
735	78.57	49.34	53.94	-2.847E-06	2.136E-03	6.251E-01

736	76.79	50.91	53.94	-2.847E-06	2.136E-03	6.251E-01
737	76.79	67.45	53.94	-2.847E-06	2.136E-03	6.251E-01
738	76.79	81.88	54.15	-2.847E-06	2.136E-03	6.251E-01
739	77.79	70.00	54.65	-2.847E-06	2.136E-03	6.251E-01
740	79.86	77.21	54.92	-2.847E-06	2.136E-03	6.251E-01
741	81.93	88.78	54.90	-2.847E-06	2.136E-03	6.251E-01
742	80.42	89.65	54.89	-2.847E-06	2.136E-03	6.251E-01
743	82.14	80.00	54.97	-2.847E-06	2.136E-03	6.251E-01
744	82.77	80.00	55.44	-2.847E-06	2.136E-03	6.251E-01
745	83.93	80.00	55.82	-2.847E-06	2.136E-03	6.251E-01
746	83.93	80.00	55.80	-2.847E-06	2.136E-03	6.251E-01
747	83.93	80.00	55.79	-2.847E-06	2.136E-03	6.251E-01
748	83.93	80.00	55.78	-2.847E-06	2.136E-03	6.251E-01
749	83.93	81.37	55.76	-5.174E-06	4.059E-03	-2.026E-01
750	84.46	87.05	55.75	-7.501E-06	5.983E-03	-1.030E+00
751	85.71	57.40	55.74	-9.827E-06	7.906E-03	-1.858E+00
752	85.71	42.19	55.42	-9.827E-06	7.906E-03	-1.858E+00
753	85.71	42.33	54.91	-9.827E-06	7.906E-03	-1.858E+00
754	85.71	40.00	55.19	-9.827E-06	7.906E-03	-1.858E+00
755	85.71	38.37	55.64	-9.827E-06	7.906E-03	-1.858E+00
756	85.71	12.83	55.31	-9.827E-06	7.906E-03	-1.858E+00
757	85.71	([a])	55.36	-9.827E-06	7.906E-03	-1.858E+00
758	85.71	([a])	55.75	-9.827E-06	7.906E-03	-1.858E+00
759	85.71	([a])	55.78	-9.827E-06	7.906E-03	-1.858E+00
760	87.27	7.37	55.81	-9.827E-06	7.906E-03	-1.858E+00
761	89.33	19.74	55.85	-9.827E-06	7.906E-03	-1.858E+00
762	91.07	11.83	55.86	-9.827E-06	7.906E-03	-1.858E+00
763	91.07	26.81	55.84	-9.827E-06	7.906E-03	-1.858E+00
764	91.96	49.96	55.81	-9.827E-06	7.906E-03	-1.858E+00
765	92.86	60.00	55.78	-9.827E-06	7.906E-03	-1.858E+00
766	91.40	60.00	55.74	-9.827E-06	7.906E-03	-1.858E+00
767	92.80	60.00	56.19	-9.827E-06	7.906E-03	-1.858E+00
768	92.86	40.00	57.13	-9.827E-06	7.906E-03	-1.858E+00
769	92.86	25.75	57.59	-9.827E-06	7.906E-03	-1.858E+00
770	92.07	([a])	57.55	-9.827E-06	7.906E-03	-1.858E+00
771	90.00	([a])	57.52	-9.827E-06	7.906E-03	-1.858E+00
772	89.29	([a])	57.53	-9.827E-06	7.906E-03	-1.858E+00
773	90.92	44.88	57.58	-9.827E-06	7.906E-03	-1.858E+00
774	91.07	36.40	57.63	-1.014E-05	8.189E-03	-1.873E+00
775	91.07	([a])	57.64	-1.045E-05	8.472E-03	-1.887E+00
776	91.07	([a])	58.11	-1.077E-05	8.756E-03	-1.902E+00
777	90.10	([a])	58.52	-1.077E-05	8.756E-03	-1.902E+00
778	90.54	([a])	58.38	-1.077E-05	8.756E-03	-1.902E+00
779	89.54	([a])	58.24	-1.077E-05	8.756E-03	-1.902E+00
780	87.47	([a])	58.10	-1.077E-05	8.756E-03	-1.902E+00
781	85.71	([a])	57.96	-1.077E-05	8.756E-03	-1.902E+00
782	85.71	10.00	57.81	-1.077E-05	8.756E-03	-1.902E+00

783	85.71	0.23	57.67	-1.077E-05	8.756E-03	-1.902E+00
784	85.71	([a])	57.66	-1.077E-05	8.756E-03	-1.902E+00
785	85.71	([a])	57.89	-1.077E-05	8.756E-03	-1.902E+00
786	84.00	([a])	58.03	-1.077E-05	8.756E-03	-1.902E+00
787	69.64	([a])	57.99	-1.077E-05	8.756E-03	-1.902E+00
788	69.15	([a])	57.96	-1.077E-05	8.756E-03	-1.902E+00
789	63.99	28.96	57.93	-1.077E-05	8.756E-03	-1.902E+00
790	59.98	80.00	57.89	-1.077E-05	8.756E-03	-1.902E+00
791	59.38	87.48	57.85	-1.077E-05	8.756E-03	-1.902E+00
792	63.78	90.00	57.80	-1.077E-05	8.756E-03	-1.902E+00
793	66.19	90.00	57.72	-1.077E-05	8.756E-03	-1.902E+00
794	67.46	92.20	57.65	-1.077E-05	8.756E-03	-1.902E+00
795	66.74	100.00	57.57	-1.077E-05	8.756E-03	-1.902E+00
796	68.81	94.65	57.50	-1.077E-05	8.756E-03	-1.902E+00
797	70.88	83.08	57.80	-1.077E-05	8.756E-03	-1.902E+00
798	71.43	71.51	58.72	-1.077E-05	8.756E-03	-1.902E+00
799	71.44	69.93	59.25	-8.819E-06	7.137E-03	-1.079E+00
800	73.51	58.36	59.19	-6.873E-06	5.518E-03	-2.559E-01
801	75.00	50.00	59.16	-4.927E-06	3.899E-03	5.670E-01
802	75.00	59.58	59.15	-4.927E-06	3.899E-03	5.670E-01
803	75.00	76.36	59.15	-4.927E-06	3.899E-03	5.670E-01
804	75.00	80.00	59.14	-4.927E-06	3.899E-03	5.670E-01
805	75.00	70.49	59.14	-4.927E-06	3.899E-03	5.670E-01
806	73.21	80.00	59.62	-4.927E-06	3.899E-03	5.670E-01
807	72.74	82.66	59.93	-4.927E-06	3.899E-03	5.670E-01
808	71.43	90.00	59.42	-4.927E-06	3.899E-03	5.670E-01
809	69.36	90.00	59.07	-4.927E-06	3.899E-03	5.670E-01
810	66.54	75.24	59.05	-4.927E-06	3.899E-03	5.670E-01
811	69.27	78.96	59.03	-4.927E-06	3.899E-03	5.670E-01
812	73.12	80.00	59.02	-4.927E-06	3.899E-03	5.670E-01
813	71.80	80.00	59.00	-4.927E-06	3.899E-03	5.670E-01
814	73.21	83.68	58.99	-4.927E-06	3.899E-03	5.670E-01
815	74.15	79.50	58.97	-4.927E-06	3.899E-03	5.670E-01
816	75.00	70.00	58.96	-4.927E-06	3.899E-03	5.670E-01
817	75.00	61.60	58.95	-4.927E-06	3.899E-03	5.670E-01
818	75.00	50.03	58.94	-4.927E-06	3.899E-03	5.670E-01
819	76.79	60.00	58.93	-4.927E-06	3.899E-03	5.670E-01
820	76.79	60.00	58.93	-4.927E-06	3.899E-03	5.670E-01
821	76.79	69.39	59.38	-4.927E-06	3.899E-03	5.670E-01
822	79.03	73.73	59.87	-4.927E-06	3.899E-03	5.670E-01
823	78.96	70.00	59.91	-4.927E-06	3.899E-03	5.670E-01
824	78.57	70.00	59.90	-4.927E-06	3.899E-03	5.670E-01
825	83.93	70.99	59.89	-4.927E-06	3.899E-03	5.670E-01
826	84.38	80.00	59.88	-4.927E-06	3.899E-03	5.670E-01
827	84.97	80.00	59.88	-4.927E-06	3.899E-03	5.670E-01
828	84.95	80.00	59.87	-4.927E-06	3.899E-03	5.670E-01
829	84.41	80.00	59.86	-5.382E-06	4.139E-03	6.372E-01

830	83.93	80.00	59.85	-5.838E-06	4.378E-03	7.074E-01
831	83.93	77.89	59.84	-6.294E-06	4.618E-03	7.776E-01
832	83.93	31.99	60.25	-6.294E-06	4.618E-03	7.776E-01
833	83.93	43.57	60.73	-6.294E-06	4.618E-03	7.776E-01
834	83.93	60.28	60.80	-6.294E-06	4.618E-03	7.776E-01
835	83.93	63.29	60.81	-6.294E-06	4.618E-03	7.776E-01
836	83.93	76.57	60.81	-6.294E-06	4.618E-03	7.776E-01
837	83.93	89.86	60.81	-6.294E-06	4.618E-03	7.776E-01
838	84.19	90.00	60.80	-6.294E-06	4.618E-03	7.776E-01
839	87.32	87.00	60.79	-6.294E-06	4.618E-03	7.776E-01
840	91.88	80.00	60.78	-6.294E-06	4.618E-03	7.776E-01
841	92.86	73.85	60.77	-6.294E-06	4.618E-03	7.776E-01
842	92.86	62.28	60.34	-6.294E-06	4.618E-03	7.776E-01
843	92.86	69.29	59.34	-6.294E-06	4.618E-03	7.776E-01
844	94.64	70.00	58.76	-6.294E-06	4.618E-03	7.776E-01
845	94.64	62.70	58.76	-6.294E-06	4.618E-03	7.776E-01
846	94.64	40.00	58.75	-6.294E-06	4.618E-03	7.776E-01
847	93.64	40.00	58.75	-6.294E-06	4.618E-03	7.776E-01
848	92.86	32.85	58.57	-6.294E-06	4.618E-03	7.776E-01
849	92.86	30.00	58.08	-7.448E-06	5.557E-03	8.947E-02
850	92.86	0.30	57.77	-8.602E-06	6.495E-03	-5.987E-01
851	92.53	11.87	57.78	-9.756E-06	7.434E-03	-1.287E+00
852	89.84	13.12	57.80	-9.756E-06	7.434E-03	-1.287E+00
853	87.50	5.01	57.82	-9.756E-06	7.434E-03	-1.287E+00
854	86.32	10.00	57.84	-9.756E-06	7.434E-03	-1.287E+00
855	85.71	([a])	57.86	-9.756E-06	7.434E-03	-1.287E+00
856	85.71	([a])	57.88	-9.756E-06	7.434E-03	-1.287E+00
857	85.71	([a])	57.99	-9.756E-06	7.434E-03	-1.287E+00
858	85.21	([a])	58.19	-9.756E-06	7.434E-03	-1.287E+00
859	83.93	([a])	58.39	-9.756E-06	7.434E-03	-1.287E+00
860	83.93	([a])	58.59	-9.756E-06	7.434E-03	-1.287E+00
861	85.29	5.18	58.79	-9.756E-06	7.434E-03	-1.287E+00
862	87.35	([a])	59.00	-9.756E-06	7.434E-03	-1.287E+00
863	87.50	([a])	57.32	-9.756E-06	7.434E-03	-1.287E+00
864	87.50	([a])	58.15	-9.756E-06	7.434E-03	-1.287E+00
865	86.80	([a])	58.57	-9.756E-06	7.434E-03	-1.287E+00
866	85.71	6.35	58.99	-9.756E-06	7.434E-03	-1.287E+00
867	85.71	12.98	59.41	-3.252E-06	2.478E-03	-4.290E-01
868	85.71	10.00	59.38	3.252E-06	-2.478E-03	4.290E-01
869	85.65	10.00	58.90	9.756E-06	-7.434E-03	1.287E+00
870	82.14	10.00	58.42	9.756E-06	-7.434E-03	1.287E+00
871	82.14	10.00	57.46	9.756E-06	-7.434E-03	1.287E+00
872	83.02	14.89	55.85	9.756E-06	-7.434E-03	1.287E+00
873	83.93	13.54	54.38	9.756E-06	-7.434E-03	1.287E+00
874	81.06	42.12	53.19	9.756E-06	-7.434E-03	1.287E+00
875	78.64	40.40	52.00	9.756E-06	-7.434E-03	1.287E+00
876	76.99	30.00	50.80	9.756E-06	-7.434E-03	1.287E+00

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877	78.57	32.75	49.59	9.756E-06	-7.434E-03	1.287E+00
878	77.80	44.32	48.39	9.756E-06	-7.434E-03	1.287E+00
879	75.73	50.00	47.07	9.756E-06	-7.434E-03	1.287E+00
880	73.67	50.00	45.71	9.756E-06	-7.434E-03	1.287E+00
881	73.21	50.00	44.46	9.756E-06	-7.434E-03	1.287E+00
882	73.32	40.00	43.27	9.756E-06	-7.434E-03	1.287E+00
883	74.22	35.64	42.10	9.756E-06	-7.434E-03	1.287E+00
884	71.43	20.00	40.89	9.756E-06	-7.434E-03	1.287E+00
885	75.23	51.95	39.61	9.756E-06	-7.434E-03	1.287E+00
886	77.34	66.21	38.22	9.756E-06	-7.434E-03	1.287E+00
887	75.28	60.00	36.96	9.756E-06	-7.434E-03	1.287E+00
888	73.21	9.96	36.06	9.756E-06	-7.434E-03	1.287E+00
889	70.85	1.61	35.23	9.756E-06	-7.434E-03	1.287E+00
890	67.29	19.56	34.02	9.756E-06	-7.434E-03	1.287E+00
891	65.22	40.00	32.37	9.756E-06	-7.434E-03	1.287E+00
892	63.15	8.35	30.81	9.756E-06	-7.434E-03	1.287E+00
893	61.09	([a])	29.57	9.756E-06	-7.434E-03	1.287E+00
894	42.10	8.95	28.26	9.756E-06	-7.434E-03	1.287E+00
895	31.96	10.00	25.94	9.756E-06	-7.434E-03	1.287E+00
896	29.42	7.38	23.56	9.756E-06	-7.434E-03	1.287E+00
897	26.04	([a])	22.00	9.756E-06	-7.434E-03	1.287E+00
898	14.71	([a])	19.21	9.756E-06	-7.434E-03	1.287E+00
899	1.90	([a])	16.51	9.756E-06	-7.434E-03	1.287E+00
900	0	0	12.12	9.756E-06	-7.434E-03	1.287E+00
901	0	0	7.07	9.756E-06	-7.434E-03	1.287E+00
902	0	0	2.60	9.756E-06	-7.434E-03	1.287E+00
903	0	0	0	9.756E-06	-7.434E-03	1.287E+00
904	0	0	0	1.390E-05	-1.206E-02	3.180E+00
905	0	0	0	1.805E-05	-1.669E-02	5.073E+00
906	0	0	0	2.219E-05	-2.131E-02	6.967E+00
907	0	0	0	2.219E-05	-2.131E-02	6.967E+00
908	0	0	0	2.219E-05	-2.131E-02	6.967E+00
909	0	0	0	2.219E-05	-2.131E-02	6.967E+00
910	0	0	0	2.219E-05	-2.131E-02	6.967E+00
911	0	0	0	2.219E-05	-2.131E-02	6.967E+00
912	0	0	0	2.219E-05	-2.131E-02	6.967E+00
913	0	0	0	2.219E-05	-2.131E-02	6.967E+00
914	0	0	0	2.219E-05	-2.131E-02	6.967E+00
915	0	0	0	2.219E-05	-2.131E-02	6.967E+00
916	0	0	0	2.219E-05	-2.131E-02	6.967E+00
917	0	0	0	2.219E-05	-2.131E-02	6.967E+00
918	0	0	0	2.219E-05	-2.131E-02	6.967E+00
919	0	0	0	2.219E-05	-2.131E-02	6.967E+00
920	0	0	0	2.219E-05	-2.131E-02	6.967E+00
921	0	0	0	2.219E-05	-2.131E-02	6.967E+00
922	0	0	0	2.219E-05	-2.131E-02	6.967E+00
923	0	0	0	2.219E-05	-2.131E-02	6.967E+00

924	0	0	0	2.219E-05	-2.131E-02	6.967E+00
925	0	0	0	2.219E-05	-2.131E-02	6.967E+00
926	0	0	0	2.219E-05	-2.131E-02	6.967E+00
927	0	3.67	0	2.219E-05	-2.131E-02	6.967E+00
928	0	47.69	0	2.219E-05	-2.131E-02	6.967E+00
929	2.78	59.41	0.33	2.219E-05	-2.131E-02	6.967E+00
930	8.12	84.54	1.67	2.219E-05	-2.131E-02	6.967E+00
931	13.95	80.00	2.83	2.219E-05	-2.131E-02	6.967E+00
932	29.90	80.00	4.02	2.219E-05	-2.131E-02	6.967E+00
933	33.87	79.29	5.64	2.219E-05	-2.131E-02	6.967E+00
934	27.86	38.25	7.39	2.219E-05	-2.131E-02	6.967E+00
935	19.63	26.67	8.83	2.219E-05	-2.131E-02	6.967E+00
936	26.79	15.10	9.15	2.219E-05	-2.131E-02	6.967E+00
937	19.85	16.47	9.70	2.219E-05	-2.131E-02	6.967E+00
938	17.51	28.05	11.37	2.219E-05	-2.131E-02	6.967E+00
939	17.86	20.38	13.04	2.219E-05	-2.131E-02	6.967E+00
940	16.37	([a])	14.74	2.219E-05	-2.131E-02	6.967E+00
941	5.85	([a])	16.41	2.219E-05	-2.131E-02	6.967E+00
942	14.13	([a])	16.85	2.219E-05	-2.131E-02	6.967E+00
943	21.10	([a])	16.09	2.219E-05	-2.131E-02	6.967E+00
944	15.63	([a])	15.23	2.219E-05	-2.131E-02	6.967E+00
945	12.67	62.52	14.22	2.219E-05	-2.131E-02	6.967E+00
946	14.86	69.36	13.02	2.219E-05	-2.131E-02	6.967E+00
947	24.79	60.00	12.47	2.219E-05	-2.131E-02	6.967E+00
948	33.06	63.79	13.05	2.219E-05	-2.131E-02	6.967E+00
949	42.29	75.36	14.26	2.219E-05	-2.131E-02	6.967E+00
950	48.90	80.00	15.09	2.219E-05	-2.131E-02	6.967E+00
951	51.52	80.00	15.42	2.219E-05	-2.131E-02	6.967E+00
952	48.24	79.92	15.96	2.219E-05	-2.131E-02	6.967E+00
953	51.79	65.03	16.58	2.219E-05	-2.131E-02	6.967E+00
954	52.37	43.23	17.61	2.219E-05	-2.131E-02	6.967E+00
955	56.14	50.00	18.33	2.219E-05	-2.131E-02	6.967E+00
956	62.35	50.00	18.65	2.219E-05	-2.131E-02	6.967E+00
957	64.29	42.05	19.67	2.219E-05	-2.131E-02	6.967E+00
958	67.69	40.00	20.47	2.219E-05	-2.131E-02	6.967E+00
959	75.20	42.20	20.57	2.219E-05	-2.131E-02	6.967E+00
960	74.88	41.28	20.68	2.219E-05	-2.131E-02	6.967E+00
961	71.92	([a])	21.56	2.219E-05	-2.131E-02	6.967E+00
962	71.88	([a])	23.19	2.219E-05	-2.131E-02	6.967E+00
963	69.64	([a])	23.64	7.398E-06	-7.105E-03	2.322E+00
964	71.24	([a])	22.75	-7.398E-06	7.105E-03	-2.322E+00
965	71.72	30.54	21.81	-2.219E-05	2.131E-02	-6.967E+00
966	76.41	42.12	20.79	-2.219E-05	2.131E-02	-6.967E+00
967	73.02	50.00	19.86	-2.219E-05	2.131E-02	-6.967E+00
968	69.64	50.00	19.18	-2.219E-05	2.131E-02	-6.967E+00
969	72.09	43.16	18.75	-2.219E-05	2.131E-02	-6.967E+00
970	82.23	73.65	18.43	-2.219E-05	2.131E-02	-6.967E+00

971	78.58	([a])	18.61	-2.219E-05	2.131E-02	-6.967E+00
972	75.00	([a])	19.11	-2.219E-05	2.131E-02	-6.967E+00
973	75.00	([a])	18.76	-2.219E-05	2.131E-02	-6.967E+00
974	72.47	([a])	17.68	-2.219E-05	2.131E-02	-6.967E+00
975	62.91	([a])	16.46	-2.219E-05	2.131E-02	-6.967E+00
976	58.93	13.57	15.06	-2.219E-05	2.131E-02	-6.967E+00
977	55.56	29.43	13.41	-2.219E-05	2.131E-02	-6.967E+00
978	57.14	20.00	11.91	-2.219E-05	2.131E-02	-6.967E+00
979	56.68	17.42	11.09	-2.219E-05	2.131E-02	-6.967E+00
980	53.88	10.00	10.90	-2.219E-05	2.131E-02	-6.967E+00
981	50.76	10.00	11.40	-2.219E-05	2.131E-02	-6.967E+00
982	50.00	([a])	12.38	-2.219E-05	2.131E-02	-6.967E+00
983	46.83	([a])	13.02	-2.219E-05	2.131E-02	-6.967E+00
984	35.63	10.00	12.30	-2.219E-05	2.131E-02	-6.967E+00
985	32.48	10.00	10.32	-2.219E-05	2.131E-02	-6.967E+00
986	26.79	10.00	9.70	-2.219E-05	2.131E-02	-6.967E+00
987	24.94	10.00	11.05	-2.219E-05	2.131E-02	-6.967E+00
988	23.21	16.74	11.88	-2.219E-05	2.131E-02	-6.967E+00
989	24.70	3.36	12.21	-2.219E-05	2.131E-02	-6.967E+00
990	25.00	([a])	13.29	-2.219E-05	2.131E-02	-6.967E+00
991	24.47	([a])	13.73	-2.219E-05	2.131E-02	-6.967E+00
992	18.71	([a])	12.77	-2.219E-05	2.131E-02	-6.967E+00
993	10.85	([a])	11.46	-2.219E-05	2.131E-02	-6.967E+00
994	3.40	([a])	9.84	-2.219E-05	2.131E-02	-6.967E+00
995	0	0	7.62	-2.219E-05	2.131E-02	-6.967E+00
996	0	0	3.57	-2.219E-05	2.131E-02	-6.967E+00
997	0	0.91	1.33	-2.219E-05	2.131E-02	-6.967E+00
998	0	7.52	0	-2.219E-05	2.131E-02	-6.967E+00
999	0	0	0	-2.219E-05	2.131E-02	-6.967E+00
1,000	0	0	0	-4.577E-06	5.686E-03	-3.784E+00
1,001	0	0	0	1.304E-05	-9.944E-03	-6.018E-01
1,002	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,003	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,004	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,005	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,006	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,007	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,008	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,009	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,010	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,011	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,012	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,013	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,014	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,015	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,016	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,017	0	0	0	3.066E-05	-2.557E-02	2.581E+00

1,018	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,019	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,020	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,021	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,022	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,023	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,024	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,025	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,026	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,027	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,028	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,029	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,030	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,031	1.58	([a])	0	3.066E-05	-2.557E-02	2.581E+00
1,032	1.43	([a])	0	3.066E-05	-2.557E-02	2.581E+00
1,033	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,034	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,035	1.91	9.28	0	3.066E-05	-2.557E-02	2.581E+00
1,036	2.75	0	0	3.066E-05	-2.557E-02	2.581E+00
1,037	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,038	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,039	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,040	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,041	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,042	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,043	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,044	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,045	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,046	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,047	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,048	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,049	0	5.51	0	3.066E-05	-2.557E-02	2.581E+00
1,050	0	11.34	0	3.066E-05	-2.557E-02	2.581E+00
1,051	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,052	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,053	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,054	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,055	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,056	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,057	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,058	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,059	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,060	0	0.21	0	3.066E-05	-2.557E-02	2.581E+00
1,061	0	30.00	0	3.066E-05	-2.557E-02	2.581E+00
1,062	0	26.78	0	3.066E-05	-2.557E-02	2.581E+00
1,063	0	20.00	0	3.066E-05	-2.557E-02	2.581E+00
1,064	0	20.00	0	3.066E-05	-2.557E-02	2.581E+00

1,065	0	4.12	0	3.066E-05	-2.557E-02	2.581E+00
1,066	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,067	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,068	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,069	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,070	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,071	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,072	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,073	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,074	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,075	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,076	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,077	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,078	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,079	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,080	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,081	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,082	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,083	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,084	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,085	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,086	0	20.00	0	3.066E-05	-2.557E-02	2.581E+00
1,087	0	20.00	0	3.066E-05	-2.557E-02	2.581E+00
1,088	0	11.73	0	3.066E-05	-2.557E-02	2.581E+00
1,089	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,090	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,091	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,092	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,093	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,094	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,095	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,096	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,097	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,098	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,099	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,100	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,101	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,102	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,103	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,104	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,105	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,106	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,107	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,108	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,109	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,110	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,111	0	0	0	3.066E-05	-2.557E-02	2.581E+00

1,112	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,113	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,114	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,115	0	0	0	3.066E-05	-2.557E-02	2.581E+00
1,116	0	73.41	0	3.066E-05	-2.557E-02	2.581E+00
1,117	0	90.00	0	3.066E-05	-2.557E-02	2.581E+00
1,118	27.95	81.30	2.83	3.066E-05	-2.557E-02	2.581E+00
1,119	36.74	90.00	5.87	3.066E-05	-2.557E-02	2.581E+00
1,120	39.29	90.00	8.67	3.066E-05	-2.557E-02	2.581E+00
1,121	41.44	90.00	11.47	3.066E-05	-2.557E-02	2.581E+00
1,122	45.57	82.41	14.26	3.066E-05	-2.557E-02	2.581E+00
1,123	59.52	80.00	16.91	3.066E-05	-2.557E-02	2.581E+00
1,124	66.99	90.00	18.33	3.066E-05	-2.557E-02	2.581E+00
1,125	80.22	90.00	19.35	3.066E-05	-2.557E-02	2.581E+00
1,126	86.41	93.88	21.55	3.066E-05	-2.557E-02	2.581E+00
1,127	86.53	50.94	24.84	3.066E-05	-2.557E-02	2.581E+00
1,128	84.46	17.02	26.81	3.066E-05	-2.557E-02	2.581E+00
1,129	88.54	28.60	28.36	2.397E-05	-2.025E-02	2.539E+00
1,130	89.29	39.83	30.31	1.729E-05	-1.494E-02	2.498E+00
1,131	89.29	30.00	30.82	1.060E-05	-9.616E-03	2.457E+00
1,132	89.29	26.69	30.86	1.060E-05	-9.616E-03	2.457E+00
1,133	90.16	20.00	31.82	1.060E-05	-9.616E-03	2.457E+00
1,134	89.92	20.00	33.33	1.060E-05	-9.616E-03	2.457E+00
1,135	89.29	36.06	34.20	1.060E-05	-9.616E-03	2.457E+00
1,136	85.86	40.00	33.82	1.060E-05	-9.616E-03	2.457E+00
1,137	85.51	30.00	33.51	1.060E-05	-9.616E-03	2.457E+00
1,138	84.42	32.75	33.87	1.060E-05	-9.616E-03	2.457E+00
1,139	86.48	35.68	34.70	1.060E-05	-9.616E-03	2.457E+00
1,140	88.55	30.00	36.14	1.060E-05	-9.616E-03	2.457E+00
1,141	89.29	44.93	37.60	1.060E-05	-9.616E-03	2.457E+00
1,142	90.90	50.00	38.09	1.060E-05	-9.616E-03	2.457E+00
1,143	77.27	([a])	38.13	3.535E-06	-3.205E-03	8.188E-01
1,144	56.75	([a])	38.05	-3.535E-06	3.205E-03	-8.188E-01
1,145	50.00	([a])	37.47	-1.060E-05	9.616E-03	-2.457E+00
1,146	41.07	([a])	36.69	-1.060E-05	9.616E-03	-2.457E+00
1,147	37.38	45.18	35.89	-1.060E-05	9.616E-03	-2.457E+00
1,148	34.21	78.47	35.06	-1.060E-05	9.616E-03	-2.457E+00
1,149	32.13	80.00	34.63	-1.060E-05	9.616E-03	-2.457E+00
1,150	27.71	80.00	34.13	-1.060E-05	9.616E-03	-2.457E+00
1,151	22.64	80.00	33.15	-1.060E-05	9.616E-03	-2.457E+00
1,152	20.58	60.97	32.12	-1.060E-05	9.616E-03	-2.457E+00
1,153	16.25	27.34	31.02	-1.060E-05	9.616E-03	-2.457E+00
1,154	11.46	43.71	29.82	-1.060E-05	9.616E-03	-2.457E+00
1,155	9.02	68.95	28.41	-1.060E-05	9.616E-03	-2.457E+00
1,156	3.38	68.95	26.91	-1.060E-05	9.616E-03	-2.457E+00
1,157	1.32	44.28	25.53	-1.060E-05	9.616E-03	-2.457E+00
1,158	0	0	24.21	-1.060E-05	9.616E-03	-2.457E+00

1,159	0	0	22.88	-1.060E-05	9.616E-03	-2.457E+00
1,160	0	0	18.40	-1.060E-05	9.616E-03	-2.457E+00
1,161	0	0	13.93	-1.060E-05	9.616E-03	-2.457E+00
1,162	0	0	9.45	-1.060E-05	9.616E-03	-2.457E+00
1,163	0	0	4.98	-1.060E-05	9.616E-03	-2.457E+00
1,164	0	0	0.50	-7.069E-06	6.411E-03	-1.638E+00
1,165	0	24.97	0	-3.535E-06	3.205E-03	-8.188E-01
1,166	0	17.16	0	0	0	0
1,167	0	6.20	0	0	0	0
1,168	0	10.00	0	0	0	0
1,169	0	10.00	0	0	0	0
1,170	0	0	0	0	0	0
1,171	0	0	0	0	0	0
1,172	0	0	0	0	0	0
1,173	0	0	0	0	0	0
1,174	0	0	0	0	0	0
1,175	0	0	0	0	0	0
1,176	0	0	0	0	0	0
1,177	0	0	0	0	0	0
1,178	0	0	0	0	0	0
1,179	0	0	0	0	0	0
1,180	0	0	0	0	0	0
1,181	0	0	0	0	0	0
1,182	0	0	0	0	0	0
1,183	0	0	0	0	0	0
1,184	0	0	0	0	0	0
1,185	0	0	0	0	0	0
1,186	0	0	0	0	0	0
1,187	0	0	0	0	0	0
1,188	0	0	0	0	0	0
1,189	0	0	0	0	0	0
1,190	0	0	0	0	0	0
1,191	0	0	0	0	0	0
1,192	0	0	0	0	0	0
1,193	0	0	0	0	0	0
1,194	0	0	0	0	0	0
1,195	0	0	0	0	0	0
1,196	0	0	0	0	0	0
1,197	0	0	0	0	0	0
1,198	0	0	0	0	0	0
1,199	0	0	0	0	0	0

[a]Closed throttle motoring.

BILLING CODE 6560–50–C

PART 1037—CONTROL OF EMISSIONS FROM NEW HEAVY-DUTY MOTOR VEHICLES

■ 127. The authority citation for part 1037 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

■ 128. Amend § 1037.103 by revising paragraph (c) to read as follows:

§ 1037.103 Evaporative and refueling emission standards.

* * * * *

(c) *Compliance demonstration.* You may provide a statement in the application for certification that vehicles above 14,000 pounds GVWR comply with evaporative and refueling emission standards in this section instead of submitting test data if you include an engineering analysis describing how vehicles include design parameters, equipment, operating controls, or other elements of design that adequately demonstrate that vehicles comply with the standards throughout the useful life. We would expect emission control components and systems to exhibit a comparable degree of control relative to vehicles that comply based on testing. For example, vehicles that comply under this paragraph (c) should rely on comparable material specifications to limit fuel permeation, and components should be sized and calibrated to correspond with the appropriate fuel capacities, fuel flow rates, purge strategies, and other vehicle operating characteristics. You may alternatively show that design parameters are comparable to those for vehicles at or below 14,000 pounds GVWR certified under 40 CFR part 86, subpart S.

* * * * *

■ 129. Amend § 1037.105 by revising paragraph (h)(1) to read as follows:

§ 1037.105 CO_2 emission standards for vocational vehicles.

* * * * *

(h) * * *

(1) The following alternative emission standards apply by vehicle type and model year as follows:

TABLE 5 OF § 1037.105—PHASE 2 CUSTOM CHASSIS STANDARDS

[g/ton-mile]

Vehicle type [a]	Assigned vehicle service class	MY 2021–2026	MY 2027+
School bus	Medium HDV	291	271
Motor home	Medium HDV	228	226
Coach bus	Heavy HDV	210	205
Other bus	Heavy HDV	300	286
Refuse hauler	Heavy HDV	313	298
Concrete mixer	Heavy HDV	319	316
Mixed-use vehicle	Heavy HDV	319	316
Emergency vehicle	Heavy HDV	324	319

[a] Vehicle types are generally defined in § 1037.801. "Other bus" includes any bus that is not a school bus or a coach bus. A "mixed-use vehicle" is one that meets at least one of the criteria specified in § 1037.631(a)(1) and at least one of the criteria in § 1037.631(a)(2), but not both.

* * * * *

■ 130. Amend § 1037.106 by revising paragraphs (b) and (f)(2)(i) to read as follows:

§ 1037.106 Exhaust emission standards for tractors above 26,000 pounds GVWR.

* * * * *

(b) The CO_2 standards for tractors above 26,000 pounds GVWR in Table 1 of this section apply based on modeling and testing as described in subpart F of this part. The provisions of § 1037.241 specify how to comply with the standards in this paragraph (b).

TABLE 1 OF § 1037.106—CO_2 STANDARDS FOR CLASS 7 AND CLASS 8 TRACTORS BY MODEL YEAR

[g/ton-mile]

Subcategory [a]	Phase 1 standards for model years 2014–2016	Phase 1 standards for model years 2017–2020	Phase 2 standards for model years 2021–2023	Phase 2 standards for model years 2024–2026	Phase 2 standards for model year 2027 and later
Class 7 Low-Roof (all cab styles)	107	104	105.5	99.8	96.2
Class 7 Mid-Roof (all cab styles)	119	115	113.2	107.1	103.4
Class 7 High-Roof (all cab styles)	124	120	113.5	106.6	100.0
Class 8 Low-Roof Day Cab	81	80	80.5	76.2	73.4
Class 8 Low-Roof Sleeper Cab	68	66	72.3	68.0	64.1
Class 8 Mid-Roof Day Cab	88	86	85.4	80.9	78.0
Class 8 Mid-Roof Sleeper Cab	76	73	78.0	73.5	69.6
Class 8 High-Roof Day Cab	92	89	85.6	80.4	75.7
Class 8 High-Roof Sleeper Cab	75	72	75.7	70.7	64.3
Heavy-Haul Tractors	.....	.....	52.4	50.2	48.3

[a] Subcategory terms are defined in § 1037.801.

* * * * *

(f) * * *

(2) * * *

(i) If you certify all your Class 7 tractors to Class 8 standards, you may use these Heavy HDV credits without restriction. This paragraph (f)(2)(i) applies equally for hybrid and electric vehicles.

* * * * *

■ 131. Amend § 1037.115 by revising paragraph (e) to read as follows:

§ 1037.115 Other requirements.

* * * * *

(e) *Air conditioning leakage.* Loss of refrigerant from your air conditioning systems may not exceed a total leakage rate of 11.0 grams per year or a percent leakage rate of 1.50 percent per year,

whichever is greater. Calculate the total leakage rate in g/year as specified in 40 CFR 86.1867–12(a). Calculate the percent leakage rate as: [total leakage rate (g/yr)] ÷ [total refrigerant capacity (g)] × 100. Round your percent leakage rate to the nearest one-hundredth of a percent. This paragraph (e) applies for all refrigerants.

(1) This paragraph (e) is intended to address air conditioning systems for which the primary purpose is to cool the driver compartment. This would generally include all cab-complete pickups and vans. This paragraph (e) does not apply for refrigeration units on trailers. Similarly, it does not apply for self-contained air conditioning used to cool passengers or refrigeration units used to cool cargo on vocational vehicles. Air conditioning and refrigeration units may be considered self-contained whether or not they draw electrical power from engines used to propel the vehicles. For purposes of this paragraph (e), a self-contained system is an enclosed unit with its own evaporator and condenser even if it draws power from the engine.

(2) For purposes of this paragraph (e), ''refrigerant capacity'' is the total mass of refrigerant recommended by the vehicle manufacturer as representing a full charge. Where full charge is specified as a pressure, use good engineering judgment to convert the pressure and system volume to a mass.

(3) If air conditioning systems with capacity above 3,000 grams of refrigerant are designed such that a compliance demonstration under 40 CFR 86.1867–12(a) is impossible or impractical, you may ask to use alternative means to demonstrate that your air conditioning system achieves an equivalent level of control.

■ 132. Amend § 1037.120 by revising paragraph (b)(1)(i) and (ii) to read as follows:

§ 1037.120 Emission-related warranty requirements.

* * * * *

(b) * * *

(1) * * *

(i) 5 years or 50,000 miles for Light HDV (except tires).

(ii) 5 years or 100,000 miles for Medium HDV and Heavy HDV (except tires).

* * * * *

§ 1037.135 [Amended]

■ 133. Amend § 1037.135 by removing and reserving paragraph (c)(4).

■ 134. Amend § 1037.140 by revising paragraphs (g) and (h) to read as follows:

§ 1037.140 Classifying vehicles and determining vehicle parameters.

* * * * *

(g) The standards and other provisions of this part apply to specific vehicle service classes for tractors and vocational vehicles as follows:

(1) Phase 1 and Phase 2 tractors are divided based on GVWR into Class 7 tractors and Class 8 tractors. Where provisions of this part apply to both tractors and vocational vehicles, Class 7 tractors are considered ''Medium HDV'' and Class 8 tractors are considered ''Heavy HDV''. This paragraph (g)(1) applies for electric, hybrid, and non-hybrid vehicles.

(2) Phase 1 vocational vehicles are divided based on GVWR. ''Light HDV'' includes Class 2b through Class 5 vehicles; ''Medium HDV'' includes Class 6 and Class 7 vehicles; and ''Heavy HDV'' includes Class 8 vehicles.

(3) Phase 2 vocational vehicles propelled by engines subject to the spark-ignition standards of 40 CFR part 1036, ''Light HDV'' includes Class 2b through Class 5 vehicles, and ''Medium HDV'' includes Class 6 through Class 8 vehicles.

(4) Phase 2 vocational vehicles propelled by engines subject to the compression-ignition standards in 40 CFR part 1036 are divided as follows:

(i) Class 2b through Class 5 vehicles are considered ''Light HDV''.

(ii) Class 6 through 8 vehicles are considered ''Heavy HDV'' if the installed engine's primary intended service class is heavy heavy-duty (see 40 CFR 1036.140).

(iii) Class 8 hybrid and electric vehicles are considered ''Heavy HDV'', regardless of the engine's primary intended service class.

(iv) All other Class 6 through Class 8 vehicles are considered ''Medium HDV''.

(5) In certain circumstances, you may certify vehicles to standards that apply for a different vehicle service class. For example, see §§ 1037.105(g) and 1037.106(f). If you optionally certify vehicles to different standards, those vehicles are subject to all the regulatory requirements as if the standards were mandatory.

(h) Use good engineering judgment to identify the intended regulatory subcategory (Urban, Multi-Purpose, or Regional) for each of your vocational vehicle configurations based on the expected use of the vehicles.

■ 135. Amend § 1037.150 by revising paragraphs (c), (q)(2), (s), (u), (x) introductory text, (y), (z), and (aa) to read as follows:

§ 1037.150 Interim provisions.

* * * * *

(c) *Small manufacturers.* The following provisions apply for small manufacturers:

(1) Small manufacturers are not subject to the greenhouse gas standards of § 1037.107 for trailers with a date of manufacture before January 1, 2019.

(2) The greenhouse gas standards of §§ 1037.105 and 1037.106 are optional for small manufacturers producing vehicles with a date of manufacture before January 1, 2022. In addition, small manufacturers producing vehicles that run on any fuel other than gasoline, E85, or diesel fuel may delay complying with every later standard under this part by one model year.

(3) Qualifying manufacturers must notify the Designated Compliance Officer each model year before introducing excluded vehicles into U.S. commerce. This notification must include a description of the manufacturer's qualification as a small business under 13 CFR 121.201. Manufacturers must label excluded vehicles with the following statement: ''THIS VEHICLE IS EXCLUDED UNDER 40 CFR 1037.150(c).''

(4) Small manufacturers may meet Phase 1 standards instead of Phase 2 standards in the first year Phase 2 standards apply to them if they voluntarily comply with the Phase 1 standards for the full preceding year. Specifically, small manufacturers may certify their model year 2022 vehicles to the Phase 1 greenhouse gas standards of §§ 1037.105 and 1037.106 if they certify all the vehicles from their annual U.S.-directed production volume to the Phase 1 standards starting on or before January 1, 2021.

(5) See paragraphs (r), (t), (y), and (aa) of this section for additional allowances for small manufacturers.

* * * * *

(q) * * *

(2) For vocational vehicles and tractors subject to Phase 2 standards, create separate vehicle subfamilies if there is a credit multiplier for advanced technology; group those vehicles together in a vehicle subfamily if they use the same multiplier.

* * * * *

(s) *Confirmatory testing for $F_{alt\text{-}aero}$.* If we conduct coastdown testing to verify your $F_{alt\text{-}aero}$ value for Phase 2 tractors, we will make our determination using the principles of SEA testing in § 1037.305. We will not replace your $F_{alt\text{-}aero}$ value if the tractor passes. If your tractor fails, we will generate a replacement value of $F_{alt\text{-}aero}$ based on at least one C_dA value and corresponding

effective yaw angle, Ψ_{eff}, from a minimum of 100 valid runs using the procedures of § 1037.528(h). Note that we intend to minimize the differences between our test conditions and those of the manufacturer by testing at similar times of the year where possible and the same location where possible and when appropriate.

* * * * *

(u) *Streamlined preliminary approval for trailer devices.* Before January 1, 2018, manufacturers of aerodynamic devices for trailers may ask for preliminary EPA approval of compliance data for their devices based on qualifying for designation under the SmartWay program based on measured C_dA values, whether or not that involves testing or other methods specified in § 1037.526. Trailer manufacturers may certify based on ΔC_dA values established under this paragraph (u) through model year 2020. Manufacturers must perform testing as specified in subpart F of this part for any vehicles or aerodynamic devices not qualifying for approval under this paragraph (u).

* * * * *

(x) *Aerodynamic testing for trailers.* Section 1037.526 generally requires you to adjust ΔC_dA values from alternate test methods to be equivalent to measurements with the primary test method. This paragraph (x) describes approximations that we believe are consistent with good engineering judgment; however, you may not use these approximations where we determine that clear and convincing evidence shows that they would significantly overestimate actual improvements in aerodynamic performance.

* * * * *

(y) *Transition to Phase 2 standards.* The following provisions allow for enhanced generation and use of emission credits from Phase 1 tractors and vocational vehicles for meeting the Phase 2 standards:

(1) For vocational Light HDV and vocational Medium HDV, emission credits you generate in model years 2018 through 2021 may be used through model year 2027, instead of being limited to a five-year credit life as specified in § 1037.740(c). For Class 8 vocational vehicles with medium heavy-duty engines, we will approve your request to generate these credits in and use these credits for the Medium HDV averaging set if you show that these vehicles would qualify as Medium HDV under the Phase 2 program as described in § 1037.140(g)(4).

(2) You may use the off-cycle provisions of § 1037.610 to apply technologies to Phase 1 vehicles as follows:

(i) You may apply an improvement factor of 0.988 for tractors and vocational vehicles with automatic tire inflation systems on all axles.

(ii) For vocational vehicles with automatic engine shutdown systems that conform with § 1037.660, you may apply an improvement factor of 0.95.

(iii) For vocational vehicles with stop-start systems that conform with § 1037.660, you may apply an improvement factor of 0.92.

(iv) For vocational vehicles with neutral-idle systems conforming with § 1037.660, you may apply an improvement factor of 0.98. You may adjust this improvement factor if we approve a partial reduction under § 1037.660(a)(2); for example, if your design reduces fuel consumption by half as much as shifting to neutral, you may apply an improvement factor of 0.99.

(3) Small manufacturers may generate emission credits for natural gas-fueled vocational vehicles as follows:

(i) Small manufacturers may certify their vehicles instead of relying on the exemption of paragraph (c) of this section. The provisions of this part apply for such vehicles, except as specified in this paragraph (y)(3).

(ii) Use GEM version 2.0.1 to determine a CO_2 emission level for your vehicle, then multiply this value by the engine's FCL for CO_2 and divide by the engine's applicable CO_2 emission standard.

(4) Phase 1 vocational vehicle credits that small manufacturers generate may be used through model year 2027.

(z) *Constraints for vocational regulatory subcategories.* The following provisions apply to determinations of vocational regulatory subcategories as described in § 1037.140:

(1) Select the Regional regulatory subcategory if you certify the engine based on testing only with the Supplemental Emission Test.

(2) Select the Regional regulatory subcategory for coach buses and motor homes you certify under § 1037.105(b).

(3) You may not select the Urban regulatory subcategory for any vehicle with a manual or single-clutch automated manual transmission.

(4) Starting in model year 2024, you must select the Regional regulatory subcategory for any vehicle with a manual transmission.

(5) You may select the Multi-purpose regulatory subcategory for any vocational vehicle, except as specified in paragraphs (z)(1) through (3) of this section.

(6) You may not select the Urban regulatory subcategory for any vehicle with a manual or single-clutch automated manual transmission.

(7) You may select the Urban regulatory subcategory for a hybrid vehicle equipped with regenerative braking, unless it is equipped with a manual transmission.

(8) You may select the Urban regulatory subcategory for any vehicle with a hydrokinetic torque converter paired with an automatic transmission, or a continuously variable automatic transmission, or a dual-clutch transmission with no more than two consecutive forward gears between which it is normal for both clutches to be momentarily disengaged.

(aa) *Custom-chassis standards.* The following provisions apply uniquely to small manufacturers under the custom-chassis standards of § 1037.105(h):

(1) You may use emission credits generated under § 1037.105(d), including banked or traded credits from any averaging set. Such credits remain subject to other limitations that apply under subpart H of this part.

(2) You may produce up to 200 drayage tractors in a given model year to the standards described in § 1037.105(h) for ''other buses''. The limit in this paragraph (aa)(2) applies with respect to vehicles produced by you and your affiliated companies. Treat these drayage tractors as being in their own averaging set.

■ 136. Amend § 1037.201 by revising paragraph (h) to read as follows:

§ 1037.201 General requirements for obtaining a certificate of conformity.

* * * * *

(h) The certification and testing provisions of 40 CFR part 86, subpart S, apply instead of the provisions of this subpart relative to the evaporative and refueling emission standards specified in § 1037.103, except that § 1037.243 describes how to demonstrate compliance with evaporative emission standards. For vehicles that do not use an evaporative canister for controlling diurnal emissions, you may certify with respect to exhaust emissions and use the provisions of § 1037.622 to let a different company certify with respect to evaporative emissions.

* * * * *

■ 137. Amend § 1037.205 by revising paragraphs (e) and (f) to read as follows:

§ 1037.205 What must I include in my application?

* * * * *

(e) Describe any test equipment and procedures that you used, including any special or alternate test procedures you used (see § 1037.501). Include information describing the procedures

you used to determine C_dA values as specified in §§ 1037.525 through 1037.527. Describe which type of data you are using for engine fuel maps (see 40 CFR 1036.503). If your trailer certification relies on approved data from device manufacturers, identify the device and device manufacturer.

(f) Describe how you operated any emission-data vehicle before testing, including the duty cycle and the number of vehicle operating miles used to stabilize emission-related performance. Explain why you selected the method of service accumulation. Describe any scheduled maintenance you did, and any practices or specifications that should apply for our testing.

* * * * *

■ 138. Amend § 1037.225 by revising paragraph (e) to read as follows:

§ 1037.225 Amending applications for certification.

* * * * *

(e) The amended application applies starting with the date you submit the amended application, as follows:

(1) For vehicle families already covered by a certificate of conformity, you may start producing a new or modified vehicle configuration any time after you send us your amended application and before we make a decision under paragraph (d) of this section. However, if we determine that the affected vehicles do not meet applicable requirements in this part, we will notify you to cease production of the vehicles and may require you to recall the vehicles at no expense to the owner. Choosing to produce vehicles under this paragraph (e) is deemed to be consent to recall all vehicles that we determine do not meet applicable emission standards or other requirements in this part and to remedy the nonconformity at no expense to the owner. If you do not provide information required under paragraph (c) of this section within 30 days after we request it, you must stop producing the new or modified vehicles.

(2) [Reserved]

* * * * *

■ 139. Amend § 1037.230 by revising paragraph (a)(2) to read as follows:

§ 1037.230 Vehicle families, sub-families, and configurations.

(a) * * *

(2) Apply subcategories for tractors (other than vocational tractors) as shown in Table 2 of this section.

(i) For vehicles certified to the optional tractor standards in § 1037.670, assign the subcategories as described in § 1037.670.

(ii) For vehicles intended for export to Canada, you may assign the subcategories as specified in the Canadian regulations.

(iii) Table 2 follows:

TABLE 2 OF § 1037.230—TRACTOR SUBCATEGORIES

Class 7	Class 8	
Low-roof tractors Mid-roof tractors High-roof tractors	Low-roof day cabs Mid-roof day cabs High-roof day cabs	Low-roof sleeper cabs. Mid-roof sleeper cabs. High-roof sleeper cabs.
	Heavy-haul tractors (starting with Phase 2).	

* * * * *

■ 140. Amend § 1037.231 by revising paragraph (b)(7) to read as follows:

§ 1037.231 Powertrain families.

* * * * *

(b) * * *

(7) Number of available forward gears, and transmission gear ratio for each available forward gear, if applicable. Count forward gears as being available only if the vehicle has the hardware and software to allow operation in those gears.

* * * * *

■ 141. Amend § 1037.235 by revising paragraphs (a), (c)(2), and (h) to read as follows:

§ 1037.235 Testing requirements for certification.

* * * * *

(a) Select emission-data vehicles that represent production vehicles and components for the vehicle family consistent with the specifications in §§ 1037.205(o), 1037.515, and 1037.520. Where the test results will represent multiple vehicles or components with different emission performance, use good engineering judgment to select worst-case emission data vehicles or components. In the case of powertrain testing under § 1037.550, select a test engine, test hybrid components, test axle, and test transmission as applicable, by considering the whole range of vehicle models covered by the powertrain family and the mix of duty cycles specified in § 1037.510. If the powertrain has more than one transmission calibration, for example economy vs. performance, you may weight the results from the powertrain testing in § 1037.550 by the percentage of vehicles in the family by prior model year for each configuration. This can be done, for example, through the use of survey data or based on the previous model year's sales volume. Weight the results of $M_{\text{fuel[cycle]}}$,

$$\frac{f_{\text{npowertrain}}}{v_{\text{powertrain}}},$$

and $W_{\text{[cycle]}}$ from Table 2 of § 1037.550 according to the percentage of vehicles in the family that use each transmission calibration.

* * * * *

(c) * * *

(2) If we measure emissions (or other parameters, as applicable) from your vehicle or component, the results of that testing become the official emission results for the vehicle or component. Note that changing the official emission result does not necessarily require a change in the declared modeling input value. These results will only affect your vehicle FEL if the results of our confirmatory testing result in a GEM vehicle emission value that is higher than the vehicle FEL declared by the manufacturer. Unless we later invalidate these data, we may decide not to consider your data in determining if your vehicle family meets applicable requirements in this part.

* * * * *

(h) You may ask us to use analytically derived GEM inputs for untested configurations (such as untested axle ratios within an axle family) as identified in subpart F of this part based on interpolation of all relevant measured values for related configurations, consistent with good engineering judgment. We may establish specific approval criteria based on prevailing industry practice. If we allow this, we may test any configuration. We

may also require you to test any configuration as part of a selective enforcement audit.

■ 142. Amend § 1037.243 by revising paragraph (c) to read as follows:

§ 1037.243 Demonstrating compliance with evaporative emission standards.

* * * * *

(c) Apply deterioration factors to measured emission levels for comparing to the emission standard in subpart B of this part. Establish an additive deterioration factor based on an engineering analysis that takes into account the expected aging from in-use vehicles.

* * * * *

■ 143. Revise § 1037.255 to read as follows:

§ 1037.255 What decisions may EPA make regarding my certificate of conformity?

(a) If we determine an application is complete and shows that the vehicle family meets all the requirements of this part and the Act, we will issue a certificate of conformity for the vehicle family for that model year. We may make the approval subject to additional conditions.

(b) We may deny an application for certification if we determine that a vehicle family fails to comply with emission standards or other requirements of this part or the Clean Air Act. We will base our decision on all available information. If we deny an application, we will explain why in writing.

(c) In addition, we may deny an application or suspend or revoke a certificate of conformity if you do any of the following:

(1) Refuse to comply with any testing or reporting requirements in this part.

(2) Submit false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete.

(3) Cause any test data to become inaccurate.

(4) Deny us from completing authorized activities (see 40 CFR 1068.20). This includes a failure to provide reasonable assistance.

(5) Produce vehicles for importation into the United States at a location where local law prohibits us from carrying out authorized activities.

(6) Fail to supply requested information or amend an application to include all vehicles being produced.

(7) Take any action that otherwise circumvents the intent of the Act or this part.

(d) We may void a certificate of conformity if you fail to keep records, send reports, or give us information as required under this part or the Act. Note that these are also violations of 40 CFR 1068.101(a)(2).

(e) We may void a certificate of conformity if we find that you intentionally submitted false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete after submission.

(f) If we deny an application or suspend, revoke, or void a certificate, you may ask for a hearing (see § 1037.820).

■ 144. Amend § 1037.301 by revising paragraph (b) to read as follows:

§ 1037.301 Overview of measurements related to GEM inputs in a selective enforcement audit.

* * * * *

(b) A selective enforcement audit for this part consists of performing measurements with production vehicles relative to one or more declared values for GEM inputs, and using those measured values in place of your declared values to run GEM. Except as specified in this subpart, the vehicle is considered passing if the new modeled emission result is at or below the modeled emission result corresponding to the declared GEM inputs. If you report an FEL for the vehicle configuration before the audit, we will instead consider the vehicle passing if the new cycle-weighted emission result is at or below the FEL.

* * * * *

■ 145. Amend § 1037.305 by revising the introductory text and paragraph (a) to read as follows:

§ 1037.305 Audit procedures for tractors—aerodynamic testing.

To perform a selective enforcement audit with respect to drag area for tractors, use the reference method specified in § 1037.525; we may instead require you to use the same method you used for certification. The following provisions apply instead of 40 CFR 1068.415 through 1068.425 for a selective enforcement audit with respect to drag area:

(a) Determine whether a tractor meets standards as follows:

(1) We will select a vehicle configuration for testing. Perform a coastdown measurement according to § 1037.528 with the vehicle in its production configuration. If the production configuration cannot be connected to a standard trailer, you may ask us to approve trailer specifications different than § 1037.501(g)(1) based on good engineering judgment. Instead of the process described in § 1037.528(h)(12), determine your test result as described in this paragraph (a). You must have an equal number of runs in each direction.

(2) Measure a yaw curve for your test vehicle using your alternate method according to § 1037.525(b)(3). You do not need to test at the coastdown effective yaw angle. You may use a previously established yaw curve from your certification testing if it is available.

(3) Using the yaw curve, perform a regression using values of drag area, C_dA_{alt}, and yaw angle, ψ_{alt}, to determine the air-direction correction coefficients, a_0, a_1, a_2, a_3, and a_4, for the following equation:

$$C_d A_{alt}(\psi) = a_0 + a_1 \cdot \psi_{alt} + a_2 \cdot \psi_{alt}^2 + a_3 \cdot \psi_{alt}^3 + a_4 \cdot \psi_{alt}^4$$

Eq. 1037.305-1

(4) Adjust the drag area value from each coastdown run, C_dA_{run}, from the yaw angle of each run, ψ_{run}, to ±4.5° to represent a wind-averaged drag area value, C_dA_{wa} by applying Eq. 1037.305–1 as follows:

$$C_d A_{wa\text{-}run} = C_d A_{run} \cdot \left[\frac{C_d A_{alt,4.5°} + C_d A_{alt,-4.5°}}{C_d A_{alt,\psi run} + C_d A_{alt,-\psi run}} \right]$$

Eq. 1037.305-2

(5) Perform additional coastdown measurements until you reach a pass or fail decision under this paragraph (a). The minimum number of runs to pass is 24. The minimum number of runs to fail is 100.

(6) Calculate statistical values to characterize cumulative test results at least once per day based on an equal number of coastdown runs in each direction. Determine the wind-averaged drag area value for the test C_dA_{wa} by averaging all $C_dA_{wa\text{-}run}$ values for all days of testing. Determine the upper and lower bounds of the drag area value, $C_dA_{wa\text{-}bounded}$, expressed to two decimal places, using a confidence interval as follows:

$$C_d A_{wa\text{-}bounded} = C_d A_{wa} \pm \left(\frac{1.5 \cdot \sigma}{\sqrt{n}} + 0.03 \right)$$

Eq. 1037.305-3

Where:

$C_dA_{wa\text{-}bounded}$ = the upper bound, $C_dA_{wa\text{-}upper}$, and lower bound, $C_dA_{wa\text{-}lower}$, of the drag area value, where $C_dA_{wa\text{-}upper}$ is the larger number.

C_dA_{wa} = the average of all $C_dA_{wa\text{-}run}$ values.

σ = the standard deviation of all $C_dA_{wa\text{-}run}$ values (see 40 CFR 1065.602(c)).

n = the total number of coastdown runs.

(7) Determine compliance based on the values of $C_dA_{wa\text{-}upper}$ and $C_dA_{wa\text{-}lower}$ relative to the adjusted bin boundary. For purposes of this section, the upper limit of a bin is expressed as the specified value plus 0.05 to account for rounding. For example, for a bin including values of 5.5–5.9 m^2, being above the upper limit means exceeding 5.95 m^2. The vehicle passes or fails relative to the adjusted bin boundary based on one of the following criteria:

(i) The vehicle passes if $C_dA_{wa\text{-}upper}$ is less than or equal to the upper limit of the bin to which you certified the vehicle.

(ii) The vehicle fails if $C_dA_{wa\text{-}lower}$ is greater than the upper limit of the bin to which you certified the vehicle.

(iii) The vehicle passes if you perform 100 coastdown runs and $C_dA_{wa\text{-}upper}$ is greater than and $C_dA_{wa\text{-}lower}$ is lower than the upper limit of the bin to which you certified the vehicle.

(iv) The vehicle fails if you choose to stop testing before reaching a final determination under this paragraph (a)(7).

(v) You may continue testing beyond the stopping point specified in this paragraph (a)(7). We may consider the additional data in making pass/fail determinations.

* * * * *

■ 146. Revise § 1037.320 to read as follows:

§ 1037.320 Audit procedures for axles and transmissions.

Selective enforcement audit provisions apply for axles and transmissions relative to the efficiency demonstrations of §§ 1037.560 and 1037.565 as specified in this section. The following provisions apply instead of 40 CFR 1068.415 through 1068.445 for the selective enforcement audit.

(a) A selective enforcement audit for axles or transmissions would consist of performing measurements with a production axle or transmission to determine mean power loss values as declared for GEM simulations, and running GEM over one or more applicable duty cycles based on those measured values. The axle or transmission is considered passing for a given configuration if the new modeled emission result for every applicable duty cycle is at or below the modeled emission result corresponding to the declared GEM inputs.

(b) Run GEM for each applicable vehicle configuration identified in 40 CFR 1036.540 using the applicable default engine map defined in appendix C of 40 CFR part 1036, and the default torque curve given in Table 1 of this section for the vehicle class as defined in § 1037.140(g). For axle testing, this may require omitting several vehicle configurations based on selecting axle ratios that correspond to the tested axle. For transmission testing, use the test transmission's gear ratios in place of the gear ratios defined in 40 CFR 1036.540. The GEM result for each vehicle configuration counts as a separate test for determining whether the family passes the audit.

(c) If the initial axle or transmission passes, the family passes and no further testing is required. If the initial axle or transmission does not pass, select two additional production axles or transmissions, as applicable, to perform additional tests. Note that these could be different axle and transmission configurations within the family. These become official test results for the family. Use good engineering judgment to use the results of these tests to update the declared maps for the axle or transmission family. For example, if you fail the audit test for any of the axles or transmissions tested, the audit result becomes the declared map. This may also require revising any analytically derived maps.

TABLE 1 TO § 1037.320—DEFAULT TORQUE CURVES FOR VEHICLE CLASS

Light HDV		Medium HDV		Heavy HDV		Light HDV and medium HDV spark-ignition	
Engine speed (r/min)	Engine torque (N·m)	Engine speed (r/min)	Engine torque (N·m)	Engine speed (r/min)	Engine torque (N·m)	Engine speed (r/min)	Engine torque (N·m)
750	470	600	850	600	1200	600	433
907	579	750	890	750	1320	700	436
1055	721	850	1000	850	1490	800	445
1208	850	950	1200	950	1700	900	473
1358	876	1050	1440	1050	1950	1000	492
1507	866	1100	1520	1100	2090	1100	515
1660	870	1150	1570	1200	2100	1200	526
1809	868	1250	1590	1250	2100	1300	541
1954	869	1300	1590	1300	2093	1400	542
2105	878	1450	1590	1400	2092	1500	542
2258	850	1500	1590	1500	2085	1600	542
2405	800	1600	1540	1520	2075	1700	547
2556	734	1700	1470	1600	2010	1800	550
2600	0	1800	1385	1700	1910	1900	551
.....	.....	1900	1300	1800	1801	2000	554
.....	.....	2000	1220	1900	1640	2100	553
.....	.....	2100	1040	2000	1350	2200	558
.....	.....	2250	590	2100	910	2300	558
.....	.....	2400	0	2250	0	2400	566
.....	.....	.....	.....	.....	.....	2500	571
.....	.....	.....	.....	.....	.....	2600	572
.....	.....	.....	.....	.....	.....	2700	581
.....	.....	.....	.....	.....	.....	2800	586
.....	.....	.....	.....	.....	.....	2900	587
.....	.....	.....	.....	.....	.....	3000	590
.....	.....	.....	.....	.....	.....	3100	591
.....	.....	.....	.....	.....	.....	3200	589
.....	.....	.....	.....	.....	.....	3300	585
.....	.....	.....	.....	.....	.....	3400	584
.....	.....	.....	.....	.....	.....	3500	582
.....	.....	.....	.....	.....	.....	3600	573
.....	.....	.....	.....	.....	.....	3700	562
.....	.....	.....	.....	.....	.....	3800	555
.....	.....	.....	.....	.....	.....	3900	544
.....	.....	.....	.....	.....	.....	4000	534
.....	.....	.....	.....	.....	.....	4100	517
.....	.....	.....	.....	.....	.....	4200	473
.....	.....	.....	.....	.....	.....	4291	442
.....	.....	.....	.....	.....	.....	4500	150

■ 147. Amend § 1037.501 by adding paragraph (i) to read as follows:

§ 1037.501 General testing and modeling provisions.

* * * * *

(i) Note that declared GEM inputs for fuel maps and aerodynamic drag area typically includes compliance margins to account for testing variability; for other measured GEM inputs, the declared values are typically the measured values without adjustment.

■ 148. Amend § 1037.510 by revising paragraphs (a)(2), (c)(3), (d), and (e) to read as follows:

§ 1037.510 Duty-cycle exhaust testing.

* * * * *

(a) * * *

(2) Perform cycle-average engine fuel mapping as described in 40 CFR 1036.540. For powertrain testing under § 1037.550 or § 1037.555, perform testing as described in this paragraph (a)(2) to generate GEM inputs for each simulated vehicle configuration, and test runs representing different idle conditions. Perform testing as follows:

(i) *Transient cycle.* The transient cycle is specified in appendix I of this part.

(ii) *Highway cruise cycles.* The grade portion of the route corresponding to the 55 mi/hr and 65 mi/hr highway cruise cycles is specified in appendix IV of this part. Maintain vehicle speed between −1.0 mi/hr and 3.0 mi/hr of the speed setpoint; this speed tolerance applies instead of the approach specified in 40 CFR 1066.425(b)(1) and (2).

(iii) *Drive idle.* Perform testing at a loaded idle condition for Phase 2 vocational vehicles. For engines with an adjustable warm idle speed setpoint, test at the minimum warm idle speed and the maximum warm idle speed; otherwise simply test at the engine's warm idle speed. Warm up the powertrain using the vehicle settings for the Test 1 vehicle configuration as defined in Table 2 or 3 of 40 CFR 1036.540 by operating it at 65 mi/hr for 600 seconds. Linearly ramp the powertrain down to zero vehicle speed in 20 seconds. Set the engine to operate at idle speed for 90 seconds, with the brake applied and the transmission in drive (or clutch depressed for manual transmission), and sample emissions to determine mean emission values (in g/s) over the last 30 seconds of idling.

(iv) *Parked idle.* Perform testing at an unloaded idle condition for Phase 2 vocational vehicles. For engines with an adjustable warm idle speed setpoint, test at the minimum warm idle speed and the maximum warm idle speed; otherwise simply test at the engine's warm idle speed. Warm up the powertrain using the vehicle settings for the Test 1 vehicle configuration by

operating it at 65 mi/hr for 600 seconds. Linearly ramp the powertrain down to zero vehicle speed in 20 seconds. Set the engine to operate at idle speed for 780 seconds, with the transmission in park (or the transmission in neutral with the parking brake applied for manual transmissions), and sample emissions to determine mean emission values (in g/s) over the last 600 seconds of idling.

* * * * *

(c) * * *

(3) Table 1 follows:

TABLE 1 OF § 1037.510—WEIGHTING FACTORS FOR DUTY CYCLES

	Distance-weighted			Time-weighted [a]			Average speed during non-idle cycles (mi/hr) [b]
	Transient (%)	55 mi/hr cruise (%)	65 mi/hr cruise (%)	Drive idle (%)	Parked idle (%)	Non-idle (%)	
Day Cabs	19	17	64	.....	.....	.....	.....
Sleeper Cabs	5	9	86	.....	.....	.....	.....
Heavy-haul tractors	19	17	64	.....	.....	.....	.....
Vocational—Regional	20	24	56	0	25	75	38.41
Vocational—Multi-Purpose (2b–7)	54	29	17	17	25	58	23.18
Vocational—Multi-Purpose (8)	54	23	23	17	25	58	23.27
Vocational—Urban (2b–7)	92	8	0	15	25	60	16.25
Vocational—Urban (8)	90	10	0	15	25	60	16.51
Vocational with conventional powertrain (Phase 1 only)	42	21	37	.....	.....	.....	.....
Vocational Hybrid Vehicles (Phase 1 only)	75	9	16	.....	.....	.....	.....

[a] Note that these drive idle and non-idle weighting factors do not reflect additional drive idle that occurs during the transient cycle. The transient cycle does not include any parked idle.

[b] These values apply even for vehicles not following the specified speed traces.

(d) For transient testing, compare actual second-by-second vehicle speed with the speed specified in the test cycle and ensure any differences are consistent with the criteria as specified in 40 CFR 1066.425(b) and (c). If the speeds do not conform to these criteria, the test is not valid and must be repeated.

(e) Run test cycles as specified in 40 CFR part 1066. For testing vehicles equipped with cruise control over the highway cruise cycles, you may use the vehicle's cruise control to control the vehicle speed. For vehicles equipped with adjustable vehicle speed limiters, test the vehicle with the vehicle speed limiter at its highest setting.

* * * * *

■ 149. Amend § 1037.515 by revising paragraphs (c) and (d)(2) to read as follows:

§ 1037.515 Determining CO_2 emissions to show compliance for trailers.

* * * * *

(c) *Drag area.* You may use ΔC_dA values approved under § 1037.211 for device manufacturers if your trailers are properly equipped with those devices. Determine ΔC_dA values for other trailers based on testing. Measure C_dA and determine ΔC_dA values as described in § 1037.526(a). You may use ΔC_dA values from one trailer configuration to represent any number of additional trailers based on worst-case testing. This means that you may apply ΔC_dA values from your measurements to any trailer models of the same category with drag area at or below that of the tested configuration. For trailers in the short dry box vans and short refrigerated box vans that are not 28 feet long, apply the ΔC_dA value established for a comparable 28-foot trailer model; you may use the same devices designed for 28-foot trailers or you may adapt those devices as appropriate for the different trailer length, consistent with good engineering judgment. For example, 48-foot trailers may use longer side skirts than the skirts that were tested with a 28-foot trailer. Trailer and device manufacturers may seek preliminary approval for these adaptations. Determine bin levels based on ΔC_dA test results as described in the following table:

TABLE 2 OF § 1037.515—BIN DETERMINATIONS FOR TRAILERS BASED ON AERODYNAMIC TEST RESULTS

[ΔC_dA in m^2]

If a trailer's measured ΔC_DA is . . .	Designate the trailer as . . .	And use the following value for ΔC_DA . . .
≤0.09	Bin I	0.0
0.10–0.39	Bin II	0.1
0.40–0.69	Bin III	0.4
0.70–0.99	Bin IV	0.7
1.00–1.39	Bin V	1.0
1.40–1.79	Bin VI	1.4
≥1.80	Bin VII	1.8

(d) * * *

(2) Apply weight reductions for other components made with light-weight materials as shown in the following table:

TABLE 3 OF § 1037.515—WEIGHT REDUCTIONS FOR TRAILERS

[pounds]

Component	Material	Weight reduction (pounds)
Structure for Suspension Assembly [a]	Aluminum	280
Hub and Drum (per axle)	Aluminum	80
Floor [b]	Aluminum	375
Floor [b]	Composite (wood and plastic)	245
Floor Crossmembers [b]	Aluminum	250
Landing Gear	Aluminum	50
Rear Door	Aluminum	187
Rear Door Surround	Aluminum	150
Roof Bows	Aluminum	100
Side Posts	Aluminum	300
Slider Box	Aluminum	150
Upper Coupler Assembly	Aluminum	430

[a] For tandem-axle suspension sub-frames made of aluminum, apply a weight reduction of 280 pounds. Use good engineering judgment to estimate a weight reduction for using aluminum sub-frames with other axle configurations.

[b] Calculate a smaller weight reduction for short trailers by multiplying the indicated values by 0.528 (28/53).

* * * * *

■ 150. Revise § 1037.520 to read as follows:

§ 1037.520 Modeling CO_2 emissions to show compliance for vocational vehicles and tractors.

This section describes how to use the Greenhouse gas Emissions Model (GEM) (incorporated by reference in § 1037.810) to show compliance with the CO_2 standards of §§ 1037.105 and 1037.106 for vocational vehicles and tractors. Use GEM version 2.0.1 to demonstrate compliance with Phase 1 standards; use GEM Phase 2, Version 3.5.1 to demonstrate compliance with Phase 2 standards. Use good engineering judgment when demonstrating compliance using GEM. See § 1037.515 for calculation procedures for demonstrating compliance with trailer standards.

(a) *General modeling provisions.* To run GEM, enter all applicable inputs as specified by the model.

(1) GEM inputs apply for Phase 1 standards as follows:

(i) Model year and regulatory subcategory (see § 1037.230).

(ii) Coefficient of aerodynamic drag or drag area, as described in paragraph (b) of this section (tractors only).

(iii) Steer and drive tire rolling resistance, as described in paragraph (c) of this section.

(iv) Vehicle speed limit, as described in paragraph (d) of this section (tractors only).

(v) Vehicle weight reduction, as described in paragraph (e) of this section (tractors only for Phase 1).

(vi) Automatic engine shutdown systems, as described in § 1037.660 (only for Class 8 sleeper cabs). Enter a GEM input value of 5.0 g/ton-mile, or an adjusted value as specified in § 1037.660.

(2) For Phase 2 vehicles, the GEM inputs described in paragraphs (a)(1)(i) through (v) of this section continue to apply. Note that the provisions in this part related to vehicle speed limiters and automatic engine shutdown systems are available for vocational vehicles in Phase 2. The rest of this section describes additional GEM inputs for demonstrating compliance with Phase 2 standards. Simplified versions of GEM apply for limited circumstances as follows:

(i) You may use default engine fuel maps for glider kits as described in § 1037.635.

(ii) If you certify vehicles to the custom-chassis standards specified in § 1037.105(h), run GEM by identifying the vehicle type and entering ''NA'' instead of what would otherwise apply for, tire revolutions per mile, engine information, transmission information, drive axle ratio, axle efficiency, and aerodynamic improvement as specified in paragraphs (c)(1), (f), (g)(1) and (3), (i), and (m) of this section, respectively. Incorporate other GEM inputs as specified in this section.

(b) *Coefficient of aerodynamic drag and drag area for tractors.* Determine the appropriate drag area, C_dA, for tractors as described in this paragraph (b). Use the recommended method or an alternate method to establish a value for C_dA, expressed in m^2 to one decimal place, as specified in § 1037.525. Where we allow you to group multiple configurations together, measure C_dA of the worst-case configuration.

(1) Except as specified in paragraph (b)(2) of this section, determine the Phase 1 bin level for your vehicle based on measured C_dA values as shown in the following tables:

TABLE 1 TO § 1037.520—C_d INPUTS FOR PHASE 1 HIGH-ROOF TRACTORS

Tractor type	Bin level	If your measured C_DA (M^2) is . . .	Then your C_D input is . . .
High-Roof Day Cabs	Bin I	≥8.0	0.79
	Bin II	7.1–7.9	0.72
	Bin III	6.2–7.0	0.63
	Bin IV	5.6–6.1	0.56
	Bin V	≤5.5	0.51
High-Roof Sleeper Cabs	Bin I	≥7.6	0.75
	Bin II	6.8–7.5	0.68

TABLE 1 TO § 1037.520—C_d INPUTS FOR PHASE 1 HIGH-ROOF TRACTORS—Continued

Tractor type	Bin level	If your measured C_DA (M^2) is . . .	Then your C_D input is . . .
	Bin III	6.3–6.7	0.60
	Bin IV	5.6–6.2	0.52
	Bin V	≤5.5	0.47

TABLE 2 TO § 1037.520—C_d INPUTS FOR PHASE 1 LOW-ROOF AND MID-ROOF TRACTORS

Tractor type	Bin level	If your measured C_DA (M^2) is . . .	Then your C_D input is . . .
Low-Roof Day and Sleeper Cabs	Bin I	≥5.1	0.77
	Bin II	≤5.0	0.71
Mid-Roof Day and Sleeper Cabs	Bin I	≥5.6	0.87
	Bin II	≤5.5	0.82

(2) For Phase 1 low- and mid-roof tractors, you may instead determine your drag area bin based on the drag area bin of an equivalent high-roof tractor. If the high-roof tractor is in Bin I or Bin II, then you may assume your equivalent low- and mid-roof tractors are in Bin I. If the high-roof tractor is in Bin III, Bin IV, or Bin V, then you may assume your equivalent low- and mid-roof tractors are in Bin II.

(3) For Phase 2 tractors other than heavy-haul tractors, determine bin levels and C_dA inputs as follows:

(i) Determine bin levels for high-roof tractors based on aerodynamic test results as specified in § 1037.525 and summarized in the following table:

TABLE 3 TO § 1037.520—BIN DETERMINATIONS FOR PHASE 2 HIGH-ROOF TRACTORS BASED ON AERODYNAMIC TEST RESULTS

[C_dA in m^2]

Tractor type	Bin I	Bin II	Bin III	Bin IV	Bin V	Bin VI	Bin VII
Day Cabs	≥7.2	6.6–7.1	6.0–6.5	5.5–5.9	5.0–5.4	4.5–4.9	≤4.4
Sleeper Cabs	≥6.9	6.3–6.8	5.7–6.2	5.2–5.6	4.7–5.1	4.2–4.6	≤4.1

(ii) For low- and mid-roof tractors, you may either use the same bin level that applies for an equivalent high-roof tractor as shown in Table 3 of this section, or you may determine your bin level based on aerodynamic test results as described in Table 4 of this section.

TABLE 4 TO § 1037.520—BIN DETERMINATIONS FOR PHASE 2 LOW-ROOF AND MID-ROOF TRACTORS BASED ON AERODYNAMIC TEST RESULTS

[C_dA in m^2]

Tractor type	Bin I	Bin II	Bin III	Bin IV	Bin V	Bin VI	Bin VII
Low-Roof Cabs	≥5.4	4.9–5.3	4.5–4.8	4.1–4.4	3.8–4.0	3.5–3.7	≤3.4
Mid-Roof Cabs	≥5.9	5.5–5.8	5.1–5.4	4.7–5.0	4.4–4.6	4.1–4.3	≤4.0

(iii) Determine the C_dA input according to the tractor's bin level as described in the following table:

TABLE 5 TO § 1037.520—PHASE 2 C_dA TRACTOR INPUTS BASED ON BIN LEVEL

Tractor type	Bin I	Bin II	Bin III	Bin IV	Bin V	Bin VI	Bin VII
High-Roof Day Cabs	7.45	6.85	6.25	5.70	5.20	4.70	4.20
High-Roof Sleeper Cabs	7.15	6.55	5.95	5.40	4.90	4.40	3.90
Low-Roof Cabs	6.00	5.60	5.15	4.75	4.40	4.10	3.80
Mid-Roof Cabs	7.00	6.65	6.25	5.85	5.50	5.20	4.90

(4) Note that, starting in model year 2027, GEM internally reduces C_dA for high-roof tractors by 0.3 m2 to simulate adding a rear fairing to the standard trailer.

(c) *Tire revolutions per mile and rolling resistance.* You must have a tire revolutions per mile (TRPM) and a tire rolling resistance level (TRRL) for each tire configuration. For purposes of this section, you may consider tires with the same SKU number to be the same configuration. Determine TRRL input values separately for drive and steer tires; determine TRPM only for drive tires.

(1) Use good engineering judgment to determine a tire's revolutions per mile to the nearest whole number as specified in SAE J1025 (incorporated by reference in § 1037.810). Note that for tire sizes that you do not test, we will treat your analytically derived revolutions per mile the same as test results, and we may perform our own testing to verify your values. We may require you to test a sample of additional tire sizes that we select.

(2) Measure tire rolling resistance in kg per metric ton as specified in ISO 28580 (incorporated by reference in § 1037.810), except as specified in this paragraph (c). Use good engineering judgment to ensure that your test results are not biased low. You may ask us to identify a reference test laboratory to which you may correlate your test results. Prior to beginning the test procedure in Section 7 of ISO 28580 for a new bias-ply tire, perform a break-in procedure by running the tire at the specified test speed, load, and pressure for 60 ± 2 minutes.

(3) For each tire design tested, measure rolling resistance of at least three different tires of that specific design and size. Perform the test at least once for each tire. Calculate the arithmetic mean of these results to the nearest 0.1 kg/tonne and use this value or any higher value as your GEM input for TRRL. You must test at least one tire size for each tire model, and may use engineering analysis to determine the rolling resistance of other tire sizes of that model. Note that for tire sizes that you do not test, we will treat your analytically derived rolling resistances the same as test results, and we may perform our own testing to verify your values. We may require you to test a small sub-sample of untested tire sizes that we select.

(4) If you obtain your test results from the tire manufacturer or another third party, you must obtain a signed statement from the party supplying those test results to verify that tests were conducted according to the requirements of this part. Such statements are deemed to be submissions to EPA.

(5) For tires marketed as light truck tires that have load ranges C, D, or E, use as the GEM input TRRL multiplied by 0.87.

(6) For vehicles with at least three drive axles or for vehicles with more than three axles total, use good engineering judgment to combine tire rolling resistance into three values (steer, drive 1, and drive 2) for use in GEM. This may require performing a weighted average of tire rolling resistance from multiple axles based on the typical load on each axle. For liftable axles, calculate load- and time-weighted values to represent the load and the amount of time these tires are in contact with the ground during typical in-use operation.

(7) For vehicles with a single rear axle, enter ''NA'' as the TRRL value for drive axle 2.

(d) *Vehicle speed limit.* If the vehicles will be equipped with a vehicle speed limiter, input the maximum vehicle speed to which the vehicle will be limited (in miles per hour rounded to the nearest 0.1 mile per hour) as specified in § 1037.640. Use good engineering judgment to ensure the limiter is tamper resistant. We may require you to obtain preliminary approval for your designs.

(e) *Vehicle weight reduction.* Develop a weight-reduction as a GEM input as described in this paragraph (e). Enter the sum of weight reductions as described in this paragraph (e), or enter zero if there is no weight reduction. For purposes of this paragraph (e), high-strength steel is steel with tensile strength at or above 350 MPa.

(1) Vehicle weight reduction inputs for wheels are specified relative to dual-wide tires with conventional steel wheels. For purposes of this paragraph (e)(1), an aluminum alloy qualifies as light-weight if a dual-wide drive wheel made from this material weighs at least 21 pounds less than a comparable conventional steel wheel. The inputs are listed in Table 6 of this section. For example, a tractor or vocational vehicle with aluminum steer wheels and eight (4×2) dual-wide aluminum drive wheels would have an input of 210 pounds (2×21 + 8×21).

TABLE 6 TO § 1037.520—WHEEL-RELATED WEIGHT REDUCTIONS

Weight-reduction technology	Weight reduction—phase 1 (lb per wheel)	Weight reduction—phase 2 (lb per wheel)
Wide-Base Single Drive Tire with . . .[a]		
Steel Wheel	84	84
Aluminum Wheel	139	147
Light-Weight Aluminum Alloy Wheel	147	147
Wide-Base Single Trailer Tire with . . .[a]		
Steel Wheel	.....	84
Aluminum or Aluminum Alloy Wheel	.....	131
Steer Tire, Dual-wide Drive Tire, or Dual-wide Trailer Tire with . . .		
High-Strength Steel Wheel	8	8
Aluminum Wheel	21	25
Light-Weight Aluminum Alloy Wheel	30	25

[a] The weight reduction for wide-base tires accounts for reduced tire weight relative to dual-wide tires.

(2) Weight reduction inputs for tractor components other than wheels are specified in the following table:

TABLE 7 TO § 1037.520—NONWHEEL-RELATED WEIGHT REDUCTIONS FROM ALTERNATIVE MATERIALS FOR TRACTORS

[Pounds]

Weight reduction technologies	Aluminum	High-strength steel	Thermoplastic
Door	20	6	
Roof	60	18	
Cab rear wall	49	16	
Cab floor	56	18	
Hood Support Structure System	15	3	
Hood and Front Fender			65
Day Cab Roof Fairing			18
Sleeper Cab Roof Fairing	75	20	40
Aerodynamic Side Extender			10
Fairing Support Structure System	35	6	
Instrument Panel Support Structure	5	1	
Brake Drums—Drive (set of 4)	140	74	
Brake Drums—Non Drive (set of 2)	60	42	
Frame Rails	440	87	
Crossmember—Cab	15	5	
Crossmember—Suspension	25	6	
Crossmember—Non Suspension (set of 3)	15	5	
Fifth Wheel	100	25	
Radiator Support	20	6	
Fuel Tank Support Structure	40	12	
Steps	35	6	
Bumper	33	10	
Shackles	10	3	
Front Axle	60	15	
Suspension Brackets, Hangers	100	30	
Transmission Case	50	12	
Clutch Housing	40	10	
Fairing Support Structure System	35	6	
Drive Axle Hubs (set of 4)	80	20	
Non Drive Hubs (2)	40	5	
Two-piece driveshaft	20	5	
Transmission/Clutch Shift Levers	20	4	

(3) Weight-reduction inputs for vocational-vehicle components other than wheels are specified in the following table:

TABLE 8 TO § 1037.520—NONWHEEL-RELATED WEIGHT REDUCTIONS FROM ALTERNATIVE MATERIALS FOR PHASE 2 VOCATIONAL VEHICLES

[Pounds] [a]

Component	Material	Vehicle type		
		Light HDV	Medium HDV [b]	Heavy HDV
Axle Hubs—Non-Drive	Aluminum	40		40
Axle Hubs—Non-Drive	High Strength Steel	5		5
Axle—Non-Drive	Aluminum	60		60
Axle—Non-Drive	High Strength Steel	15		15
Brake Drums—Non-Drive	Aluminum	60		60
Brake Drums—Non-Drive	High Strength Steel	42		42
Axle Hubs—Drive	Aluminum	40		80
Axle Hubs—Drive	High Strength Steel	10		20
Brake Drums—Drive	Aluminum	70		140
Brake Drums—Drive	High Strength Steel	37		74
Suspension Brackets, Hangers	Aluminum	67		100
Suspension Brackets, Hangers	High Strength Steel	20		30
Crossmember—Cab	Aluminum	10	15	15
Crossmember—Cab	High Strength Steel	2	5	5
Crossmember—Non-Suspension	Aluminum	15	15	15
Crossmember—Non-Suspension	High Strength Steel	5	5	5
Crossmember—Suspension	Aluminum	15	25	25
Crossmember—Suspension	High Strength Steel	6	6	6
Driveshaft	Aluminum	12	40	50
Driveshaft	High Strength Steel	5	10	12
Frame Rails	Aluminum	120	300	440

TABLE 8 TO § 1037.520—NONWHEEL-RELATED WEIGHT REDUCTIONS FROM ALTERNATIVE MATERIALS FOR PHASE 2 VOCATIONAL VEHICLES—Continued

[Pounds] [a]

Component	Material	Vehicle type		
		Light HDV	Medium HDV [b]	Heavy HDV
Frame Rails	High Strength Steel	40	40	87

[a] Weight-reduction values apply per vehicle unless otherwise noted.
[b] For Medium HDV with 6x4 or 6x2 axle configurations, use the values for Heavy HDV.

(4) Apply vehicle weight inputs for changing technology configurations as follows:

(i) For Class 8 tractors or for Class 8 vocational vehicles with a permanent 6x2 axle configuration, apply a weight reduction input of 300 pounds. However, apply no weight reduction for coach buses certified to custom-chassis standards under § 1037.105(h).

(ii) For Class 8 tractors with 4x2 axle configuration, apply a weight reduction input of 400 pounds.

(iii) For tractors with installed engines with displacement below 14.0 liters, apply a weight reduction of 300 pounds.

(iv) For tractors with single-piece driveshafts with a total length greater than 86 inches, apply a weight reduction of 43 pounds for steel driveshafts and 63 pounds for aluminum driveshafts.

(5) You may ask to apply the off-cycle technology provisions of § 1037.610 for weight reductions not covered by this paragraph (e).

(f) *Engine characteristics.* Enter information from the engine manufacturer to describe the installed engine and its operating parameters as described in 40 CFR 1036.503. The fuel-mapping information must apply for the vehicle's GVWR; for example, if you install a medium heavy-duty engine in a Class 8 vehicle, the engine must have additional fuel-mapping information for the heavier vehicle. Note that you do not need fuel consumption at idle for tractors.

(g) *Vehicle characteristics.* Enter the following information to describe the vehicle and its operating parameters:

(1) Transmission make, model, and type. Also identify the gear ratio for every available forward gear to two decimal places, the input torque limit for each of the forward gears, and, if applicable, the lowest gear involving a locked torque converter. Count forward gears as being available only if the vehicle has the hardware and software to allow operation in those gears. For vehicles with a manual transmission, GEM applies a 2% emission increase relative to automated manual transmissions. If your vehicle has a dual-clutch transmission, use good engineering judgment to determine if it can be accurately represented in GEM as an automated manual transmission. We may require you to perform a powertrain test with dual-clutch transmissions to show that they can be properly simulated as an automated manual transmission.

(2) Drive axle make, model, and configuration. Select a drive axle configuration to represent your vehicle for modeling.

(i) 4x2: One drive axle and one non-drive axle. This includes vehicles with two drive axles where one of the drive axles is disconnectable and that disconnectable drive axle is designed to be connected only when the vehicle is driven off-road or in slippery conditions if at least one of the following is true:

(A) The input and output of the disconnectable axle is mechanically disconnected from the drive shaft and the wheels when the axle is in 4x2 configuration.

(B) You provide power loss data generated according to § 1037.560 for the combination of both drive axles, where the disconnectable drive axle is in the disconnected configuration.

(ii) 6x2: One drive axle and two non-drive axles.

(iii) 6x4: Two or more drive axles, or more than three total axles. Note that this includes, for example, a vehicle with two drive axles out of four total axles (otherwise known as an 8x4 configuration).

(iv) 6x4D: One non-drive axle and two drive axles where one of the two drive axles is automatically disconnectable such that the axle can switch between 6x2 and 6x4 configurations. You may select this configuration only if at least one of the following is true:

(A) The input and output of the disconnectable axle is mechanically disconnected from the drive shaft and the wheels when the axle is in the 6x2 configuration.

(B) You provide power loss data generated according to § 1037.560 for the combination of both drive axles, where the disconnectable drive axle is in the disconnected configuration.

(3) Drive axle ratio, k_a. If a vehicle is designed with two or more user-selectable axle ratios, use the drive axle ratio that is expected to be engaged for the greatest driving distance. If the vehicle does not have a drive axle, such as a hybrid vehicle with direct electric drive, let $k_a = 1$.

(4) GEM inputs associated with powertrain testing include powertrain family, transmission calibration identifier, test data from § 1037.550, and the powertrain test configuration (dynamometer connected to transmission output or wheel hub). You do not need to identify or provide inputs for transmission gear ratios, fuel map data, or engine torque curves, which would otherwise be required under paragraph (f) of this section.

(h) *Idle speed and idle-reduction technologies.* The following provisions apply for engine idling:

(1) For engines with no adjustable warm idle speed, input vehicle idle speed as the manufacturer's declared warm idle speed. For engines with adjustable warm idle speed, input your vehicle idle speed as follows:

If your vehicle is a . . .	And your engine is subject to . . .	Your default vehicle idle speed is . . .[1]
(i) Heavy HDV	compression-ignition or spark-ignition standards	600 r/min.
(ii) Medium HDV tractor	compression-ignition standards	700 r/min.
(iii) Light HDV or Medium HDV vocational vehicle	compression-ignition standards	750 r/min.

If your vehicle is a . . .	And your engine is subject to . . .	Your default vehicle idle speed is . . .[1]
(iv) Light HDV or Medium HDV	spark-ignition standards	600 r/min.

[1] If the default idle speed is above or below the engine manufacturer's whole range of declared warm idle speeds, use the manufacturer's maximum or minimum declared warm idle speed, respectively, instead of the default value.

(2) Identify whether your vehicle has qualifying idle-reduction technologies, subject to the qualifying criteria in § 1037.660, as follows:

(i) Stop-start technology and automatic engine shutdown systems apply for vocational vehicles. See paragraph (j) of this section for automatic engine shutdown systems for tractors.

(ii) Neutral idle applies for tractors and vocational vehicles.

(i) *Axle, transmission, and torque converter characterization.* You may characterize the axle, transmission, and torque converter using axle efficiency maps as described in § 1037.560, transmission efficiency maps as described in § 1037.565, and torque converter capacity factors and torque ratios as described in § 1037.570 to replace the default values in GEM. If you obtain your test results from the axle manufacturer, transmission manufacturer, torque converter manufacturer or another third party, you must obtain a signed statement from the party supplying those test results to verify that tests were conducted according to the requirements of this part. Such statements are deemed to be submissions to EPA.

(j) *Additional reduction technologies.* Enter input values in GEM as follows to characterize the percentage CO_2 emission reduction corresponding to certain technologies and vehicle configurations, or enter 0:

(1) *Intelligent controls.* Enter 2 for tractors with predictive cruise control. This includes any cruise control system that incorporates satellite-based global-positioning data for controlling operator demand. For other tractors, enter 1.5 if they have neutral coasting, unless good engineering judgment indicates that a lower percentage should apply.

(2) *Accessory load.* Enter the following values related to accessory loads; if more than one item applies, enter the sum of those values:

(i) If vocational vehicles have electrically powered pumps for steering, enter 0.5 for vocational vehicles certified with the Regional duty cycle, and enter 1 for other vocational vehicles.

(ii) If tractors have electrically powered pumps for both steering and engine cooling, enter 1.

(iii) If vehicles have a high-efficiency air conditioning compressor, enter 0.5 for tractors and vocational Heavy HDV, and enter 1 for other vocational vehicles. This includes all electrically powered compressors. It also include mechanically powered compressors if the coefficient of performance improves by 10 percent or greater over the baseline design, consistent with the provisions for improved evaporators and condensers in 40 CFR 86.1868–12(h)(5).

(3) *Tire-pressure systems.* Enter 1.2 for vehicles with automatic tire inflation systems on all axles (1.1 for Multi-Purpose and Urban vocational vehicles). Enter 1.0 for vehicles with tire pressure monitoring systems on all axles (0.9 for Multi-Purpose and Urban vocational vehicles). If vehicles use a mix of the two systems, treat them as having only tire pressure monitoring systems.

(4) *Extended-idle reduction.* Enter values as shown in the following table for sleeper cabs equipped with idle-reduction technology meeting the requirements of § 1037.660 that are designed to automatically shut off the main engine after 300 seconds or less:

TABLE 9 TO § 1037.520—GEM INPUT VALUES FOR AES SYSTEMS

Technology	GEM input values	
	Adjustable	Tamper-resistant
Standard AES system	1	4
With diesel APU	3	4
With battery APU	5	6
With automatic stop-start	3	3
With fuel-operated heater (FOH)	2	3
With diesel APU and FOH	4	5
With battery APU and FOH	5	6
With stop-start and FOH	4	5

(5) *Other.* Additional GEM inputs may apply as follows:

(i) Enter 0.9 and 1.7, respectively, for school buses and coach buses that have at least seven available forward gears.

(ii) If we approve off-cycle technology under § 1037.610 in the form of an improvement factor, enter the improvement factor expressed as a percentage reduction in CO_2 emissions. (*Note:* In the case of approved off-cycle technologies whose benefit is quantified as a g/ton-mile credit, apply the credit to the GEM result, not as a GEM input value.)

(k) *Vehicles with hybrid power take-off.* For vocational vehicles, determine the delta PTO emission result of your engine and hybrid power take-off system as described in § 1037.540.

(l) [Reserved]

(m) *Aerodynamic improvements for vocational vehicles.* For vocational vehicles certified using the Regional duty cycle, enter $\Delta C_d A$ values to account for using aerodynamic devices as follows:

(1) Enter 0.2 for vocational vehicles with an installed rear fairing if the vehicle is at least 7 m long with a minimum frontal area of 8 m^2.

(2) For vehicles at least 11 m long with a minimum frontal area of 9 m^2, enter 0.5 if the vehicle has both skirts and a front fairing, and enter 0.3 if it has only one of those devices.

(3) You may determine input values for these or other technologies based on

aerodynamic measurements as described in § 1037.527.

(n) *Alternate fuels.* For fuels other than those identified in GEM, perform the simulation by identifying the vehicle as being diesel-fueled if the engine is subject to the compression-ignition standard, or as being gasoline-fueled if the engine is subject to the spark-ignition standards. Correct the engine or powertrain fuel map for mass-specific net energy content as described in 40 CFR 1036.535(b).

■ 151. Revise § 1037.525 to read as follows:

§ 1037.525 Aerodynamic measurements for tractors.

This section describes a methodology for quantifying aerodynamic drag for use in determining input values for tractors as described in § 1037.520. This coastdown testing is the reference method for aerodynamic measurements.

(a) *General provisions.* The GEM input for a tractor's aerodynamic performance is a C_d value for Phase 1 and a C_dA value for Phase 2. The input value is measured or calculated for a tractor in a specific test configuration with a trailer, such as a high-roof tractor with a box van meeting the requirements for the standard trailer.

(1) Aerodynamic measurements may involve any of several different procedures. Measuring with different procedures introduces variability, so we identify the coastdown method in § 1037.528 as the primary (or reference) procedure. You may use other procedures with our advance approval as described in paragraph (d) of this section, but we require that you adjust your test results from other test methods to correlate with coastdown test results. All adjustments must be consistent with good engineering judgment. Submit information describing how you quantify aerodynamic drag from coastdown testing, whether or not you use an alternate method.

(2) Test high-roof tractors with a standard trailer as described in § 1037.501(g)(1). Note that the standard trailer for Phase 1 tractors is different from that of later model years. Note also that GEM may model a different configuration than the test configuration, but accounts for this internally. Test low-roof and mid-roof tractors without a trailer; however, you may test low-roof and mid-roof tractors with a trailer to evaluate off-cycle technologies.

(b) *Adjustments to correlate with coastdown testing.* Adjust aerodynamic drag values from alternate methods to be equivalent to the corresponding values from coastdown measurements as follows:

(1) Determine the functional relationship between your alternate method and coastdown testing. Specify this functional relationship as $F_{alt\text{-}aero}$ for a given alternate drag measurement method. The effective yaw angle, ψ_{eff}, is assumed to be zero degrees for Phase 1. For Phase 2, determine ψ_{eff} from coastdown test results using the following equation:

$$F_{alt\text{-}aero} = \frac{C_d A_{coastdown}(\psi_{eff})}{C_d A_{alt}(\psi_{eff})}$$

Eq. 1037.525-1

Where:

$C_dA_{coastdown}(\psi_{eff})$ = the average drag area measured during coastdown at an effective yaw angle, ψ_{eff}.

$C_dA_{alt}(\psi_{eff})$ = the average drag area calculated from an alternate drag measurement method at an effective yaw angle, ψ_{eff}.

(2) Unless good engineering judgment dictates otherwise, assume that coastdown drag is proportional to drag measured using alternate methods and apply a constant adjustment factor, $F_{alt\text{-}aero}$, for a given alternate drag measurement method of similar vehicles.

(3) Determine $F_{alt\text{-}aero}$ by performing coastdown testing and applying your alternate method on the same vehicles. Consider all applicable test data including data collected during selective enforcement audits. Unless we approve another vehicle, one vehicle must be a Class 8 high-roof sleeper cab with a full aerodynamics package pulling a standard trailer. Where you have more than one tractor model meeting these criteria, use the tractor model with the highest projected sales. If you do not have such a tractor model, you may use your most comparable tractor model with our prior approval. In the case of alternate methods other than those specified in this subpart, good engineering judgment may require you to determine your adjustment factor based on results from more than the specified minimum number of vehicles.

(4) Measure the drag area using your alternate method for a Phase 2 tractor used to determine $F_{alt\text{-}aero}$ with testing at yaw angles of 0°, ±1°, ±3°, ±4.5°, ±6°, and ±9° (you may include additional angles), using direction conventions described in Figure 2 of SAE J1252 (incorporated by reference in § 1037.810). Also, determine the drag area at the coastdown effective yaw angle, $C_dA_{alt}(\psi_{eff})$, by taking the average drag area at ψ_{eff} and $-\psi_{eff}$ for your vehicle using the same alternate method.

(5) For Phase 2 testing, determine separate values of $F_{alt\text{-}aero}$ for at least one high-roof day cab and one high-roof sleeper cab for model year 2021, for at least two high-roof day cabs and two high-roof sleeper cabs for model year 2024, and for at least three high-roof day cabs and three high-roof sleeper cabs for model year 2027. These test requirements are cumulative; for example, you may meet these requirements by testing two vehicles to support model year 2021 certification and four additional vehicles to support model year 2023 certification. For any untested tractor models, apply the value of $F_{alt\text{-}aero}$ from the tested tractor model that best represents the aerodynamic characteristics of the untested tractor model, consistent with good engineering judgment. Testing under this paragraph (b)(5) continues to be valid for later model years until you change the tractor model in a way that causes the test results to no longer represent production vehicles. You must also determine unique values of $F_{alt\text{-}aero}$ for low-roof and mid-roof tractors if you determine C_dA values based on low or mid-roof tractor testing as shown in Table 4 of § 1037.520. For Phase 1 testing, if good engineering judgment allows it, you may calculate a single, constant value of $F_{alt\text{-}aero}$ for your whole product line by dividing the coastdown drag area, $C_dA_{coastdown}$, by drag area from your alternate method, C_dA_{alt}.

(6) Determine $F_{alt\text{-}aero}$ to at least three decimal places. For example, if your coastdown testing results in a drag area of 6.430, but your wind tunnel method results in a drag area of 6.200, $F_{alt\text{-}aero}$ would be 1.037 (or a higher value you declare).

(7) If a tractor and trailer cannot be configured to meet the gap requirements specified in § 1037.501(g)(1)(ii), test with the trailer positioned as close as possible to the specified gap dimension and use good engineering judgment to correct the results to be equivalent to a test configuration meeting the specified gap dimension. For example, we may allow you to correct your test output using an approved alternate method or substitute a test vehicle that is capable of meeting the required specifications and is otherwise aerodynamically equivalent. This allowance applies for certification, confirmatory testing, SEA, and all other testing to demonstrate compliance with standards.

(8) You may ask us for preliminary approval of your coastdown testing under § 1037.210. We may witness the testing.

(c) *Yaw sweep corrections.* Aerodynamic features can have a different effectiveness for reducing wind-averaged drag than is predicted by zero-yaw drag. The following procedures describe how to determine a tractor's C_dA values to account for wind-averaged drag as specified in § 1037.520:

(1) Apply the following method for all Phase 2 testing with an alternate method:

(i) Calculate the wind-averaged drag area from the alternate method, $C_dA_{wa\text{-}alt}$, using an average of measurements at −4.5 and +4.5 degrees.

(ii) Determine your wind-averaged drag area, C_dA_{wa}, rounded to one decimal place, using the following equation:

$$C_dA_{wa} = C_dA_{wa\text{-}alt} \cdot F_{alt\text{-}aero}$$

Eq. 1037.525-2

(2) Apply the following method for Phase 2 coastdown testing other than coastdown testing used to establish $F_{alt\text{-}aero}$:

$$C_dA_{wa} = C_dA_{coastdown}(\psi_{eff}) \cdot \frac{C_dA_{wa\text{-}alt}}{C_dA_{alt}(\psi_{eff})}$$

Eq. 1037.525-3

(i) Determine your drag area at the effective yaw angle from coastdown, $C_dA_{coastdown}(\psi_{eff})$.

(ii) Use an alternate method to calculate the ratio of the wind-averaged drag area, $C_dA_{wa\text{-}alt}$ (using an average of measurements at −4.5 and +4.5 degrees) to the drag area at the effective yaw angle, $C_dA_{alt}(\psi_{eff})$.

(iii) Determine your wind-averaged drag area, C_dA_{wa}, rounded to one decimal place, using the following equation:

(3) Different approximations apply for Phase 1. For Phase 1 testing, you may correct your zero-yaw drag area as follows if the ratio of the zero-yaw drag area divided by yaw-sweep drag area for your vehicle is greater than 0.8065 (which represents the ratio expected for a typical Class 8 high-roof sleeper cab):

(i) Determine the zero-yaw drag area, $C_dA_{zero\text{-}yaw}$, and the yaw-sweep drag area for your vehicle using the same alternate method as specified in this subpart. Measure the drag area for 0°, −6°, and +6°. Use the arithmetic mean of the −6° and +6° drag areas as the ±6° drag area, $C_dA_{\pm 6}$.

(ii) Calculate your yaw-sweep correction factor, CF_{ys}, using the following equation:

$$CF_{ys} = \frac{C_dA_{\pm 6} \cdot 0.8065}{C_dA_{zero\text{-}yaw}}$$

Eq. 1037.525-4

(iii) Calculate your corrected drag area for determining the aerodynamic bin by multiplying the measured zero-yaw drag area by CF_{ys}, as determined using Eq. 1037.525–4, as applicable. You may apply the correction factor to drag areas measured using other procedures. For example, apply CF_{ys} to drag areas measured using the coastdown method. If you use an alternate method, apply an alternate correction, $F_{alt\text{-}aero}$, and calculate the final drag area using the following equation:

$$C_dA = F_{alt\text{-}aero} \cdot CF_{ys} \cdot C_dA_{zero\text{-}alt}$$

Eq. 1037.525-5

(iv) You may ask us to apply CF_{ys} to similar vehicles incorporating the same design features.

(v) As an alternative, you may calculate the wind-averaged drag area according to SAE J1252 (incorporated by reference in § 1037.810) and substitute this value into Eq. 1037.525–4 for the ±6° drag area.

(d) *Approval of alternate methods.* You must obtain preliminary approval before using any method other than coastdown testing to quantify aerodynamic drag. We will approve your request if you show that your procedures produce data that are the same as or better than coastdown testing with respect to repeatability and unbiased correlation. Note that the correlation is not considered to be biased if there is a bias before correction, but you remove the bias using $F_{alt\text{-}aero}$. Send your request for approval to the Designated Compliance Officer. Keep records of the information specified in this paragraph (d). Unless we specify otherwise, include this information with your request. You must provide any information we require to evaluate whether you may apply the provisions of this section. Include additional information related to your alternate method as described in §§ 1037.530 through 1037.534. If you use a method other than those specified in this subpart, include all the following information, as applicable:

(1) Official name/title of the procedure.

(2) Description of the procedure.

(3) Cited sources for any standardized procedures that the method is based on.

(4) Description and rationale for any modifications/deviations from the standardized procedures.

(5) Data comparing the procedure to the coastdown reference procedure.

(6) Additional information specified for the alternate methods described in §§ 1037.530 through 1037.534 as applicable to this method (*e.g.,* source location/address, background/history).

■ 152. Amend § 1037.528 by revising the introductory text and paragraphs (a), (c) introductory text, (e) introductory text, (g)(3) introductory text, (h)(3)(i), (h)(6), and (h)(12)(v) to read as follows:

§ 1037.528 Coastdown procedures for calculating drag area (CdA).

The coastdown procedures in this section describe how to calculate drag area, C_dA, for Phase 2 tractors, trailers, and vocational vehicles, subject to the provisions of §§ 1037.525 through 1037.527. These procedures are considered the reference method for tractors, but an alternate method for trailers. Follow the provisions of Sections 1 through 9 of SAE J2263 (incorporated by reference in § 1037.810), with the clarifications and exceptions described in this section. Several of these exceptions are from SAE J1263 (incorporated by reference in § 1037.810). The coastdown procedures in 40 CFR 1066.310 apply instead of the provisions of this section for Phase 1 tractors.

(a) The terms and variables identified in this section have the meaning given in SAE J1263 and SAE J2263 unless specified otherwise.

* * * * *

(c) The test condition specifications described in Sections 7.1 through 7.4 of

SAE J1263 apply, with certain exceptions and additional provisions as described in this paragraph (c). These conditions apply to each run separately.

* * * * *

(e) Measure wind speed, wind direction, air temperature, and air pressure at a recording frequency of 10 Hz, in conjunction with time-of-day data. Use at least one stationary anemometer and suitable data loggers meeting SAE J1263 specifications, subject to the following additional specifications for the anemometer placed along the test surface:

* * * * *

(g) * * *

(3) Correct measured air direction from all the high-speed segments using the wind speed and wind direction measurements described in paragraph (e) of this section as follows:

* * * * *

(h) * * *

(3) * * *

(i) Calculate the mean vehicle speed to represent the start point of each speed range as the arithmetic average of measured speeds throughout the continuous time interval that begins when measured vehicle speed is less than 2.00 mi/hr above the nominal starting speed point and ends when measured vehicle speed reaches 2.00 mi/hr below the nominal starting speed point, expressed to at least two decimal places. Calculate the timestamp corresponding to the starting point of each speed range as the average timestamp of the interval.

* * * * *

(6) For tractor testing, calculate the tire rolling resistance force at high and low speeds for steer, drive, and trailer axle positions, $F_{TRR[speed,axle]}$, and determine ΔF_{TRR}, the rolling resistance difference between 65 mi/hr and 15 mi/hr, for each tire as follows:

(i) Conduct a stepwise coastdown tire rolling resistance test with three tires for each tire model installed on the vehicle using SAE J2452 (incorporated by reference in § 1037.810) for the following test points (which replace the test points in Table 3 of SAE J2452):

TABLE 1 OF § 1037.528—STEPWISE COASTDOWN TEST POINTS FOR DETERMINING TIRE ROLLING RESISTANCE AS A FUNCTION OF SPEED

Step Number	Load (% of max)	Inflation pressure (% of max)
1	20	100
2	55	70
3	85	120
4	85	100
5	100	95

(ii) Calculate FTRR[speed,axle] using the following equation:

$$F_{TRR[speed,axle]} = n_{t,[axle]} \cdot p_{[axle]}^{\alpha} \cdot \left(\frac{L_{[axle]}}{n_{t,[axle]}} \right)^{\beta_{[axle]}} \cdot \left(a_{[axle]} + b_{[axle]} \cdot \overline{v}_{seg[speed]} + c_{[axle]} \cdot \overline{v}_{seg[speed]}^{2} \right)$$

Eq. 1037.528-11

Where:

$n_{t,[axle]}$ = number of tires at the axle position.
$p_{[axle]}$ = the inflation pressure set and measured on the tires at the axle position at the beginning of the coastdown test.
$L_{[axle]}$ = the load over the axle at the axle position on the coastdown test vehicle.
$\alpha_{[axle]}$, $\beta_{[axle]}$, $a_{[axle]}$, $b_{[axle]}$, and $c_{[axle]}$ = regression coefficients from SAE J2452 that are specific to axle position.

Example:

$n_{t,steer} = 2$
$p_{steer} = 758.4$ kPa
$L_{steer} = 51421.2$ N
$\alpha_{steer} = -0.2435$
$\beta_{steer} = 0.9576$
$a_{steer} = 0.0434$
$b_{steer} = 5.4 \cdot 10^{-5}$
$c_{steer} = 5.53 \cdot 10^{-7}$
$n_{t,drive} = 8$
$p_{drive} = 689.5$ kPa
$L_{drive} = 55958.4$ N
$\alpha_{drive} = -0.3146$
$\beta_{drive} = 0.9914$
$a_{drive} = 0.0504$
$b_{drive} = 1.11 \cdot 10^{-4}$
$c_{drive} = 2.86 \cdot 10^{-7}$
$n_{t,trailer} = 8$
$p_{trailer} = 689.5$ kPa
$L_{trailer} = 45727.5$ N
$\alpha_{trailer} = -0.3982$
$\beta_{trailer} = 0.9756$
$a_{trailer} = 0.0656$
$b_{trailer} = 1.51 \cdot 10^{-4}$
$c_{trailer} = 2.94 \cdot 10^{-7}$
$v_{seghi} = 28.86$ m/s = 103.896 km/hr
$v_{seglo} = 5.84$ m/s = 21.024 km/hr

$$F_{TRRhi,steer} = 2 \cdot 758.4^{-0.2435} \cdot \left(\frac{51421.2}{2} \right)^{0.9576} \cdot \left(0.0434 + 5.4 \cdot 10^{5} \cdot 103.896 + 5.53 \cdot 10^{-7} \cdot 103.896^{2} \right)$$

$F_{TRRhi,steer} = 365.6$ N
$F_{TRRhi,drive} = 431.4$ N
$F_{TRRhi,trailer} = 231.7$ N
$F_{TRRlo,steer} = 297.8$ N
$F_{TRRlo,drive} = 350.7$ N
$F_{TRRlo,trailer} = 189.0$ N

(iii) Calculate $F_{TRR[speed]}$ by summing the tire rolling resistance calculations at a given speed for each axle position:

$$F_{TRR[speed]} = F_{TRR,[speed]steer} + F_{TRR,[speed]drive} + F_{TRR,[speed]trailer}$$

Eq. 1037.528-12

Example:

F_{TRRhi} = 365.6 + 431.4 + 231.7 = 1028.7 N

F_{TRRlo} = 297.8 + 350.7 + 189.0 = 837.5 N

(iv) Adjust $F_{TRR[speed]}$ to the ambient temperature during the coastdown segment as follows:

$$F_{TRRadj[speed]} = F_{TRR,[speed]}\left[1 + 0.006 \cdot (24 - \overline{T}_{seg[speed]})\right]$$

Eq. 1037.528-13

Where:

$\overline{T}_{seg[speed]}$ = the average ambient temperature during the coastdown segment, in °C.

Example:

F_{TRRhi} = 1028.7 N
F_{TRRlo} = 837.5 N
$\overline{T}_{seghi}$ = 25.5 °C
$\overline{T}_{seglo}$ = 25.1 °C
$F_{TRRhi,adj}$ = 1 + 0.006·(24 − 25.5)] = 1019.4 N
$F_{TRRlo,adj}$ = 837.5·[1 + 0.006·(24 − 25.1] = 832.0 N

(v) Determine the difference in rolling resistance between 65 mph and 15 mph, ΔF_{TRR}, for each tire. Use good engineering judgment to consider the multiple results. For example, you may ignore the test results for the tires with the highest and lowest differences and use the result from the remaining tire. Determine ΔF_{TRR} as follows:

$$\Delta F_{TRR} = F_{TRRhi,adj} - F_{TRRlo,adj}$$

Eq. 1037.528-14

Example:

ΔF_{TRR} = 1019.4 − 832.0 = 187.4 N

* * * * *

(12) * * *

(v) For the same set of points, recalculate the mean C_dA. This is the final result of the coastdown test, $C_dA_{coastdown}(\psi_{eff})$.

* * * * *

■ 153. Amend § 1037.530 by revising paragraph (d)(7) to read as follows:

§ 1037.530 Wind-tunnel procedures for calculating drag area (C_dA).

* * * * *

(d) * * *

(7) Fan section description: fan type, diameter, power, maximum angular speed, maximum speed, support type, mechanical drive, and sectional total weight.

* * * * *

■ 154. Amend § 1037.532 by revising paragraph (a) to read as follows:

§ 1037.532 Using computational fluid dynamics to calculate drag area (CdA).

* * * * *

(a) For Phase 2 vehicles, use SAE J2966 (incorporated by reference in § 1037.810), with the following clarifications and exceptions:

(1) Vehicles are subject to the requirement to meet standards based on the average of testing at yaw angles of +4.5° and −4.5°; however, you may submit your application for certification with CFD results based on only one of those yaw angles.

(2) For CFD code with a Navier-Stokes based solver, follow the additional steps in paragraph (d) of this section. For Lattice-Boltzmann based CFD code, follow the additional steps in paragraph (e) of this section.

(3) Simulate a Reynolds number of 5.1 million (based on a 102-inch trailer width) and an air speed of 65 mi/hr.

(4) Perform an open-road simulation (not the Wind Tunnel Simulation).

(5) Use a free stream turbulence intensity of 0.0%.

(6) Choose time steps that can accurately resolve intrinsic flow instabilities, consistent with good engineering judgment.

(7) The result must be drag area (C_dA), not drag coefficient (C_d), based on an air speed of 65 mi/hr.

(8) Submit information as described in paragraph (g) of this section.

* * * * *

■ 155. Amend § 1037.534 by revising paragraph (c)(1) and (2), (d)(4)(i), and (f)(4)(iv) to read as follows:

§ 1037.534 Constant-speed procedure for calculating drag area (C_dA).

* * * * *

(c) * * *

(1) Measure torque at each of the drive wheels using a hub torque meter or a rim torque meter. If testing a tractor with two drive axles, you may disconnect one of the drive axles from receiving torque from the driveshaft, in which case you would measure torque at only the wheels that receive torque from the driveshaft. Set up instruments to read engine speed for calculating angular speed at the point of the torque measurements, or install instruments for measuring the angular speed of the wheels directly.

(2) Install instrumentation to measure vehicle speed at 10 Hz, with an accuracy and resolution of 0.1 mi/hr. Also install instrumentation for reading engine speed from the engine's onboard computer.

* * * * *

(d) * * *

(4) * * *

(i) Measure the angular speed of the driveshaft, axle, or wheel where the torque is measured, or calculate it from engine speed in conjunction with gear and axle ratios, as applicable.

* * * * *

(f) * * *

(4) * * *

(iv) Calculate C_dA for each 10 second increment from the 50 mi/hr and 70 mi/hr test segments using the following equation:

$$C_dA_{i[speed]} = \left[\frac{2 \cdot \overline{F}_{aero[speed]}}{\overline{v}^2_{air[speed]}} \cdot \frac{R \cdot \overline{T}}{\overline{p}_{act}}\right]_i$$

Eq. 1037.534-6

Where:

$C_dA_{i[speed]}$ = the mean drag area for each 10 second increment, *i*.
$\overline{F}_{aero[speed]}$ = mean aerodynamic force over a given 10 second increment = $\overline{F}_{RL[speed]} - \overline{F}_{RL10,test}$.
$\overline{V}_{air[speed]}$ = mean aerodynamic force over a given 10 second increment.
R = specific gas constant = 287.058 J/(kg·K).
$\overline{T}$ = mean air temperature.
$\overline{p}_{act}$ = mean absolute air pressure.

Example:

$\overline{F}_{RL70}$ = 4310.6 N
$\overline{F}_{RL10,test}$ = 900.1 N
$\overline{F}_{aero70}$ = 4310.6 − 900.1 = 3410.5 N
$\overline{V}^2_{air70}$ = 1089.5 m²/s²
R = 287.058 J/(kg·K)
$\overline{T}$ = 293.68 K
$\overline{p}_{act}$ = 101300 Pa

$$C_{\mathrm{d}}A_{i70} = \left[\frac{2 \cdot 3410.5}{1089.5} \cdot \frac{287.058 \cdot 293.68}{101300}\right]_{\mathrm{i}}$$

$C_{\mathrm{d}}A_{i70}$ = 5.210 m^2

* * * * *

■ 156. Amend § 1037.540 by revising paragraphs (b)(3) and (8), (d)(2), (e)(2), and (f) to read as follows:

§ 1037.540 Special procedures for testing vehicles with hybrid power take-off.

* * * * *

(b) * * *

(3) Denormalize the PTO duty cycle in appendix II of this part using the following equation:

$$p_{\mathrm{ref}i} = p_i \cdot \left(\overline{p}_{\max} - \overline{p}_{\min}\right) + \overline{p}_{\min}$$

Eq. 1037.540-1

Where:

$p_{\mathrm{ref}i}$ = the reference pressure at each point i in the PTO cycle.

p_i = the normalized pressure at each point i in the PTO cycle (relative to $\overline{p}_{\max}$).

$\overline{p}_{\max}$ = the mean maximum pressure measured in paragraph (b)(2) of this section.

$\overline{p}_{\min}$ = the mean minimum pressure measured in paragraph (b)(2) of this section.

* * * * *

(8) Measured pressures must meet the cycle-validation specifications in the following table for each test run over the duty cycle:

TABLE 1 OF § 1037.540—STATISTICAL CRITERIA FOR VALIDATING EACH TEST RUN OVER THE DUTY CYCLE

Parameter [a]	Pressure
Slope, a_1	$0.950 \leq a_1 \leq 1.030$.
Absolute value of intercept, $\lvert a_0 \rvert$.	≤2.0% of maximum mapped pressure.
Standard error of the estimate, *SEE*.	≤10% of maximum mapped pressure.
Coefficient of determination, r^2.	≥0.970.

[a] Determine values for specified parameters as described in 40 CFR 1065.514(e) by comparing measured values to denormalized pressure values from the duty cycle in appendix II of this part.

* * * * *

(d) * * *

(2) For fractions of a test, use the following equation to calculate the time:

$$t_{\text{test-partial}} = \frac{\sum_{i=1}^{N}\left(p_{\text{circuit-1},i} + p_{\text{circuit-2},i}\right) \cdot \Delta t}{\overline{p}_{\text{circuit-1}} + \overline{p}_{\text{circuit-2}}}$$

Eq. 1037.540-2

Where:

i = an indexing variable that represents one recorded value.

N = number of measurement intervals.

$p_{\text{circuit-1},i}$ = normalized pressure command from circuit 1 of the PTO cycle for each point, i, starting from i = 1.

$p_{\text{circuit-2},i}$ = normalized pressure command from circuit 2 of the PTO cycle for each point, i, starting from i = 1. Let $\overline{p}_{\text{circuit-2}}$ = 0 if there is only one circuit.

$\overline{p}_{\text{circuit-1}}$ = the mean normalized pressure command from circuit 1 over the entire PTO cycle.

$\overline{p}_{\text{circuit-2}}$ = the mean normalized pressure command from circuit 2 over the entire PTO cycle. Let $\overline{p}_{\text{circuit-2}}$ = 0 if there is only one circuit.

Δt = the time interval between measurements. For example, at 100 Hz, Δt = 0.0100 seconds.

* * * * *

(e) * * *

(2) Divide the CO_2 mass from the PTO cycle by the distance determined in paragraph (d)(4) of this section and the standard payload as defined in § 1037.801 to get the CO_2 emission rate in g/ton-mile. For plug-in hybrid electric vehicles follow paragraph (f)(3) of this section to calculate utility factor weighted CO_2 emissions in g/ton-mile.

* * * * *

(f) For Phase 2, calculate the delta PTO fuel results for input into GEM during vehicle certification as follows:

(1) Calculate fuel consumption in grams per test, m_{fuelPTO}, without rounding, as described in 40 CFR 1036.540(d)(4) for both the conventional vehicle and the charge-sustaining and charge-depleting portions of the test for the hybrid vehicle as applicable.

(2) Divide the fuel mass by the applicable distance determined in paragraph (d)(4) of this section and the appropriate standard payload as defined in § 1037.801 to determine the fuel rate in g/ton-mile.

(3) For plug-in hybrid electric vehicles calculate the utility factor weighted fuel consumption in g/ton-mile, as follows:

(i) Determine the utility factor fraction for the PTO system from the table in appendix V of this part using interpolation based on the total time of the charge-depleting portion of the test as determined in paragraphs (c)(6) and (d)(3) of this section.

(ii) Weight the emissions from the charge-sustaining and charge-depleting portions of the test using the following equation:

$$m_{\text{fuelPTO,plug-in}} = m_{\text{PTO,CD}} \cdot UF_{\text{t,CD}} + m_{\text{PTO,CS}} \cdot \left(1 - UF_{\text{t,CD}}\right)$$

Eq. 1037.540-3

Where:

$m_{\text{PTO,CD}}$ = mass of fuel per ton-mile while in charge-depleting mode.

$UF_{\text{t,CD}}$ = utility factor fraction at time t_{CD} as determined in paragraph (f)(3)(i) of this section.

$m_{\text{PTO,CS}}$ = mass of fuel per ton-mile while in charge-sustaining mode.

(4) Calculate the difference between the conventional PTO emissions result and the hybrid PTO emissions result for input into GEM.

* * * * *

■ 157. Revise § 1037.550 to read as follows:

§ 1037.550 Powertrain testing.

This section describes the procedure to measure fuel consumption and create engine fuel maps by testing a powertrain that includes an engine coupled with a transmission, drive axle, and hybrid components or any assembly with one or more of those hardware elements. Engine fuel maps are part of demonstrating compliance with Phase 2 vehicle standards under this part; the powertrain test procedure in this section is one option for generating this fuel-mapping information as described in 40

CFR 1036.503. Additionally, this powertrain test procedure is one option for certifying hybrids to the engine standards in 40 CFR 1036.108.

(a) *General provisions.* The following provisions apply broadly for testing under this section:

(1) Measure NO_X emissions as described in paragraph (k) of this section. Include these measured NO_X values any time you report to us your greenhouse gas emissions or fuel consumption values from testing under this section.

(2) The procedures of 40 CFR part 1065 apply for testing in this section except as specified. This section uses engine parameters and variables that are consistent with 40 CFR part 1065.

(3) Powertrain testing depends on models to calculate certain parameters. You can use the detailed equations in this section to create your own models, or use the GEM HIL model (incorporated by reference in § 1037.810) to simulate vehicle hardware elements as follows:

(i) Create driveline and vehicle models that calculate the angular speed setpoint for the test cell dynamometer, $f_{nref,dyno}$, based on the torque measurement location. Use the detailed equations in paragraph (f) of this section, the GEM HIL model's driveline and vehicle submodels, or a combination of the equations and the submodels. You may use the GEM HIL model's transmission submodel in paragraph (f) of this section to simulate a transmission only if testing hybrid engines.

(ii) Create a driver model or use the GEM HIL model's driver submodel to simulate a human driver modulating the throttle and brake pedals to follow the test cycle as closely as possible.

(iii) Create a cycle-interpolation model or use the GEM HIL model's cycle submodel to interpolate the duty-cycles and feed the driver model the duty-cycle reference vehicle speed for each point in the duty-cycle.

(4) The powertrain test procedure in this section is designed to simulate operation of different vehicle configurations over specific duty cycles. See paragraphs (h) and (j) of this section.

(5) For each test run, record engine speed and torque as defined in 40 CFR 1065.915(d)(5) with a minimum sampling frequency of 1 Hz. These engine speed and torque values represent a duty cycle that can be used for separate testing with an engine mounted on an engine dynamometer under § 1037.551, such as for a selective enforcement audit as described in § 1037.301.

(6) For hybrid powertrains with no plug-in capability, correct for the net energy change of the energy storage device as described in 40 CFR 1066.501. For PHEV powertrains, follow 40 CFR 1066.501 to determine End-of-Test for charge-depleting operation. You must get our approval in advance for your utility factor curve; we will approve it if you can show that you created it from sufficient in-use data of vehicles in the same application as the vehicles in which the PHEV powertrain will be installed.

(b) *Test configuration.* Select a powertrain for testing as described in § 1037.235 or 40 CFR 1036.235 as applicable. Set up the engine according to 40 CFR 1065.110 and 1065.405(b). Set the engine's idle speed to the minimum warm-idle speed. If warm idle speed is not adjustable, simply let the engine operate at its warm idle speed.

(1) The default test configuration consists of a powertrain with all components upstream of the axle. This involves connecting the powertrain's output shaft directly to the dynamometer or to a gear box with a fixed gear ratio and measuring torque at the axle input shaft. You may instead set up the dynamometer to connect at the wheel hubs and measure torque at that location. The preceding sentence may apply if your powertrain configuration requires it, such as for hybrid powertrains or if you want to represent the axle performance with powertrain test results.

(2) For testing hybrid engines, connect the engine's crankshaft directly to the dynamometer and measure torque at that location.

(c) *Powertrain temperatures during testing.* Cool the powertrain during testing so temperatures for oil, coolant, block, head, transmission, battery, and power electronics are within the manufacturer's expected ranges for normal operation. You may use electronic control module outputs to comply with this paragraph (c). You may use auxiliary coolers and fans.

(d) *Engine break in.* Break in the engine according to 40 CFR 1065.405, the axle assembly according to § 1037.560, and the transmission according to § 1037.565. You may instead break in the powertrain as a complete system using the engine break in procedure in 40 CFR 1065.405.

(e) *Dynamometer setup.* Set the dynamometer to operate in speed-control mode (or torque-control mode for hybrid engine testing at idle, including idle portions of transient duty cycles). Record data as described in 40 CFR 1065.202. Command and control the dynamometer speed at a minimum of 5 Hz, or 10 Hz for testing engine hybrids. Run the vehicle model to calculate the dynamometer setpoints at a rate of at least 100 Hz. If the dynamometer's command frequency is less than the vehicle model dynamometer setpoint frequency, subsample the calculated setpoints for commanding the dynamometer setpoints.

(f) *Driveline and vehicle model.* Use the GEM HIL model's driveline and vehicle submodels or the equations in this paragraph (f) to calculate the dynamometer speed setpoint, $f_{nref,dyno}$, based on the torque measurement location. Note that the GEM HIL model is configured to set the accessory load to zero and it comes configured with the tire slip model disabled.

(1) *Driveline model with a transmission in hardware.* For testing with torque measurement at the axle input shaft or wheel hubs, calculate, $f_{nref,dyno}$, using the GEM HIL model's driveline submodel or the following equation:

$$f_{nrefi,dyno} = \frac{k_{a[speed]} \cdot v_{refi}}{2 \cdot \pi \cdot r_{[speed]}}$$

Eq. 1037.550-1

Where:

$k_{a[speed]}$ = drive axle ratio as determined in paragraph (h) of this section. Set $k_{a[speed]}$ equal to 1.0 if torque is measured at the wheel hubs.

v_{refi} = simulated vehicle reference speed as calculated in paragraph (f)(3) of this section.

$r_{[speed]}$ = tire radius as determined in paragraph (h) of this section.

(2) *Driveline model with a simulated transmission.* For testing with the torque measurement at the engine's crankshaft, $f_{nref,dyno}$ is the dynamometer target speed from the GEM HIL model's transmission submodel. You may request our approval to change the transmission submodel, as long as the changes do not affect the gear selection logic. Before testing, initialize the transmission model with the engine's measured torque curve and the applicable steady-state fuel map from the GEM HIL model. You may request our approval to input your own steady-state fuel map. Configure the torque converter to simulate neutral idle when using this procedure to generate engine fuel maps in 40 CFR 1036.503 or to perform the Supplemental Emission Test (SET) testing under 40 CFR 1036.505. You may change engine commanded torque at idle to better represent CITT for transient testing under 40 CFR 1036.510. You may change the

simulated engine inertia to match the inertia of the engine under test. We will evaluate your requests under paragraph (f)(3) of this section based on your demonstration that that the adjusted testing better represents in-use operation.

(i) The transmission submodel needs the following model inputs:

(A) Torque measured at the engine's crankshaft.

(B) Engine estimated torque determined from the electronic control module or by converting the instantaneous operator demand to an instantaneous torque in N·m.

(C) Dynamometer mode when idling (speed-control or torque-control).

(D) Measured engine speed when idling.

(E) Transmission output angular speed, $f_{ni,\text{transmission}}$, calculated as follows:

$$f_{ni,\text{transmission}} = \frac{k_{a[\text{speed}]} \cdot v_{refi}}{2 \cdot \pi \cdot r_{[\text{speed}]}}$$

Eq. 1037.550-2

Where:

$k_{a[\text{speed}]}$ = drive axle ratio as determined in paragraph (h) of this section.

v_{refi} = simulated vehicle reference speed as calculated in paragraph (f)(3) of this section.

$r_{[\text{speed}]}$ = tire radius as determined in paragraph (h) of this section.

(ii) The transmission submodel generates the following model outputs:

(A) Dynamometer target speed.

(B) Dynamometer idle load.

(C) Transmission engine load limit.

(D) Engine speed target.

(3) *Vehicle model.* Calculate the simulated vehicle reference speed, vrefi, using the GEM HIL model's vehicle submodel or the equations in this paragraph (f)(3):

$$v_{refi} = \left(\begin{array}{l} \frac{k_a \cdot T_{i-1}}{r} \cdot \left(Eff_{\text{axle}} \right) - \\ \left(M \cdot g \cdot C_{rr} \cdot \cos\left(\text{atan}\left(G_{i-1} \right) \right) + \frac{\rho \cdot C_d A}{2} \cdot v_{\text{ref},i-1}^2 \right) - F_{\text{brake},i-1} - F_{\text{grade},i-1} \end{array} \right) \cdot \frac{\Delta t_{i-1}}{M + M_{\text{rotating}}} + v_{\text{ref},i-1}$$

Eq. 1037.550-3

Where:

i = a time-based counter corresponding to each measurement during the sampling period. Let $v_{ref1} = 0$; start calculations at $i = 2$. A 10-minute sampling period will generally involve 60,000 measurements.

T = instantaneous measured torque at the axle input, measured at the wheel hubs, or simulated by the GEM HIL model's transmission submodel.

Effaxle = axle efficiency. Use Effaxle = 0.955 for $T \geq 0$, and use Effaxle = 1/0.955 for $T < 0$. Use Effaxle = 1.0 if torque is measured at the wheel hubs.

M = vehicle mass for a vehicle class as determined in paragraph (h) of this section.

g = gravitational constant = 9.80665 m/s^2.

C_{rr} = coefficient of rolling resistance for a vehicle class as determined in paragraph (h) of this section.

G_{i-1} = the percent grade interpolated at distance, D_{i-1}, from the duty cycle in appendix IV to this part corresponding to measurement (i–1).

$$D_{i-1} = \sum_{i=1}^{N} \left(v_{\text{ref},i-1} \cdot \Delta t_{i-1} \right)$$

Eq. 1037.550-4

ρ = air density at reference conditions. Use ρ = 1.1845 kg/m^3.

C_dA = drag area for a vehicle class as determined in paragraph (h) of this section.

$F_{\text{brake},i-1}$ = instantaneous braking force applied by the driver model.

$$F_{\text{grade},i-1} = M \cdot g \cdot \sin\left(\text{atan}\left(G_{i-1} \right) \right)$$

Eq. 1037.550-5

Δt = the time interval between measurements. For example, at 100 Hz, $\Delta t = 0.0100$ seconds.

M_{rotating} = inertial mass of rotating components. Let M_{rotating} = 340 kg for vocational Light HDV or vocational Medium HDV. See paragraph (h) of this section for tractors and for vocational Heavy HDV.

(4) *Example.* The following example illustrates a calculation of $f_{\text{nref,dyno}}$ using paragraph (f)(1) of this section where torque is measured at the axle input shaft. This example is for a vocational Light HDV or vocational Medium HDV with 6 speed automatic transmission at B speed (Test 4 in Table 2 of 40 CFR 1036.540).

$k\alpha_B = 4.0$

$r_B = 0.399$ m

$T_{999} = 500.0$ N·m

$C_{rr} = 7.7$ kg/tonne = $7.7 \cdot 10^{-3}$ kg/kg

$M = 11408$ kg

$C_dA = 5.4$ m^2

$G_{999} = 0.39\% = 0.0039$

$$D_{999} = \sum_{i=0}^{998} \left(19.99 \cdot 0.01 + 20.0 \cdot 0.01 + \ldots + v_{\text{ref},998} \cdot \Delta t_{998} \right) = 1792 \text{ m}$$

$F_{\text{brake},999} = 0$ N

$v_{\text{ref},999} = 20.0$ m/s

$F_{\text{grade},999} = 11408 \cdot 9.81 \cdot \sin(\text{atan}(0.0039)) = 436.5$ N

$\Delta t = 0.0100$ s

$M_{\text{rotating}} = 340$ kg

$$v_{\text{ref1000}} = \left(\frac{4.0 \cdot 500.0}{0.399} \cdot (0.955) - \left(11408 \cdot 9.80665 \cdot 7.7 \cdot 10^{-3} \cdot \cos\left(\text{atan}\left(0.0039\right)\right) + \frac{1.1845 \cdot 5.4}{2} \cdot 20.0^{2} \right) - 0 - 436.5 \right) \cdot \frac{0.0100}{11408 + 340} + 20.0$$

$$v_{\text{ref1000}} = 20.00189 \text{ m/s}$$

$$f_{\text{nref1000,dyno}} = \frac{4.0 \cdot 20.00189}{2 \cdot 3.14 \cdot 0.399} = 31.93 \text{ r/s} = 1915.8 \text{ r/min}$$

(g) *Driver model.* Use the GEM HIL model's driver submodel or design a driver model to simulate a human driver modulating the throttle and brake pedals. In either case, tune the model to follow the test cycle as closely as possible meeting the following specifications:

(1) The driver model must meet the speed requirements for operation over the highway cruise cycles as described in § 1037.510 and for operation over the transient cycle as described in 40 CFR 1066.425(b). The exceptions in 40 CFR 1066.425(b)(4) apply to the transient cycle and the highway cruise cycles.

(2) Send a brake signal when operator demand is zero and vehicle speed is greater than the reference vehicle speed from the test cycle. Include a delay before changing the brake signal to prevent dithering, consistent with good engineering judgment.

(3) Allow braking only if operator demand is zero.

(4) Compensate for the distance driven over the duty cycle over the course of the test. Use the following equation to perform the compensation in real time to determine your time in the cycle:

$$t_{\text{cycle}i} = \sum_{i=1}^{N} \left(\left(\frac{v_{\text{vehicle},i\text{-}1}}{v_{\text{cycle},i\text{-}1}} \right) \cdot \Delta t_{i\text{-}1} \right)$$

Eq. 1037.550-6

Where:

v_{vehicle} = measured vehicle speed.

v_{cycle} = reference speed from the test cycle. If $v_{\text{cycle},i\text{-}1} < 1.0$ m/s, set $v_{\text{cycle},i\text{-}1} = v_{\text{vehicle},i\text{-}1}$.

(h) *Vehicle configurations to evaluate for generating fuel maps as defined in 40 CFR 1036.503.* Configure the driveline and vehicle models from paragraph (f) of this section in the test cell to test the powertrain. Simulate multiple vehicle configurations that represent the range of intended vehicle applications. Use at least three equally spaced axle ratios or tire sizes and three different road loads (nine configurations), or at least four equally spaced axle ratios or tire sizes and two different road loads (eight configurations). Select axle ratios to represent the full range of expected vehicle installations.

(1) Determine the vehicle model inputs for M, M_{rotating}, $C_{\text{d}}\text{A}$, and C_{rr} for a set of vehicle configurations as described in 40 CFR 1036.540(c)(3). Instead of selecting axle ratios and tire sizes based on the range of intended vehicle applications as described in this paragraph (h), you may select axle ratios and tire sizes such that the ratio of engine speed to vehicle speed covers the range of ratios of minimum and maximum engine speed to vehicle speed when the transmission is in top gear for the vehicles in which the powertrain will be installed. Note that you do not have to use the same axle ratios and tire sizes for each GEM regulatory subcategory.

(2) For hybrid powertrain systems where the transmission will be simulated, use the transmission parameters defined in Table 1 of 40 CFR 1036.540 to determine transmission type and gear ratio. Use a fixed transmission efficiency of 0.95. The GEM HIL transmission model uses a transmission parameter file for each test that includes the transmission type, gear ratios, lockup gear, torque limit per gear from Table 1 of 40 CFR 1036.540, and the values from 40 CFR 1036.503(b)(4) and (c).

(i) [Reserved]

(j) *Duty cycles to evaluate.* Operate the powertrain over each of the duty cycles specified in § 1037.510(a)(2), and for each applicable vehicle configuration from paragraph (h) of this section. Determine cycle-average powertrain fuel maps by testing the powertrain using the procedures in 40 CFR 1036.540(d) with the following exceptions:

(1) Understand ''engine'' to mean ''powertrain''.

(2) If the preceding duty cycle does not end at 0 mi/hr, transition between duty cycles by decelerating at a rate of 2 mi/hr/s at 0% grade until the vehicle reaches zero speed. Shut off the powertrain. Prepare the powertrain and test cell for the next duty-cycle. Start the next duty-cycle within 60 to 180 seconds after shutting off the powertrain. Do not run the powertrain or change its physical state before starting the next duty cycle. If the next duty cycle begins at 0 mi/hr vehicle speed, key on the vehicle and start the duty-cycle after 10 seconds, otherwise key on the vehicle and transition to the next duty cycle by accelerating at a rate of 1 mi/hr/s at 0% grade for vehicle configurations given in Table 2 of 40 CFR 1036.540 or 2 mi/hr/s at 0% grade for vehicle configurations given in Tables 3 and 4 of 40 CFR 1036.540, then stabilize for 10 seconds at the initial duty cycle conditions.

(3) Calculate cycle work using GEM or the speed and torque from the driveline and vehicle models from paragraph (f) of this section to determine the sequence of duty cycles.

(4) Calculate the mass of fuel consumed for idle duty cycles as described in paragraph (n) of this section.

(5) Warm up the powertrain as described in 40 CFR 1036.527(c)(1).

(k) *Measuring NO_X emissions.* Measure NO_X emissions for each sampling period in grams. You may perform these measurements using a NO_X emission-measurement system that meets the requirements of 40 CFR part 1065, subpart J. If a system malfunction prevents you from measuring NO_X emissions during a test under this section but the test otherwise gives valid results, you may consider this a valid test and omit the NO_X emission measurements; however, we may require you to repeat the test if we determine that you inappropriately voided the test with respect to NO_X emission measurement.

(l) [Reserved]

(m) *Measured output speed validation.* For each test point, validate the measured output speed with the corresponding reference values. If the range of reference speed is less than 10

percent of the mean reference speed, you need to meet only the standard error of the estimate in Table 1 of this section. You may delete points when the vehicle is stopped. If your speed measurement is not at the location of f_{nref}, correct your measured speed using the constant speed ratio between the two locations. Apply cycle-validation criteria for each separate transient or highway cruise cycle based on the following parameters:

TABLE 1 OF § 1037.550—STATISTICAL CRITERIA FOR VALIDATING DUTY CYCLES

Parameter [a]	Speed control
Slope, a_1	$0.990 \leq a_1 \leq 1.010$.
Absolute value of intercept, $\lvert a_0 \rvert$.	≤2.0% of maximum f_{nref} speed.
Standard error of the estimate, *SEE*.	≤2.0% of maximum f_{nref} speed.
Coefficient of determination, r^2.	≥0.990.

[a] Determine values for specified parameters as described in 40 CFR 1065.514(e) by comparing measured and reference values for $f_{nref,dyno}$.

(n) *Fuel consumption at idle.* Determine the mass of fuel consumed at idle for the applicable duty cycles described in § 1037.510(a)(2) as follows:

(1) Measure fuel consumption with a fuel flow meter and report the mean idle fuel mass flow rate for each duty cycle as applicable, $\overline{\dot{m}}_{fuelidle}$.

(2) If you do not measure fuel mass flow rate, calculate the idle fuel mass flow rate for each duty cycle, $\overline{\dot{m}}_{fuelidle}$, for each set of vehicle settings, as follows:

$$\overline{\dot{m}}_{fuelidle} = \frac{M_C}{w_{Cmeas}} \cdot \left(\overline{\dot{n}}_{exh} \cdot \frac{\overline{x}_{Ccombdry}}{1 + \overline{x}_{H2Oexhdry}} - \overline{\dot{m}}_{CO2DEF} \frac{}{M_{CO2}} \right)$$

Eq. 1037.550-7

Where:

M_C = molar mass of carbon.

w_{Cmeas} = carbon mass fraction of fuel (or mixture of test fuels) as determined in 40 CFR 1065.655(d), except that you may not use the default properties in Table 1 of 40 CFR 1065.655 to determine α, β, and w_C for liquid fuels.

$\overline{\dot{n}}_{exh}$ = the mean raw exhaust molar flow rate from which you measured emissions according to 40 CFR 1065.655.

$\overline{x}_{Ccombdry}$ = the mean concentration of carbon from fuel and any injected fluids in the exhaust per mole of dry exhaust.

$\overline{x}_{H2Oexhdry}$ = the mean concentration of H_2O in exhaust per mole of dry exhaust.

$\overline{\dot{m}}_{CO2DEF}$ = the mean CO_2 mass emission rate resulting from diesel exhaust fluid decomposition over the duty cycle as determined in 40 CFR 1036.535(b)(7). If your engine does not use diesel exhaust fluid, or if you choose not to perform this correction, set $\overline{\dot{m}}_{CO2DEF}$ equal to 0.

M_{CO2} = molar mass of carbon dioxide.

Example:

M_C = 12.0107 g/mol
w_{Cmeas} = 0.867
$\overline{\dot{n}}_{exh}$ = 25.534 mol/s
$\overline{x}_{Ccombdry} = 2.805 \cdot 10^{-3}$ mol/mol
$\overline{x}_{H2Oexhdry} = 3.53 \cdot 10^{-2}$ mol/mol
$\overline{\dot{m}}_{CO2DEF}$ = 0.0726 g/s
M_{CO2} = 44.0095

$$\overline{\dot{m}}_{fuelidle} = \frac{12.0107}{0.867} \cdot \left(25.534 \cdot \frac{2.805 \cdot 10^{-3}}{1 + 3.53 \cdot 10^{-2}} - \frac{0.0726}{44.0095} \right)$$

$\overline{\dot{m}}_{fuelidle}$ = 0.405 g/s = 1458.6 g/hr

(o) *Create GEM inputs.* Use the results of powertrain testing to determine GEM inputs for the different simulated vehicle configurations as follows:

(1) Correct the measured or calculated fuel masses, $m_{fuel[cycle]}$, and mean idle fuel mass flow rates, $\overline{\dot{m}}_{fuelidle}$, if applicable, for each test result to a mass-specific net energy content of a reference fuel as described in 40 CFR 1036.535(f), replacing $\overline{\dot{m}}_{fuel}$ with $m_{fuel[cycle]}$ where applicable in Eq. 1036.535–4.

(2) Declare fuel masses, $m_{fuel[cycle]}$, in g/cycle. In addition, declare mean fuel mass flow rate for each applicable idle duty cycle, $\overline{\dot{m}}_{fuelidle}$. These declared values may not be lower than any corresponding measured values determined in this section. If you use multiple measurement methods as allowed in 40 CFR 1036.540(d), follow 40 CFR 1036.535(g) regarding the use of direct and indirect fuel measurements and the carbon balance error verification. These declared values, which serve as emission standards, collectively represent the powertrain fuel map for certification.

(3) Calculate powertrain output speed per unit of vehicle speed, $\left[\frac{\overline{f}_{\text{npowertrain}}}{\overline{v}_{\text{powertrain}}}\right]_{[\text{cycle}]}$, using one of the following methods:

(i) For testing with torque measurement at the axle input shaft:

$$\left[\frac{\overline{f}_{\text{npowertrain}}}{\overline{v}_{\text{powertrain}}}\right]_{[\text{cycle}]} = \frac{k_{\text{a}}}{2 \cdot \pi \cdot r_{[\text{speed}]}}$$

Eq. 1037.550-8

Example:

$k_{\text{a}} = 4.0$

$r_{\text{B}} = 0.399$ m

$$\left[\frac{\overline{f}_{\text{npowertrain}}}{\overline{v}_{\text{powertrain}}}\right]_{\text{transienttest4}} = \frac{4.0}{2 \cdot 3.14 \cdot 0.399} = 1.596 \text{ r/m}$$

(ii) For testing with torque measurement at the wheel hubs, use Eq. 1037.550–8 setting k_{a} equal to 1.

(iii) For testing with torque measurement at the engine's crankshaft:

$$\left[\frac{\overline{f}_{\text{npowertrain}}}{\overline{v}_{\text{powertrain}}}\right]_{[\text{cycle}]} = \frac{\overline{f}_{\text{nengine}}}{\overline{v}_{\text{ref}}}$$

Eq. 1037.550-9

Where:

$\bar{f}_{\text{nengine}}$ = average engine speed when vehicle speed is at or above 0.100 m/s.
$\bar{v}_{\text{ref}}$ = average simulated vehicle speed at or above 0.100 m/s.

Example:

$\bar{f}_{\text{nengine}} = 1870$ r/min = 31.17 r/s
$\bar{v}_{\text{ref}} = 19.06$ m/s

$$\left[\frac{\overline{f}_{\text{npowertrain}}}{\overline{v}_{\text{powertrain}}}\right]_{\text{transienttest4}} = \frac{31.17}{19.06} = 1.635 \text{ r/m}$$

(4) Calculate positive work, $W_{[\text{cycle}]}$, as the work over the duty cycle at the axle input shaft, wheel hubs, or the engine's crankshaft, as applicable, when vehicle speed is at or above 0.100 m/s.

(5) Calculate engine idle speed, by taking the average engine speed measured during the transient cycle test while the vehicle speed is below 0.100 m/s.

(6) The following table illustrates the GEM data inputs corresponding to the different vehicle configurations for a given duty cycle:

Table 2 of §1037.550 – Example vehicle configuration test result output matrix for Heavy HDV

	VEHICLE CONFIGURATION NUMBER								
	1	2	3	4	5	6	7	8	9
$m_{\text{fuel[cycle]}}$									
$\left[\frac{\overline{f}_{\text{npowertrain}}}{\overline{v}_{\text{powertrain}}}\right]_{\text{[cycle]}}$									
$W_{\text{[cycle]}}$									
$\bar{f}_{\text{nidle}}$[a]									

[a]Idle speed applies only for the transient duty cycle.

■ 158. Amend § 1037.551 by revising paragraph (b) to read as follows:

§ 1037.551 Engine-based simulation of powertrain testing.

* * * * *

(b) Operate the engine over the applicable engine duty cycles corresponding to the vehicle cycles specified in § 1037.510(a)(2) for powertrain testing over the applicable vehicle simulations described in § 1037.550(i). Warm up the engine to prepare for the transient test or one of the highway cruise cycles by operating it one time over one of the simulations of the corresponding duty cycle. Warm up the engine to prepare for the idle test by operating it over a simulation of the 65-mi/hr highway cruise cycle for 600 seconds. Within 60 seconds after concluding the warm up cycle, start emission sampling while the engine operates over the duty cycle. You may perform any number of test runs directly in succession once the engine is warmed up. Perform cycle validation as described in 40 CFR 1065.514 for engine speed, torque, and power.

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■ 159. Amend § 1037.555 by revising paragraphs (d), (e), and (f) to read as follows:

§ 1037.555 Special procedures for testing Phase 1 hybrid systems.

* * * * *

(d) Calculate the transmission output shaft's angular speed target for the driver model, $f_{\text{nref,driver}}$, from the linear speed associated with the vehicle cycle using the following equation:

$$f_{\text{nref}i,\text{driver}} = \frac{v_{\text{cycle}i} \cdot k_{\text{a}}}{2 \cdot \pi \cdot r}$$

Eq. 1037.555-1

Where:

$v_{\text{cycle}i}$ = vehicle speed of the test cycle for each point, i, starting from $i = 1$.
k_{a} = drive axle ratio, as declared by the manufacturer.
r = radius of the loaded tires, as declared by the manufacturer.

(e) Use speed control with a loop rate of at least 100 Hz to program the dynamometer to follow the test cycle, as follows:

(1) Calculate the transmission output shaft's angular speed target for the dynamometer, $f_{\text{nref,dyno}}$, from the measured linear speed at the dynamometer rolls using the following equation:

$$f_{\text{nref}_{\text{i,dyno}}} = \frac{v_{\text{ref}_{\text{i}}} \cdot k_{\text{a}}}{2 \cdot \pi \cdot r}$$

Eq. 1037.555-2

$$v_{\text{ref}i} = \left(\frac{k_{\text{a}} \cdot T_{i-1}}{r} - \left(A + B \cdot v_{\text{ref},i-1} + C \cdot v_{\text{ref},i-1}^2 \right) - F_{\text{brake},i-1} \right) \cdot \frac{t_{\text{i}} - t_{i-1}}{M} + v_{\text{ref},i-1}$$

Eq. 1037.555-3

Where:

T = instantaneous measured torque at the transmission output shaft.
F_{brake} = instantaneous brake force applied by the driver model to add force to slow down the vehicle.
t = elapsed time in the driving schedule as measured by the dynamometer, in seconds.

(2) For each test, validate the measured transmission output shaft's speed with the corresponding reference values according to 40 CFR 1065.514(e). You may delete points when the vehicle is stopped. Perform the validation based on speed values at the transmission output shaft. For steady-state tests (55 mi/hr and 65 mi/hr cruise), apply cycle-validation criteria by treating the sampling periods from the two tests as a continuous sampling period. Perform this validation based on the following parameters:

TABLE 1 OF § 1037.555—STATISTICAL CRITERIA FOR VALIDATING DUTY CYCLES

Parameter	Speed control
Slope, a_1	$0.950 \le a_1 \le 1.030$.
Absolute value of intercept, $\lvert a_0 \rvert$.	≤2.0% of maximum test speed.

TABLE 1 OF § 1037.555—STATISTICAL CRITERIA FOR VALIDATING DUTY CYCLES—Continued

Parameter	Speed control
Standard error of the estimate, *SEE*.	≤5% of maximum test speed.
Coefficient of determination, r^2.	≥0.970.

(f) Send a brake signal when operator demand is equal to zero and vehicle speed is greater than the reference vehicle speed from the test cycle. Set a delay before changing the brake state to prevent the brake signal from dithering,

consistent with good engineering judgment.

* * * * *

■ 160. Revise § 1037.560 to read as follows:

§ 1037.560 Axle efficiency test.

This section describes a procedure for mapping axle efficiency through a determination of axle power loss.

(a) You may establish axle power loss maps based on testing any number of axle configurations within an axle family as specified in § 1037.232. You may share data across a family of axle configurations, as long as you test the axle configuration with the lowest efficiency from the axle family; this will generally involve testing the axle with the highest axle ratio. For vehicles with tandem drive axles, always test each drive axle separately. For tandem axles that can be disconnected, test both single-drive and tandem axle configurations. This includes 4×4 axles where one of the axles is disconnectable. Alternatively, you may analytically derive power loss maps for untested configurations within the same axle family as described in paragraph (h) of this section.

(b) Prepare an axle assembly for testing as follows:

(1) Select an axle assembly with less than 500 hours of operation before testing. Assemble the axle in its housing, along with wheel ends and bearings.

(2) If you have a family of axle assemblies with different axle ratios, you may test multiple configurations using a common axle housing, wheel ends, and bearings.

(3) Install the axle assembly on the dynamometer with an input shaft angle perpendicular to the axle.

(i) For axle assemblies with or without a locking main differential, test the axle assembly using one of the following methods:

(A) Lock the main differential and test it with one electric motor on the input shaft and a second electric motor on the output side of the output shaft that has the speed-reduction gear attached to it.

(B) Test with the main differential unlocked and with one electric motor on the input shaft and electric motors on the output sides of each of the output shafts.

(ii) For drive-through tandem-axle setups, lock the longitudinal and inter-wheel differentials.

(4) Add gear oil according to the axle manufacturer's instructions. If the axle manufacturer specifies multiple gear oils, select the one with the highest viscosity at operating temperature. You may use a lower-viscosity gear oil if we approve that as critical emission-related maintenance under § 1037.125. Fill the gear oil to a level that represents in-use operation. You may use an external gear oil conditioning system, as long as it does not affect measured values.

(5) Install equipment for measuring the bulk temperature of the gear oil in the oil sump or a similar location. Report temperature to the nearest 0.1 °C.

(6) Break in the axle assembly using good engineering judgment. Maintain gear oil temperature at or below 100 °C throughout the break-in period.

(7) You may drain the gear oil following the break-in procedure and repeat the filling procedure described in paragraph (b)(4) of this section. We will follow your practice for our testing.

(c) Measure input and output speed and torque as described in 40 CFR 1065.210(b). You must use a speed-measurement system that meets an accuracy of ±0.05% of point. Use torque transducers that meet an accuracy requirement of ±1.0 N·m for unloaded test points and ±0.2% of the maximum tested axle input torque or output torque, respectively, for loaded test points. Calibrate and verify measurement instruments according to 40 CFR part 1065, subpart D. Command speed and torque at a minimum of 10 Hz, and record all data, including bulk oil temperature, as 1 Hz mean values.

(d) The test matrix consists of test points representing output torque and wheel speed values meeting the following specifications:

(1) Output torque includes both loaded and unloaded operation. For measurement involving unloaded output torque, also called spin loss testing, the wheel end is not connected to the dynamometer and is left to rotate freely; in this condition the input torque (to maintain constant wheel speed) equals the power loss. Test axles at a range of output torque values, as follows:

(i) 0, 500, 1000, 2000, 3000, and 4000 N·m for single drive axle applications for tractors and for vocational Heavy HDV with a single drive axle.

(ii) 0, 250, 500, 1000, 1500, and 2000 N·m for tractors, for vocational Heavy HDV with tandem drive axles, and for all vocational Light HDV or vocational Medium HDV.

(iii) You may exclude values that exceed your axle's maximum torque rating.

(2) Determine maximum wheel speed corresponding to a vehicle speed of 65 mi/hr based on the smallest tire (as determined using § 1037.520(c)(1)) that will be used with the axle. If you do not know the smallest tire size, you may use a default size of 650 r/mi. Use wheel angular speeds for testing that include 50 r/min and speeds in 100 r/min increments that encompass the maximum wheel speed (150, 250, etc.).

(3) You may test the axle assembly at additional speed and torque setpoints.

(e) Determine axle efficiency using the following procedure:

(1) Maintain ambient temperature between (15 and 35) °C throughout testing. Measure ambient temperature within 1.0 m of the axle assembly. Verify that critical axle settings (such as bearing preload, backlash, and oil sump level) are within specifications before and after testing.

(2) Maintain gear oil temperature at (81 to 83) °C. You may alternatively specify a lower range by shifting both temperatures down by the same amount. We will test your axle assembly using the same temperature range you specify for your testing. You may use an external gear oil conditioning system, as long as it does not affect measured values.

(3) Use good engineering judgment to warm up the axle assembly by operating it until the gear oil is within the specified temperature range.

(4) Stabilize operation at each point in the test matrix for at least 10 seconds, then measure the input torque, output torque, and wheel angular speed for at least 10 seconds. Record arithmetic mean values for all three parameters over the measurement period. Calculate power loss as described in paragraph (f) of this section based on these values for mean input torque, $\bar{T}_{in}$, mean output torque, $\bar{T}_{out}$, and mean wheel angular speed, $\bar{f}_{nwheel}$, at each test point.

(5) Perform the map sequence described in paragraph (e)(4) of this section three times. Remove torque from the input shaft and allow the axle to come to a full stop before each repeat measurement.

(6) You may need to perform additional testing at a given test point based on a calculation of a confidence interval to represent repeatability at a 95% confidence level for that test point. If the confidence limit is greater than 0.10% for loaded tests or greater than 0.05% for unloaded tests, perform another repeat of measurements at that test point and recalculate the repeatability for the whole set of test results. Continue testing until the confidence interval is at or below the specified values for all test points. Calculate a confidence interval representing the repeatability in establishing a 95% confidence level using the following equation:

$$Confidence\ Interval = \frac{1.96 \cdot \sigma_{Ploss}}{\sqrt{N} \cdot P_{max}} \cdot 100\ \%$$

Eq. 1037.560-1

Where:

σ_{Ploss} = standard deviation of power loss values at a given torque-speed setting (see 40 CFR 1065.602(c)).

N = number of repeat tests.

P_{max} = maximum output torque setting from the test matrix.

Example:

σ_{Ploss} = 0.1650 kW

N = 3

P_{max} = 314.2000 kW

$$Confidence\ Interval = \frac{1.96 \cdot 0.1650}{\sqrt{3} \cdot 314.2000} \cdot 100\ \%$$

Confidence Interval = 0.0594%

(f) Calculate the mean power loss, $\bar{\bar{P}}_{loss}$, at each test point as follows:

(1) Calculate $\bar{P}_{loss}$ for each measurement at each test point as follows:

$$\bar{P}_{loss} = \bar{T}_{in} \cdot \bar{f}_{nwheel} \cdot k_a - \bar{T}_{out} \cdot \bar{f}_{nwheel}$$

Eq. 1037.560-2

Where:

$\bar{T}_{in}$ = mean input torque from paragraph (e)(4) of this section.

$\bar{f}_{nwheel}$ = mean wheel angular speed from paragraph (e)(4) of this section in rad/s.

k_a = drive axle ratio, expressed to at least the nearest 0.001.

$\bar{T}_{out}$ = mean output torque from paragraph (e)(4) of this section. Let $\bar{T}_{out}$ = 0 for all unloaded tests.

(2) Calculate $\bar{\bar{P}}_{loss}$ as the mean power loss from all measurements at a given test point.

(3) The following example illustrates a calculation of $\bar{\bar{P}}_{loss}$:

$\bar{T}_{in,1}$ = 845.10 N·m

$\bar{f}_{nwheel,1}$ = 100.0 r/min = 10.472 rad/s

k_a = 3.731

$\bar{T}_{out,1}$ = 3000.00 N·m

$\bar{P}_{loss,1}$ = 845.10 · 10.472 · 3.731 − 3000.00 · 10.472

$\bar{P}_{loss,1}$ = 1602.9 W = 1.6029 kW

$\bar{P}_{loss,2}$ = 1601.9 W = 1.6019 kW

$\bar{P}_{loss,3}$ = 1603.9 W = 1.6039 kW

$$\bar{\bar{P}}_{loss} = \frac{1.6029 + 1.6019 + 1.6039}{3} = 1.6029\ \text{kW}$$

(g) Create a table with the mean power loss, $\bar{\bar{P}}_{loss}$, corresponding to each test point for input into GEM. Express wheel angular speed in r/min to one decimal place; express output torque in N·m to two decimal places; express power loss in kW to four decimal places.

(1) Record $\bar{\bar{P}}_{loss}$, $\bar{\bar{T}}_{out}$, and $\bar{\bar{f}}_{nin}$ for each test point. Calculate $\bar{\bar{T}}_{out}$ and $\bar{\bar{f}}_{nin}$ for each test point by calculating the arithmetic average of $\bar{T}_{out}$ and $\bar{f}_{nin}$ for all the repeat tests at that test point.

(2) Record declared mean power loss values at or above the corresponding value calculated in paragraph (f) of this section. Use good engineering judgment to select values that will be at or above the mean power loss values for your production axles. Vehicle manufacturers will use these declared mean power loss values for certification. For vehicles with tandem drive axles, the GEM input is the sum of the power loss and output torque from the individual axles. For vehicles with a disconnectable axle, GEM uses separate inputs for single and tandem drive axle configurations.

(h) You may analytically derive axle power loss maps for untested configurations within an axle family as follows:

(1) Test at least three axle assemblies within the same family representing at least the smallest axle ratio, the largest axle ratio, and an axle ratio closest to the arithmetic mean from the two other tested axle assemblies. Test each axle assembly as described in this section at the same speed and torque setpoints.

(2) Perform a second-order least-squares regression between declared power loss and axle ratio using each speed and torque setpoint described in paragraph (d) of this section for your tested axle assemblies. Use the declared power loss values from paragraph (g) of this section; however, for purposes of analytically deriving power loss maps under this paragraph (h), you must select declared values for the largest and smallest axle ratios in the axle family that are adjusted relative to the calculated values for mean power loss by the same multiplier. If the coefficent of the second-order term is negative, include testing from additional axle ratios, or increase your declared power loss for the largest and smallest axle ratios by the same multiplier as needed for the second-order term to become positive.

(3) Determine $\bar{\bar{P}}_{loss}$ of untested axles for each speed and torque setpoint based on a linear relationship between your declared power loss and axle ratio as follows:

(i) Determine the slope of the correlation line by connecting the declared power loss values for the smallest and largest axle ratios.

(ii) Fix the intercept for the correlation line by shifting it upward as needed so all the declared power loss values are on the correlation line or below it. Note that for cases involving three tested axle assemblies, the correlation line will always include the declared power loss for the smallest and largest axle ratio.

(4) Select declared values of $_{loss}$ for untested configurations that are at or above the values you determined in paragraph (h)(3) of this section.

■ 161. Revise § 1037.565 to read as follows:

§ 1037.565 Transmission efficiency test.

This section describes a procedure for mapping transmission efficiency through a determination of transmission power loss.

(a) You may establish transmission power loss maps based on testing any number of transmission configurations within a transmission family as specified in § 1037.232. You may share data across any configurations within the family, as long as you test the transmission configuration with the lowest efficiency from the transmission family. Alternatively, you may ask us to approve analytically derived power loss maps for untested configurations within the same transmission family (see § 1037.235(h)).

(b) Prepare a transmission for testing as follows:

(1) Select a transmission with less than 500 hours of operation before testing.

(2) Mount the transmission to the dynamometer such that the geared shaft in the transmission is aligned with the input shaft from the dynamometer.

(3) Add transmission oil according to the transmission manufacturer's instructions. If the transmission manufacturer specifies multiple transmission oils, select the one with the highest viscosity at operating temperature. You may use a lower-viscosity transmission oil if we approve it as critical emission-related maintenance under § 1037.125. Fill the transmission oil to a level that represents in-use operation. You may use an external transmission oil conditioning system, as long as it does not affect measured values.

(4) Include any internal and external pumps for hydraulic fluid and lubricating oil in the test. Determine the work required to drive an external pump according to 40 CFR 1065.210.

(5) Install equipment for measuring the bulk temperature of the transmission oil in the oil sump or a similar location.

(6) If the transmission is equipped with a torque converter, lock it for all testing performed in this section.

(7) Break in the transmission using good engineering judgment. Maintain transmission oil temperature at (87 to 93) °C for automatic transmissions and transmissions having more than two friction clutches, and at (77 to 83) °C for all other transmissions. You may ask us to approve a different range of transmission oil temperatures if you have data showing that it better represents in-use operation.

(c) Measure input and output shaft speed and torque as described in 40 CFR 1065.210(b). You must use a speed measurement system that meets an accuracy of ±0.05% of point. Accuracy requirements for torque transducers depend on the highest loaded transmission input and output torque as described in paragraph (d)(2) of this section. Use torque transducers for torque input measurements that meet an accuracy requirement of ±0.2% of the highest loaded transmission input for loaded test points and ±0.1% of the highest loaded transmission input torque for unloaded test points. For torque output measurements, torque transducers must meet an accuracy requirement of ±0.2% of the highest loaded transmission output torque for each gear ratio. Calibrate and verify measurement instruments according to 40 CFR part 1065, subpart D. Command speed and torque at a minimum of 10 Hz, and record all data, including bulk oil temperature, at a minimum of 1 Hz mean values.

(d) Test the transmission at input shaft speeds and torque setpoints as described in this paragraph (d). You may exclude lower gears from testing; however, you must test all the gears above the highest excluded gear. GEM will use default values for any untested gears. The test matrix consists of test points representing transmission input shaft speeds and torque setpoints meeting the following specifications for each tested gear:

(1) Test at the following transmission input shaft speeds:

(i) 600.0 r/min or transmission input shaft speed when paired with the engine operating at idle.

(ii) The transmission's maximum rated input shaft speed. You may alternatively select a value representing the highest expected in-use transmission input shaft speed.

(iii) Three equally spaced intermediate speeds. The intermediate speed points may be adjusted to the nearest 50 or 100 r/min. You may test any number of additional speed setpoints to improve accuracy.

(2) Test at certain transmission input torque setpoints as follows:

(i) Include one unloaded (zero-torque) setpoint.

(ii) Include one loaded torque setpoint between 75% and 105% of the transmission's maximum rated input shaft torque. However, you may use a lower torque setpoint as needed to avoid exceeding dynamometer torque limits, as long as testing accurately represents in-use performance. If your loaded torque setpoint is below 75% of the transmission's maximum rated input shaft torque, you must demonstrate that the sum of time for all gears where demanded engine torque is between your maximum torque setpoint and 75% of the transmission's maximum rated input shaft torque is no more than 10% of the time for each vehicle drive cycle specified in this subpart. This demonstration must be made available upon request.

(iii) You may test at any number of additional torque setpoints to improve accuracy.

(iv) Note that GEM calculates power loss between tested or default values by linear interpolation, except that GEM may extrapolate outside of measured values to account for testing at torque setpoints below 75% as specified in paragraph (d)(2)(ii) of this section.

(3) In the case of transmissions that automatically go into neutral when the vehicle is stopped, also perform tests at 600 r/min and 800 r/min with the transmission in neutral and the transmission output fixed at zero speed.

(e) Determine transmission efficiency using the following procedure:

(1) Maintain ambient temperature between (15 and 35) °C throughout testing. Measure ambient temperature within 1.0 m of the transmission.

(2) Maintain transmission oil temperature as described in paragraph (b)(7) of this section.

(3) Use good engineering judgment to warm up the transmission according to the transmission manufacturer's specifications.

(4) Perform unloaded transmission tests by disconnecting the transmission output shaft from the dynamometer and letting it rotate freely. If the transmission adjusts pump pressure based on whether the vehicle is moving or stopped, set up the transmission for unloaded tests to operate as if the vehicle is moving.

(5) For transmissions that have multiple configurations for a given gear ratio, such as dual-clutch transmissions that can pre-select an upshift or downshift, set the transmission to operate in the configuration with the greatest power loss. Alternatively, test

in each configuration and use good engineering judgment to calculate a weighted power loss for each test point under this section based on field data that characterizes the degree of in-use operation in each configuration.

(6) For a selected gear, operate the transmission at one of the test points from paragraph (d) of this section for at least 10 seconds. Measure the speed and torque of the input and output shafts for at least 10 seconds. You may omit measurement of output shaft speeds if your transmission is configured to not allow slip. Calculate arithmetic mean values for mean input shaft torque, $\bar{T}_{in}$, mean output shaft torque, $\bar{T}_{out}$, mean input shaft speed, f_{nin}, and mean output shaft speed, f_{nout}, for each point in the test matrix for each test. Repeat this stabilization, measurement, and calculation for the other speed and torque setpoints from the test matrix for the selected gear in any sequence. Calculate power loss as described in paragraph (f) of this section based on mean speed and torque values at each test point.

(7) Repeat the procedure described in paragraph (e)(6) of this section for all gears, or for all gears down to a selected gear. This section refers to an ''operating condition'' to represent operation at a test point in a specific gear.

(8) Perform the test sequence described in paragraphs (e)(6) and (7) of this section three times. You may do this repeat testing at any given test point before you perform measurements for the whole test matrix. Remove torque from the transmission input shaft and bring the transmission to a complete stop before each repeat measurement.

(9) You may need to perform additional testing at a given operating condition based on a calculation of a confidence interval to represent repeatability at a 95% confidence level at that operating condition. If the confidence interval is greater than 0.10% for loaded tests or greater than 0.05% for unloaded tests, perform another measurement at that operating condition and recalculate the repeatability for the whole set of test results. Continue testing until the confidence interval is at or below the specified values for all operating conditions. As an alternative, for any operating condition that does not meet this repeatability criterion, you may determine a maximum power loss instead of calculating a mean power loss as described in paragraph (g) of this section. Calculate a confidence interval representing the repeatability in establishing a 95% confidence level using the following equation:

$$Confidence\ Interval = \frac{1.96 \cdot \sigma_{Ploss}}{\sqrt{N} \cdot P_{rated}} \cdot 100\ \%$$

Eq. 1037.565-1

Where:

σ_{Ploss} = standard deviation of power loss values at a given operating condition (see 40 CFR 1065.602(c)).

N = number of repeat tests for an operating condition.

P_{rated} = the transmission's rated input power for a given gear. For testing in neutral, use the value of P_{rated} for the top gear.

Example:

σ_{Ploss} = 0.1200 kW
N = 3
P_{rated} = 314.2000 kW

$$Confidence\ Interval = \frac{1.96 \cdot 0.1650}{\sqrt{3} \cdot 314.2000} \cdot 100\ \%$$

Confidence Interval = 0.0432%

(f) Calculate the mean power loss, $_{loss}$, at each operating condition as follows:

(1) Calculate $\bar{P}_{loss}$ for each measurement at each operating condition as follows:

$$\overline{P}_{loss} = \overline{T}_{in} \cdot \overline{f}_{nin} - \overline{T}_{out} \cdot \overline{f}_{nout}$$

Eq. 1037.565-2

Where:

$\bar{T}_{in}$ = mean input shaft torque from paragraph (e)(6) of this section.

f_{nin} = mean input shaft speed from paragraph (e)(6) of this section in rad/s.

$\bar{T}_{out}$ = mean output shaft torque from paragraph (e)(6) of this section. Let $\bar{T}_{out}$= 0 for all unloaded tests.

f_{nout} = mean output shaft speed from paragraph (e)(6) of this section in rad/s. Let f_{nout} = 0 for all tests with the transmission in neutral. See paragraph (f)(2) of this section for calculating f_{nout} as a function of f_{nin} instead of measuring f_{nout}.

(2) For transmissions that are configured to not allow slip, you may calculate f_{nout} based on the gear ratio using the following equation:

$$\overline{f}_{nout} = \frac{\overline{f}_{nin}}{k_g}$$

Eq. 1037.565-3

Where:

k_g = transmission gear ratio, expressed to at least the nearest 0.001.

(3) Calculate $_{loss}$ as the mean power loss from all measurements at a given operating condition.

(4) The following example illustrates a calculation of $_{loss}$:

$\bar{T}_{in,1}$ = 1000.0 N·m
$f_{nin,1}$ = 1000 r/min = 104.72 rad/sec
$\bar{T}_{out,1}$ = 2654.5 N·m
$f_{nout,1}$ = 361.27 r/min = 37.832 rad/s
$\bar{P}_{loss,1} = 1000.0 \cdot 104.72 - 2654.5 \cdot 37.832$
$\bar{P}_{loss,1}$ = 4295 W = 4.295 kW
$\bar{P}_{loss,2}$ = 4285 W = 4.285 kW
$_{loss,3}$ = 4292 W = 4.292 kW

$$\overline{\overline{P}}_{loss} = \frac{4.295 + 4.285 + 4.292}{3} = 4.291\ \text{kW}$$

(g) Create a table with the mean power loss, $_{loss}$, corresponding to each operating condition for input into GEM. Also include power loss in neutral for each tested engine's speed, if applicable. Express transmission input speed in r/min to one decimal place; express input torque in N·m to two decimal places; express power loss in kW to four decimal places. Record the following values:

(1) Recored $\overline{\overline{P}}_{loss}$, $\overline{\overline{T}}_{in}$, and $\overline{\overline{f}}_{nin}$ for each operating condition meeting the repeatability criterion in in paragraph (e)(9) of this section. Calculate $\overline{\overline{T}}_{in}$ and $\overline{\overline{f}}_{nin}$ for each operating condition by calculating the arithmetic average of $\overline{T}_{in}$ and $\overline{f}_{nin}$ for all the repeat tests at that operating condition.

(2) For any operating condition not meeting the repeatability criterion in paragraph (e)(9) of this section, record the maximum value of $\bar{P}_{loss}$ for that operating condition along with the corresponding values of $\bar{T}_{in}$, and $\bar{f}_{nin}$.

(h) Record declared power loss values at or above the corresponding value calculated in paragraph (f) of this section. Use good engineering judgment to select values that will be at or above the mean power loss values for your production transmissions. Vehicle manufacturers will use these declared mean power loss values for certification.

■ 162. Add § 1037.570 to read as follows:

§ 1037.570 Procedures to characterize torque converters.

GEM includes input values related to torque converters. This section describes a procedure for mapping a torque converter's capacity factors and torque ratios over a range of operating conditions. You may ask us to approve analytically derived input values based on this testing for additional untested configurations as described in § 1037.235(h).

(a) Prepare a torque converter for testing as follows:

(1) Select a torque converter with less than 500 hours of operation before the start of testing.

(2) If the torque converter has a locking feature, unlock it for all testing performed under this section. If the torque converter has a slipping lockup clutch, you may ask us to approve a different strategy based on data showing that it represents better in-use operation.

(3) Mount the torque converter with a transmission to the dynamometer in series or parallel arrangement or mount the torque converter without a transmission to represent a series configuration.

(4) Add transmission oil according to the torque converter manufacturer's instructions, with the following additional specifications:

(i) If the torque converter manufacturer specifies multiple transmission oils, select the one with the highest viscosity at operating temperature. You may use a lower-viscosity transmission oil if we approve that as critical emission-related maintenance under § 1037.125.

(ii) Fill the transmission oil to a level that represents in-use operation. If you are testing the torque converter without the transmission, keep output pressure and the flow rate of transmission oil into the torque converter within the torque converter manufacturer's limits.

(iii) You may use an external transmission oil conditioning system, as long as it does not affect measured values.

(5) Install equipment for measuring the bulk temperature of the transmission oil in the oil sump or a similar location and at the torque converter inlet. If the torque converter is tested without a transmission, measure the oil temperature at the torque converter inlet.

(6) Break in the torque converter and transmission (if applicable) using good engineering judgment. Maintain transmission oil temperature at (87 to 93) °C. You may ask us to approve a different range of transmission oil temperatures if you have data showing that it better represents in-use operation.

(b) Measure pump and turbine shaft speed and torque as described in 40 CFR 1065.210(b). You must use a speed measurement system that meets an accuracy of ±0.1% of point or ±1 r/min, whichever is greater. Use torque transducers that meet an accuracy of ±1.0% of the torque converter's maximum rated input and output torque, respectively. Calibrate and verify measurement instruments according to 40 CFR part 1065, subpart D. Command speed and torque at a minimum of 10 Hz. Record all speed and torque data at a minimum of 1 Hz mean values. Note that this section relies on the convention of describing the input shaft as the pump and the output shaft as the turbine shaft.

(c) Determine torque converter characteristics based on a test matrix using either constant input speed or constant input torque as follows:

(1) *Constant input speed.* Test at constant input speed as follows:

(i) Select a fixed pump speed, f_{npum}, between (1000 and 2000) r/min.

(ii) Test the torque converter at multiple speed ratios, v, in the range of $v = 0.00$ to $v = 0.95$. Use a step width of 0.10 for the range of $v = 0.00$ to 0.60 and 0.05 for the range of $v = 0.60$ to 0.95. Calculate speed ratio, v, as turbine shaft speed divided by pump speed.

(2) *Constant input torque.* Test at constant input torque as follows:

(i) Set the pump torque, T_{pum}, to a fixed positive value at $f_{npum} = 1000$ r/min with the torque converter's turbine shaft locked in a non-rotating state (*i.e.,* turbine's speed, n_{tur}, = 0 r/min).

(ii) Test the torque converter at multiple speed ratios, v, in the range of $v = 0.00$ up to a value of f_{ntur} that covers the usable range of v. Use a step width of 0.10 for the range of $v = 0.00$ to 0.60 and 0.05 for the range of $v = 0.60$ to 0.95.

(3) You may limit the maximum speed ratio to a value below 0.95 if you have data showing this better represents in-use operation. You must use the step widths defined in paragraph (c)(1) or (2) of this section and include the upper limit as a test point. If you choose a value less than 0.60, you must test at least seven evenly distributed points between $v = 0$ and your new upper speed ratio.

(d) Characterize the torque converter using the following procedure:

(1) Maintain ambient temperature between (15 and 35) °C throughout testing. Measure ambient temperature within 1.0 m of the torque converter.

(2) Maintain transmission oil temperature as described in paragraph (a)(6) of this section. You may use an external transmission oil conditioning system, as long as it does not affect measured values.

(3) Use good engineering judgment to warm up the torque converter according to the torque converter manufacturer's specifications.

(4) Test the torque converter at constant input speed or constant input torque as described in paragraph (c) of this section. Operate the torque converter at $v = 0.00$ for (5 to 60) seconds, then measure pump torque, turbine shaft torque, angular pump speed, angular turbine shaft speed, and the transmission oil temperature at the torque converter inlet for (5 to 15) seconds. Calculate arithmetic mean values for pump torque, $\bar{T}_{pum}$, turbine shaft torque, $\bar{T}_{tur}$, angular pump speed, $\bar{f}_{npum}$, and angular turbine shaft speed, f_{ntur}, over the measurement period. Repeat this stabilization, measurement, and calculation for the other speed ratios from the test matrix in order of increasing speed ratio. Adjust the speed ratio by increasing the angular turbine shaft speed.

(5) Complete a test run by performing the test sequence described in paragraph (d)(4) of this section two times.

(6) Invalidate the test run if the difference between the pair of mean torque values for the repeat tests at any test point differ by more than ±1 N·m or by more than ±5% of the average of those two values. This paragraph (d)(6) applies separately for mean pump torque and mean turbine shaft torque at each test point.

(7) Invalidate the test run if any calculated value for mean angular pump speed does not stay within ±5 r/min of the speed setpoint or if any calculated value for mean pump torque does not stay within ±5 N·m of the torque setpoint.

(e) Calculate the mean torque ratio, , at each tested speed ratio, v, as follows:

(1) Calculate $\bar{\mu}$ at each tested speed ratio as follows:

$$\bar{\mu} = \frac{\bar{T}_{tur}}{\bar{T}_{pum}}$$

Eq. 1037.570-1

Where:

$\bar{T}_{tur}$ = mean turbine shaft torque from paragraph (d)(4) of this section.

$\bar{T}_{pum}$ = mean pump torque from paragraph (d)(4) of this section.

(2) Calculate as the average of the two values of $\bar{\mu}$ at each tested speed ratio.

(3) The following example illustrates a calculation of :

$\bar{T}_{tur,v=0,1}$ = 332.4 N·m

$\bar{T}_{pum,v=0,1}$ = 150.8 N·m

$\bar{T}_{tur,v=0,2}$ = 333.6 N·m

$\bar{T}_{pum,v=0,2}$ = 150.3 N·m

$$\bar{\mu}_{v=0,1} = \frac{332.4}{150.8} = 2.20$$

$$\bar{\mu}_{v=0,2} = \frac{333.6}{150.3} = 2.22$$

$$\bar{\bar{\mu}}_{v=0} = \frac{2.20 + 2.22}{2} = 2.21$$

(f) Calculate the mean capacity factor, , at each tested speed ratio, v, as follows:

(1) Calculate at each tested speed ratio as follows:

$$\bar{K} = \frac{f_{npum}}{\sqrt{\bar{T}_{pum}}}$$

Eq. 1037.570-2

Where:

$\bar{f}_{npum}$ = mean angular pump speed from paragraph (d)(4) of this section.

$\bar{T}_{pum}$ = mean pump torque from paragraph (d)(4) of this section.

(2) Calculate as the average of the two values of $\bar{K}$ at each tested speed ratio.

(3) The following example illustrates a calculation of :

$\bar{f}_{npum,v=0,1}\bar{f}_{npum,v=0,2}$ = 1000.0 r/min

$\bar{T}_{pum,v=0,1}$ = 150.8 N·m

$$\bar{K}_{v=0,1} = \frac{1000.0}{\sqrt{150.8}} = 81.43 \text{ r/}(\text{min} \cdot (\text{N} \cdot \text{m})^{0.5})$$

$$\bar{T}_{pum,v=0,2} = 150.4 \text{ N} \cdot \text{m}$$

$$\bar{K}_{v=0,2} = \frac{1000.0}{\sqrt{150.4}} = 81.54 \text{ r/}(\text{min} \cdot (\text{N} \cdot \text{m})^{0.5})$$

$$\bar{\bar{K}}_{v=0} = \frac{81.43 + 81.54}{2} = 81.49 \text{ r/}(\text{min} \cdot (\text{N} \cdot \text{m})^{0.5})$$

(g) Create a table of GEM inputs showing and at each tested speed ratio, v. Express to two decimal places; express to one decimal place; express v to two decimal places.

■ 163. Amend § 1037.601 by revising paragraph (a)(2) to read as follows:

§ 1037.601 General compliance provisions.

(a) * * *

(2) The provisions of 40 CFR 1068.105(a) apply for vehicle manufacturers installing engines certified under 40 CFR part 1036 as further limited by this paragraph (a)(2). If new engine emission standards apply in a given model year, you may install normal inventories of engines from the preceding model year under the provisions of 40 CFR 1068.105(a) through March 31 of that year without our approval; you may not install such engines after March 31 of that year unless we approve it in advance. Installing such engines after March 31 without our prior approval is

considered to be prohibited stockpiling of engines. In a written request for our approval, you must describe how your circumstances led you and your engine supplier to have normal inventories of engines that were not used up in the specified time frame. We will approve your request for up to three additional months to install engines under this paragraph (a)(2) if we determine that the excess inventory is a result of unforeseeable circumstances and should not be considered circumvention of emission standards. We will limit this approval to a certain number of engines consistent with your normal production and inventory practices. Note that 40 CFR 1068.105(a) allows vehicle manufacturers to use up only normal inventories of engines meeting less stringent standards; if, for example, a vehicle manufacturer's normal practice is to receive a shipment of engines every two weeks, it will deplete its potential to install previous-tier engines under this paragraph (a)(2) well before March 31 in the year that new standards apply.

* * * * *

■ 164. Amend § 1037.615 by revising paragraph (f) to read as follows:

§ 1037.615 Advanced technologies.

* * * * *

(f) For electric vehicles and for fuel cells powered by hydrogen, calculate CO_2 credits using an FEL of 0 g/ton-mile.

* * * * *

■ 165. Amend § 1037.621 by revising paragraph (g) introductory text to read as follows:

§ 1037.621 Delegated assembly.

* * * * *

(g) We may allow certifying vehicle manufacturers to authorize dealers or distributors to reconfigure/recalibrate vehicles after the vehicles have been introduced into commerce if they have not yet been delivered to the ultimate purchaser as follows:

* * * * *

■ 166. Amend § 1037.635 by revising paragraph (c)(1) introductory text to read as follows:

§ 1037.635 Glider kits and glider vehicles.

* * * * *

(c) * * *

(1) The allowance in this paragraph (c) applies only for the following engines:

* * * * *

■ 167. Amend § 1037.660 by revising paragraphs (a)(2) and (b) to read as follows:

§ 1037.660 Idle-reduction technologies.

* * * * *

(a) * * *

(2) *Neutral idle.* Phase 2 vehicles with hydrokinetic torque converters paired with automatic transmissions qualify for neutral-idle credit in GEM modeling if the transmission reduces torque equivalent to shifting into neutral throughout the interval during which the vehicle's brake pedal is depressed and the vehicle is at a zero-speed condition (beginning within five seconds of the vehicle reaching zero speed with the brake depressed). If a vehicle reduces torque partially but not enough to be equivalent to shifting to neutral, you may use the provisions of § 1037.610(g) to apply for an appropriate partial emission reduction; this may involve A to B testing with the powertrain test procedure in § 1037.550 or the spin-loss portion of the transmission efficiency test in § 1037.565.

* * * * *

(b) *Override conditions.* The system may limit activation of the idle-reduction technology while any of the conditions of this paragraph (b) apply. These conditions allow the system to delay engine shutdown, adjust engine restarting, or delay disengaging transmissions, but do not allow for resetting timers. Engines may restart and transmissions may re-engage during override conditions if the vehicle is set up to do this automatically. We may approve additional override criteria as needed to protect the engine and vehicle from damage and to ensure safe vehicle operation.

(1) For AES systems on tractors, the system may delay shutdown—

(i) When an exhaust emission control device is regenerating. The period considered to be regeneration for purposes of this allowance must be consistent with good engineering judgment and may differ in length from the period considered to be regeneration for other purposes. For example, in some cases it may be appropriate to include a cool down period for this purpose but not for infrequent regeneration adjustment factors.

(ii) When the vehicle's main battery state-of-charge is not sufficient to allow the main engine to be restarted.

(iii) When the vehicle's transmission, fuel, oil, or engine coolant temperature is too low or too high according to the manufacturer's specifications for protecting against system damage. This allows the engine to continue operating until it is in a predefined temperature range, within which the shutdown sequence of paragraph (a) of this section would resume.

(iv) When the vehicle's main engine is operating in power take-off (PTO) mode. For purposes of this paragraph (b), an engine is considered to be in PTO mode when a switch or setting designating PTO mode is enabled.

(v) When external ambient conditions prevent managing cabin temperatures for the driver's safety.

(vi) When necessary while servicing the vehicle, provided the deactivation of the AES system is accomplished using a diagnostic scan tool. The system must be automatically reactivated when the engine is shut down for more than 60 minutes.

(2) For AES systems on vocational vehicles, the system may limit activation—

(i) When any condition specified in paragraphs (b)(1)(i) through (v) of this section applies.

(ii) When the engine compartment is open.

(3) For neutral idle, the system may delay shifting the transmission to neutral—

(i) When the system meets the PTO conditions specified in paragraph (b)(1)(iv) of this section.

(ii) When the transmission is in reverse gear.

(iii) When the vehicle is ascending or descending a road with grade at or above 6.0%.

(4) For stop-start, the system may limit activation—

(i) When any condition specified in paragraph (b)(2) or (b)(3)(ii) or (iii) of this section applies.

(ii) When air brake pressure is too low according to the manufacturer's specifications for maintaining vehicle-braking capability.

(iii) When an automatic transmission is in ''park'' or ''neutral'' and the parking brake is engaged.

(iv) When recent vehicle speeds indicate an abnormally high shutdown and restart frequency, such as with congested driving. For example, a vehicle not exceeding 10 mi/hr for the previous 300 seconds or since the most recent engine start would be a proper basis for overriding engine shutdown. You may also design this override to protect against system damage or malfunction of safety systems.

(v) When the vehicle detects that a system or component is worn or malfunctioning in a way that could reasonably prevent the engine from restarting, such as low battery voltage.

(vi) When the steering angle is at or near the limit of travel.

(vii) When flow of diesel exhaust fluid is limited due to freezing.

(viii) When a sensor failure could prevent the anti-lock braking system from properly detecting vehicle speed.

(ix) When a protection mode designed to prevent component failure is active.

(x) When a fault on a system component needed for starting the engine is active.

* * * * *

■ 168. Amend § 1037.665 by revising paragraph (c) to read as follows:

§ 1037.665 Production and in-use tractor testing.

* * * * *

(c) We may approve your request to perform alternative testing that will provide equivalent or better information compared to the specified testing. For example, we may allow you to provide CO_2 data from in-use operation or from manufacturer-run on-road testing as long as it allows for reasonable year-to-year comparisons and includes testing from production vehicles. We may also direct you to do less testing than we specify in this section.

* * * * *

■ 169. Amend § 1037.670 by revising paragraphs (a) and (b) to read as follows:

§ 1037.670 Optional CO_2 emission standards for tractors at or above 120,000 pounds GCWR.

(a) You may certify tractors at or above 120,000 pounds GCWR to the following CO_2 standards instead of the Phase 2 CO_2 standards of § 1037.106:

TABLE 1 OF § 1037.670—OPTIONAL PHASE 2 CO_2 STANDARDS FOR TRACTORS ABOVE 120,000 POUNDS GCWR

[g/ton-mile] [a]

Subcategory	Model years 2021–2023	Model years 2024–2026	Model years 2026 and later
Heavy Class 8 Low-Roof Day Cab	53.5	50.8	48.9
Heavy Class 8 Low-Roof Sleeper Cab	47.1	44.5	42.4
Heavy Class 8 Mid-Roof Day Cab	55.6	52.8	50.8
Heavy Class 8 Mid-Roof Sleeper Cab	49.6	46.9	44.7
Heavy Class 8 High-Roof Day Cab	54.5	51.4	48.6
Heavy Class 8 High-Roof Sleeper Cab	47.1	44.2	41.0

[a] Note that these standards are not directly comparable to the standards for Heavy-Haul Tractors in § 1037.106 because GEM handles aerodynamic performance differently for the two sets of standards.

(b) Determine subcategories as described in § 1037.230 for tractors that are not heavy-haul tractors. For example, the subcategory for tractors that would otherwise be considered Class 8 low-roof day cabs would be Heavy Class 8 Low-Roof Day Cabs and would be identified as HC8_DC_LR for the GEM run.

* * * * *

■ 170. Amend § 1037.701 by revising paragraphs (h) and (i) to read as follows:

§ 1037.701 General provisions.

* * * * *

(h) See § 1037.740 for special credit provisions that apply for credits generated under 40 CFR 86.1819–14 (k)(7), 40 CFR 1036.615, or § 1037.615.

(i) Unless the regulations in this part explicitly allow it, you may not calculate Phase 1 credits more than once for any emission reduction. For example, if you generate Phase 1 CO_2 emission credits for a given hybrid vehicle under this part, no one may generate CO_2 emission credits for the associated hybrid engine under 40 CFR part 1036. However, Phase 1 credits could be generated for identical engines used in vehicles that did not generate credits under this part.

* * * * *

■ 171. Amend § 1037.705 by revising paragraph (c)(2) to read as follows:

§ 1037.705 Generating and calculating emission credits.

* * * * *

(c) * * *

(2) Exported vehicles, even if they are certified under this part and labeled accordingly.

* * * * *

■ 172. Amend § 1037.740 by revising paragraph (b)(1) to read as follows:

§ 1037.740 Restrictions for using emission credits.

* * * * *

(b) * * *

(1) The maximum amount of credits you may bring into the following service class groups is 60,000 Mg per model year:

(i) Spark-ignition engines, light heavy-duty compression-ignition engines, and Light HDV. This group comprises the averaging set listed in paragraphs (a)(1) of this section and the averaging set listed in 40 CFR 1036.740(a)(1) and (2).

(ii) Medium heavy-duty compression-ignition engines and Medium HDV. This group comprises the averaging sets listed in paragraph (a)(2) of this section and 40 CFR 1036.740(a)(3).

(iii) Heavy heavy-duty compression-ignition engines and Heavy HDV. This group comprises the averaging sets listed in paragraph (a)(3) of this section and 40 CFR 1036.740(a)(4).

* * * * *

■ 173. Amend § 1037.801 by—

■ a. Revising the definitions for ''Auxiliary emission control device'', ''Compression-ignition'', and ''Electric vehicle''.

■ b. Adding a definition for ''Electronic control module'' in alphabetical order.

■ c. Revising the definitions for ''Gear ratio or Transmission gear ratio, kg'' and ''Heavy-duty vehicle''.

■ d. Adding a definition for ''High-strength steel'' in alphabetical order.

■ e. Revising the definitions for ''Hybrid engine or hybrid powertrain'', ''Hybrid vehicle'', ''Light-duty truck'', ''Low rolling resistance tire'', ''Model year'', and ''Small manufacturer''.

■ f. Adding a definition for ''Tonne'' in alphabetical order.

The revisions and additions read as follows:

§ 1037.801 Definitions.

* * * * *

Auxiliary emission control device means any element of design that senses temperature, motive speed, engine speed (r/min), transmission gear, or any other parameter for the purpose of activating, modulating, delaying, or deactivating the operation of any part of the emission control system.

* * * * *

Compression-ignition has the meaning given in § 1037.101.

* * * * *

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

as all-electric vehicles to distinguish them from hybrid vehicles.

Electronic control module has the meaning given in 40 CFR 1065.1001.

* * * * *

Gear ratio or Transmission gear ratio, kg, means the dimensionless number representing the angular speed of the transmission's input shaft divided by the angular speed of the transmission's output shaft when the transmission is operating in a specific gear.

* * * * *

Heavy-duty vehicle means any trailer and any other motor vehicle that has a GVWR above 8,500 pounds. An incomplete vehicle is also a heavy-duty vehicle if it has a curb weight above 6,000 pounds or a basic vehicle frontal area greater than 45 square feet.

* * * * *

High-strength steel has the meaning given in § 1037.520.

Hybrid engine or *hybrid powertrain* means an engine or powertrain that includes energy storage features other than a conventional battery system or conventional flywheel. Supplemental electrical batteries and hydraulic accumulators are examples of hybrid energy storage systems. Note other examples of systems that qualify as hybrid engines or powertrains are systems that recover kinetic energy and use it to power an electric heater in the aftertreatment. Note that certain provisions in this part treat hybrid engines and hybrid powertrains intended for vehicles that include regenerative braking different than those intended for vehicles that do not include regenerative braking.

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

* * * * *

Light-duty truck means any motor vehicle that is not a heavy-duty vehicle, but is:

(1) Designed primarily for purposes of transportation of property or is a derivation of such a vehicle; or

(2) Designed primarily for transportation of persons and has a capacity of more than 12 persons; or

(3) Available with special features enabling off-street or off-highway operation and use.

* * * * *

Low rolling resistance tire means a tire on a vocational vehicle with a TRRL at or below of 7.7 kg/tonne, a steer tire on a tractor with a TRRL at or below 7.7 kg/tonne, a drive tire on a tractor with a TRRL at or below 8.1 kg/tonne, a tire on a non-box trailer with a TRRL at or below of 6.5 kg/tonne, or a tire on a box van with a TRRL at or below of 6.0 kg/tonne.

* * * * *

Model year means one of the following for compliance with this part. Note that manufacturers may have other model year designations for the same vehicle for compliance with other requirements or for other purposes:

(1) For tractors and vocational vehicles with a date of manufacture on or after January 1, 2021, model year means the manufacturer's annual new model production period based on the vehicle's date of manufacture, where the model year is the calendar year corresponding to the date of manufacture, except as follows:

(i) The vehicle's model year may be designated as the year before the calendar year corresponding to the date of manufacture if the engine's model year is also from an earlier year. You may ask us to extend your prior model year certificate to include such vehicles. Note that § 1037.601(a)(2) limits the extent to which vehicle manufacturers may install engines built in earlier calendar years.

(ii) The vehicle's model year may be designated as the year after the calendar year corresponding to the vehicle's date of manufacture. For example, a manufacturer may produce a new vehicle by installing the engine in December 2023 and designating it as a model year 2024 vehicle.

(2) For trailers and for Phase 1 tractors and vocational vehicles with a date of manufacture before January 1, 2021, model year means the manufacturer's annual new model production period, except as restricted under this definition and 40 CFR part 85, subpart X. It must include January 1 of the calendar year for which the model year is named, may not begin before January 2 of the previous calendar year, and it must end by December 31 of the named calendar year. The model year may be set to match the calendar year corresponding to the date of manufacture.

(i) The manufacturer who holds the certificate of conformity for the vehicle must assign the model year based on the date when its manufacturing operations are completed relative to its annual model year period. In unusual circumstances where completion of your assembly is delayed, we may allow you to assign a model year one year earlier, provided it does not affect which regulatory requirements will apply.

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

* * * * *

Small manufacturer means a manufacturer meeting the small business criteria specified in 13 CFR 121.201 for vocational vehicles and tractors (NAICS code 336120) or for trailers (NAICS code 336212). The employee and revenue limits apply to the total number employees and total revenue together for affiliated companies.

* * * * *

Tonne means metric ton, which is exactly 1000 kg.

* * * * *

■ 174. Amend § 1037.805 by revising paragraphs (b), (c), (d), (e), and (f) to read as follows:

§ 1037.805 Symbols, abbreviations, and acronyms.

* * * * *

(b) *Symbols for quantities.* This part uses the following symbols and units of measure for various quantities:

TABLE 2 TO § 1037.805—SYMBOLS FOR QUANTITIES

Symbol	Quantity	Unit	Unit symbol	Unit in terms of SI base units
A	vehicle frictional load	pound force or newton	lbf or N	$kg \cdot m \cdot s^{-2}$.
a	axle position regression coefficient.			
α	atomic hydrogen-to-carbon ratio	mole per mole	mol/mol	1.
α	axle position regression coefficient.			
α_0	intercept of air speed correction.			
α_1	slope of air speed correction.			
α_g	acceleration of Earth's gravity	meters per second squared	m/s2	$m \cdot s^{-2}$.
α_0	intercept of least squares regression.			
α_1	slope of least squares regression.			
B	vehicle load from drag and rolling resistance.	pound force per mile per hour or newton second per meter.	lbf/(mi/hr) or N·s/m	$kg \cdot s^{-1}$.
b	axle position regression coefficient.			
β	atomic oxygen-to-carbon ratio	mole per mole	mol/mol	1.
β	axle position regression coefficient.			
β_0	intercept of air direction correction.			
β_1	slope of air direction correction.			
C	vehicle-specific aerodynamic effects	pound force per mile per hour squared or newton-second squared per meter squared.	lbf/mph^2 or $N \cdot s^2/m^2$	$kg \cdot m^{-1}$.
c	axle position regression coefficient.			
c_i	axle test regression coefficients.			
C_i	constant.			
$\Delta C_d A$	differential drag area	meter squared	m^2	m^2.
$C_d A$	drag area	meter squared	m^2	m^2.
C_d	drag coefficient.			
CF	correction factor.			
C_{rr}	coefficient of rolling resistance	kilogram per metric ton	kg/tonne	10^{-3}.
D	distance	miles or meters	mi or m	m.
e	mass-weighted emission result	grams/ton-mile	g/ton-mi	g/kg-km.
Eff	efficiency.			
F	adjustment factor.			
F	force	pound force or newton	lbf or N	$kg \cdot m \cdot s^{-2}$.
f_n	angular speed (shaft)	revolutions per minute	r/min	$\pi \cdot 30 \cdot s^{-1}$.
G	road grade	percent	%	10^{-2}.
g	gravitational acceleration	meters per second squared	m/s^2	$m \cdot s^{-2}$.
h	elevation or height	meters	m	m.
i	indexing variable.			
k_a	drive axle ratio			1.
k_d	transmission gear ratio.			
$k_{topgear}$	highest available transmission gear.			
L	load over axle	pound force or newton	lbf or N	$kg \cdot m \cdot s^{-2}$.
m	mass	pound mass or kilogram	lbm or kg	kg.
M	molar mass	gram per mole	g/mol	$10^{-3} \cdot kg \cdot mol^{-1}$.
M	vehicle mass	kilogram	kg	kg.
M_e	vehicle effective mass	kilogram	kg	kg.
$M_{rotating}$	inertial mass of rotating components	kilogram	kg	kg.
N	total number in series.			
n	number of tires.			
$\dot{n}$	amount of substance rate	mole per second	mol/s	$mol \cdot s^{-1}$.
P	power	kilowatt	kW	$10^3 \cdot m^2 \cdot kg \cdot s^{-3}$.
p	pressure	pascal	Pa	$kg \cdot m^{-1} \cdot s^{-2}$.
ρ	mass density	kilogram per cubic meter	kg/m^3	$kg \cdot m^{-3}$.
PL	payload	tons	ton	kg.
φ	direction	degrees	°	°.
ψ	direction	degrees	°	°.
r	tire radius	meter	m	m.
r^2	coefficient of determination.			
$Re\#$	Reynolds number.			
SEE	standard error of the estimate.			
σ	standard deviation.			
$TRPM$	tire revolutions per mile	revolutions per mile	r/mi.	
$TRRL$	tire rolling resistance level	kilogram per metric ton	kg/tonne	10^{-3}.
T	absolute temperature	kelvin	K	K.
T	Celsius temperature	degree Celsius	°C	K–273.15.
T	torque (moment of force)	newton meter	N·m	$m^2 \cdot kg \cdot s^{-2}$.
t	time	hour or second	hr or s	s.
Δt	time interval, period, 1/frequency	second	s	s.
UF	utility factor.			
v	speed	miles per hour or meters per second	mi/hr or m/s	$m \cdot s^{-1}$.
w	weighting factor.			
w	wind speed	miles per hour	mi/hr	$m \cdot s^{-1}$.

TABLE 2 TO § 1037.805—SYMBOLS FOR QUANTITIES—Continued

Symbol	Quantity	Unit	Unit symbol	Unit in terms of SI base units
W	work	kilowatt-hour	kW·hr	$3.6 \cdot m^2 \cdot kg \cdot s^{-1}$.
w_C	carbon mass fraction	gram/gram	g/g	1.
WR	weight reduction	pound mass	lbm	kg.
x	amount of substance mole fraction	mole per mole	mol/mol	1.

(c) *Superscripts.* This part uses the following superscripts for modifying quantity symbols:

TABLE 3 TO § 1037.805—SUPERSCRIPTS

Superscript	Meaning
overbar (such as $\bar{y}$)	arithmetic mean.
Double overbar (such as $\bar{\bar{y}}$).	arithmetic mean of arithmetic mean.
overdot (such as $\dot{y}$)	quantity per unit time.

(d) *Subscripts.* This part uses the following subscripts for modifying quantity symbols:

TABLE 4 TO § 1037.805—SUBSCRIPTS

Subscript	Meaning
±6	±6° yaw angle sweep.
A	A speed.
air	air.
aero	aerodynamic.
alt	alternative.
act	actual or measured condition.
air	air.
axle	axle.
B	B speed.
brake	brake.
C	C speed.
Ccombdry	carbon from fuel per mole of dry exhaust.
CD	charge-depleting.
circuit	circuit.
CO2DEF	CO_2 resulting from diesel exhaust fluid decomposition.
CO2PTO	CO_2 emissions for PTO cycle.
coastdown	coastdown.
comp	composite.
CS	charge-sustaining.
cycle	test cycle.
drive	drive axle
drive-idle	idle with the transmission in drive.
driver	driver.
dyno	dynamometer.
effective	effective.
end	end.
eng	engine.
event	event.
fuel	fuel.
full	full.
grade	grade.
H2Oexhaustdry	H_2O in exhaust per mole of exhaust.
hi	high.
i	an individual of a series.
idle	idle.
in	inlet.
inc	increment.
lo	low.
loss	loss.
max	maximum.
meas	measured quantity.
med	median.
min	minimum.
moving	moving.
out	outlet.
P	power.
pair	pair of speed segments.
parked-idle	idle with the transmission in park.
partial	partial.

TABLE 4 TO § 1037.805—SUBSCRIPTS—Continued

Subscript	Meaning
ploss	power loss.
plug-in	plug-in hybrid electric vehicle.
powertrain	powertrain.
PTO	power take-off.
rated	rated speed.
record	record.
ref	reference quantity.
RL	road load.
rotating	rotating.
seg	segment.
speed	speed.
spin	axle spin loss.
start	start.
steer	steer axle.
t	tire.
test	test.
th	theoretical.
total	total.
trac	traction.
trac10	traction force at 10 mi/hr.
trailer	trailer axle.
transient	transient.
TRR	tire rolling resistance.
urea	urea.
veh	vehicle.
w	wind.
wa	wind average.
yaw	yaw angle.
ys	yaw sweep.
zero	zero quantity.

(e) *Other acronyms and abbreviations.* This part uses the following additional abbreviations and acronyms:

TABLE 5 TO § 1037.805—OTHER ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
ABT	averaging, banking, and trading.
AECD	auxiliary emission control device.
AES	automatic engine shutdown.
APU	auxiliary power unit.
CD	charge-depleting.
CFD	computational fluid dynamics.
CFR	Code of Federal Regulations.
CITT	curb idle transmission torque.
CS	charge-sustaining.
DOT	Department of Transportation.
ECM	electronic control module.
EPA	Environmental Protection Agency.
FE	fuel economy.
FEL	Family Emission Limit.
GAWR	gross axle weight rating.
GCWR	gross combination weight rating.
GEM	greenhouse gas emission model.
GVWR	gross vehicle weight rating.
Heavy HDV	Heavy heavy-duty vehicle (see § 1037.140).
HVAC	heating, ventilating, and air conditioning.
ISO	International Organization for Standardization.
Light HDV	Light heavy-duty vehicle (see § 1037.140).
Medium HDV	Medium heavy-duty vehicle (see § 1037.140).
NARA	National Archives and Records Administration.
NHTSA	National Highway Transportation Safety Administration.
PHEV	plug-in hybrid electric vehicle.
PTO	power take-off.
RESS	rechargeable energy storage system.
SAE	Society of Automotive Engineers.
SEE	standard error of the estimate.
SKU	stock-keeping unit.

TABLE 5 TO § 1037.805—OTHER ACRONYMS AND ABBREVIATIONS—Continued

Acronym	Meaning
TRPM	tire revolutions per mile.
TRRL	tire rolling resistance level.
U.S.C.	United States Code.
VSL	vehicle speed limiter.

(f) Constants. This part uses the following constants:

TABLE 6 TO § 1037.805—CONSTANTS

Symbol	Quantity	Value
g	gravitational constant.	9.80665 $m \cdot s^{-2}$.
R	specific gas constant.	287.058 J/(kg·K).

* * * * *

■ 175. Revise § 1037.810 to read as follows:

§ 1037.810 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Environmental Protection Agency must publish a document in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue NW, Washington, DC 20004, *www.epa.gov/dockets*, (202) 202–1744, and is available from the sources listed in this section. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fedreg.legal@nara.gov*, call 202–741–6030, or go to *www.archives.gov/federal-register/cfr/ibr-locations.html.*

(b) International Organization for Standardization, Case Postale 56, CH–1211 Geneva 20, Switzerland, (41) 22749 0111, *www.iso.org,* or *central@iso.org.*

(1) ISO 28580:2009(E) ''Passenger car, truck and bus tyres—Methods of measuring rolling resistance—Single point test and correlation of measurement results'', First Edition, July 1, 2009, (''ISO 28580''), IBR approved for § 1037.520(c).

(2) [Reserved]

(c) U.S. EPA, Office of Air and Radiation, 2565 Plymouth Road, Ann Arbor, MI 48105, *www.epa.gov.*

(1) Greenhouse gas Emissions Model (GEM), Version 2.0.1, September 2012 (''GEM version 2.0.1''), IBR approved for § 1037.520.

(2) Greenhouse gas Emissions Model (GEM) Phase 2, Version 3.5.1, November 2020 (''GEM Phase 2, Version 3.5.1''); IBR approved for § 1037.520.

(3) GEM's MATLAB/Simulink Hardware-in-Loop model, Version 3.8, December 2020 (''GEM HIL model''); IBR approved for § 1037.550(a).

Note 1 to paragraph (c): The computer code for these models is available as noted in paragraph (a) of this section. A working version of the software is also available for download at *https://www.epa.gov/regulations-emissions-vehicles-and-engines/greenhouse-gas-emissions-model-gem-medium-and-heavy-duty.*

(d) National Institute of Standards and Technology, 100 Bureau Drive, Stop 1070, Gaithersburg, MD 20899–1070, (301) 975–6478, or *www.nist.gov.*

(1) NIST Special Publication 811, Guide for the Use of the International System of Units (SI), 2008 Edition, March 2008, IBR approved for § 1037.805.

(2) [Reserved]

(e) SAE International, 400 Commonwealth Dr., Warrendale, PA 15096–0001, (877) 606–7323 (U.S. and Canada) or (724) 776–4970 (outside the U.S. and Canada), *http://www.sae.org.*

(1) SAE J1025, Test Procedures for Measuring Truck Tire Revolutions Per Kilometer/Mile, Stabilized August 2012, (''SAE J1025''), IBR approved for § 1037.520(c).

(2) SAE J1252, SAE Wind Tunnel Test Procedure for Trucks and Buses, Revised July 2012, (''SAE J1252''), IBR approved for §§ 1037.525(b) and 1037.530(a).

(3) SAE J1263, Road Load Measurement and Dynamometer Simulation Using Coastdown Techniques, revised March 2010, (''SAE J1263''), IBR approved for §§ 1037.528 introductory text, (a), (b), (c), (e), and (h) and 1037.665(a).

(4) SAE J1594, Vehicle Aerodynamics Terminology, Revised July 2010, (''SAE J1594''), IBR approved for § 1037.530(d).

(5) SAE J2071, Aerodynamic Testing of Road Vehicles—Open Throat Wind Tunnel Adjustment, Revised June 1994, (''SAE J2071''), IBR approved for § 1037.530(b).

(6) SAE J2263, Road Load Measurement Using Onboard Anemometry and Coastdown Techniques, Revised December 2008, (''SAE J2263''), IBR approved for §§ 1037.528 introductory text, (a), (b), (d), and (f) and 1037.665(a).

(7) SAE J2343, Recommended Practice for LNG Medium and Heavy-Duty Powered Vehicles, Revised July 2008, (''SAE J2343''), IBR approved for § 1037.103(e).

(8) SAE J2452, Stepwise Coastdown Methodology for Measuring Tire Rolling Resistance, Revised June 1999, (''SAE J2452''), IBR approved for § 1037.528(h).

(9) SAE J2966, Guidelines for Aerodynamic Assessment of Medium and Heavy Commercial Ground Vehicles Using Computational Fluid Dynamics, Issued September 2013, (''SAE J2966''), IBR approved for § 1037.532(a).

■ 176. Amend § 1037.825 by revising paragraph (a) to read as follows:

§ 1037.825 Reporting and recordkeeping requirements.

(a) This part includes various requirements to submit and record data or other information. Unless we specify otherwise, store required records in any format and on any media and keep them readily available for eight years after you send an associated application for certification, or eight years after you generate the data if they do not support an application for certification. We may review these records at any time. You must promptly give us organized, written records in English if we ask for them. We may require you to submit written records in an electronic format.

* * * * *

■ 177. Revise appendix III to part 1037 to read as follows:

Appendix III to Part 1037—Emission Control Identifiers

This appendix identifies abbreviations for emission control information labels, as required under § 1037.135.

Vehicle Speed Limiters

—VSL—Vehicle speed limiter
—VSLS—''Soft-top'' vehicle speed limiter
—VSLE—Expiring vehicle speed limiter
—VSLD—Vehicle speed limiter with both ''soft-top'' and expiration

Idle Reduction Technology

—IRT5—Engine shutoff after 5 minutes or less of idling
—IRTE—Expiring engine shutoff

Tires

—LRRA—Low rolling resistance tires (all, including trailers)
—LRRD—Low rolling resistance tires (drive)
—LRRS—Low rolling resistance tires (steer)

Aerodynamic Components

—ATS—Aerodynamic side skirt and/or fuel tank fairing
—ARF—Aerodynamic roof fairing
—ARFR—Adjustable height aerodynamic roof fairing
—TGR—Gap reducing tractor fairing (tractor to trailer gap)
—TGRT—Gap reducing trailer fairing (tractor to trailer gap)
—TATS—Trailer aerodynamic side skirt
—TARF—Trailer aerodynamic rear fairing
—TAUD—Trailer aerodynamic underbody device

Other Components

—ADVH—Vehicle includes advanced hybrid technology components
—ADVO—Vehicle includes other advanced-technology components (i.e., non-hybrid system)
—INV—Vehicle includes innovative (off-cycle) technology components
—ATI—Automatic tire inflation system
—TPMS—Tire pressure monitoring system
—WRTW—Weight-reducing trailer wheels
—WRTC—Weight-reducing trailer upper coupler plate
—WRTS—Weight-reducing trailer axle sub-frames
—WBSW—Wide-base single trailer tires with steel wheel
—WBAW—Wide-base single trailer tires with aluminum wheel
—WBLW—Wide-base single trailer tires with light-weight aluminum alloy wheel
—DWSW—Dual-wide trailer tires with high-strength steel wheel
—DWAW—Dual-wide trailer tires with aluminum wheel
—DWLW—Dual-wide trailer tires with light-weight aluminum alloy wheel

■ 178. Revise appendix IV to part 1037 to read as follows:

Appendix IV to Part 1037—Heavy-Duty Grade Profile for Phase 2 Steady-State Test Cycles

The following table identifies a grade profile for operating vehicles over the highway cruise cycles specified in subpart F of this part. Determine intermediate values by linear interpolation.

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Distance (m)	Grade (%)
0	0
402	0
804	0.5
1206	0
1210	0
1222	-0.1
1234	0
1244	0
1294	0.36
1344	0
1354	0
1408	-0.28
1504	-1.04
1600	-0.28
1654	0
1666	0
1792	0.39
1860	0.66
1936	1.15
2098	2.44
2260	1.15
2336	0.66
2404	0.39
2530	0
2548	0
2732	-0.46
2800	-0.69
2880	-1.08
2948	-1.53
3100	-2.75
3252	-1.53
3320	-1.08
3400	-0.69
3468	-0.46
3652	0
3666	0
3742	0.35
3818	0.9
3904	1.59
3990	0.9
4066	0.35
4142	0
4158	0
4224	-0.1
4496	-0.69
4578	-0.97
4664	-1.36
4732	-1.78
4916	-3.23
5100	-1.78
5168	-1.36
5254	-0.97
5336	-0.69
5608	-0.1
5674	0
5724	0
5808	0.1
5900	0.17
6122	0.38
6314	0.58
6454	0.77
6628	1.09
6714	1.29
6838	1.66
6964	2.14
7040	2.57
7112	3
7164	3.27
7202	3.69
7292	5.01
7382	3.69
7420	3.27
7472	3
7544	2.57
7620	2.14
7746	1.66
7870	1.29
7956	1.09
8130	0.77
8270	0.58
8462	0.38
8684	0.17
8776	0.1
8860	0
8904	0
9010	-0.38
9070	-0.69
9254	-2.13
9438	-0.69
9498	-0.38
9604	0
9616	0
9664	0.26
9718	0.7
9772	0.26
9820	0
9830	0
9898	-0.34
10024	-1.33
10150	-0.34
10218	0
10228	0
10316	0.37
10370	0.7
10514	1.85
10658	0.7
10712	0.37
10800	0
10812	0
10900	-0.37
10954	-0.7
11098	-1.85
11242	-0.7
11296	-0.37
11384	0
11394	0
11462	0.34
11588	1.33
11714	0.34
11782	0
11792	0
11840	-0.26
11894	-0.7
11948	-0.26
11996	0
12008	0
12114	0.38
12174	0.69
12358	2.13
12542	0.69
12602	0.38
12708	0
12752	0
12836	-0.1
12928	-0.17
13150	-0.38
13342	-0.58
13482	-0.77
13656	-1.09
13742	-1.29
13866	-1.66
13992	-2.14
14068	-2.57
14140	-3
14192	-3.27
14230	-3.69
14320	-5.01
14410	-3.69
14448	-3.27
14500	-3
14572	-2.57
14648	-2.14
14774	-1.66
14898	-1.29
14984	-1.09
15158	-0.77
15298	-0.58
15490	-0.38
15712	-0.17
15804	-0.1
15888	0
15938	0
16004	0.1
16276	0.69
16358	0.97
16444	1.36
16512	1.78
16696	3.23
16880	1.78
16948	1.36
17034	0.97
17116	0.69
17388	0.1
17454	0
17470	0
17546	-0.35
17622	-0.9
17708	-1.59
17794	-0.9
17870	-0.35
17946	0
17960	0
18144	0.46
18212	0.69
18292	1.08
18360	1.53
18512	2.75
18664	1.53
18732	1.08
18812	0.69
18880	0.46
19064	0
19082	0
19208	-0.39
19276	-0.66
19352	-1.15
19514	-2.44
19676	-1.15
19752	-0.66
19820	-0.39
19946	0
19958	0
20012	0.28
20108	1.04
20204	0.28
20258	0
20268	0
20318	-0.36

20368	0
20378	0
20390	0.1
20402	0
20406	0
20808	-0.5
21210	0
21612	0

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

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

Authority: 42 U.S.C. 7401–7671q.

■ 180. Amend § 1039.1 by revising paragraphs (b)(3) and (c) to read as follows:

§ 1039.1 Does this part apply for my engines?

* * * * *

(b) * * *

(3) Engines originally meeting Tier 1, Tier 2, or Tier 3 standards as specified in appendix I of this part remain subject to the standards in subpart B of this part. This includes uncertified engines that meet standards under 40 CFR 1068.265. Affected engines remain subject to recall provisions as specified in 40 CFR part 1068, subpart F, throughout the useful life corresponding to the original certification. Also, tampering and defeat-device prohibitions continue to apply for those engines as specified in 40 CFR 1068.101.

* * * * *

(c) The definition of nonroad engine in 40 CFR 1068.30 excludes certain engines used in stationary applications. These engines may be required by 40 CFR part 60, subpart IIII, to comply with some of the provisions of this part; otherwise, these engines are only required to comply with the requirements in § 1039.20. In addition, the prohibitions in 40 CFR 1068.101 restrict the use of stationary engines for nonstationary purposes unless they are certified to the same standards that would apply to certain nonroad engines for the same model year.

* * * * *

■ 181. Amend § 1039.20 by revising paragraphs (a) introductory text, (b)(2) and (4), and (c) to read as follows:

§ 1039.20 What requirements from this part apply to excluded stationary engines?

* * * * *

(a) You must add a permanent label or tag to each new engine you produce or import that is excluded under § 1039.1(c) as a stationary engine and is not required by 40 CFR part 60, subpart IIII, to meet the requirements described in this part, or the requirements described in 40 CFR part 1042, that are equivalent to the requirements applicable to marine or land-based nonroad engines for the same model year. To meet labeling requirements, you must do the following things:

* * * * *

(b) * * *

(2) Include your full corporate name and trademark.

* * * * *

(4) State: ''THIS ENGINE IS EXEMPTED FROM NONROAD CERTIFICATION REQUIREMENTS AS A ''STATIONARY ENGINE.'' INSTALLING OR USING THIS ENGINE IN ANY OTHER APPLICATION MAY BE A VIOLATION OF FEDERAL LAW SUBJECT TO CIVIL PENALTY.''

(c) Stationary engines required by 40 CFR part 60, subpart IIII, to meet the requirements described in this part or 40 CFR part 1042, must meet the labeling requirements of 40 CFR 60.4210.

■ 182. Amend § 1039.101 by revising the introductory text and paragraph (b) to read as follows:

§ 1039.101 What exhaust emission standards must my engines meet after the 2014 model year?

The exhaust emission standards of this section apply after the 2014 model year. Certain standards in this section also apply for model year 2014 and earlier. This section presents the full set of emission standards that apply after all the transition and phase-in provisions of §§ 1039.102 and 1039.104 expire. Section 1039.105 specifies smoke standards.

* * * * *

(b) Emission standards for steady-state testing. Steady-state exhaust emissions from your engines may not exceed the applicable emission standards in Table 1 of this section. Measure emissions using the applicable steady-state test procedures described in subpart F of this part.

* * * * *

■ 183. Amend § 1039.102 by:

■ a. Revising the introductory text and paragraph (a)(2);

■ b. Revising Tables 1, 3, and 6 in paragraph (b); and

Table 1 of §1039.101—Tier 4 Exhaust Emission Standards After the 2014 Model Year, g/kW-hr[a]

Maximum Engine Power	Application	PM	NOx	NMHC	NOx+NMHC	CO
kW < 19	All	0.40[b]	-	-	7.5	6.6[c]
19 ≤ kW < 56	All	0.03	-	-	4.7	5.0[d]
56 ≤ kW < 130	All	0.02	0.40	0.19	-	5.0
130 ≤ kW ≤560	All	0.02	0.40	0.19	-	3.5
kW > 560	Generator sets	0.03	0.67	0.19	-	3.5
kW > 560	All except generator sets	0.04	3.5	0.19	-	3.5

[a]Note that some of these standards also apply for 2014 and earlier model years. This table presents the full set of emission standards that apply after all the transition and phase-in provisions of §1039.102 expire.
[b]See paragraph (c) of this section for provisions related to an optional PM standard for certain engines below 8 kW.
[c]The CO standard is 8.0 g/kW-hr for engines below 8 kW.
[d]The CO standard is 5.5 g/kW-hr for engines below 37 kW.

■ c. Revising paragraphs (d)(1), (e)(3), (g)(1)(iv), and (g)(2).

The revisions read as follows:

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

The exhaust emission standards of this section apply for 2014 and earlier model years. See § 1039.101 for exhaust emission standards that apply to later model years.

(a) * * *

(2) The transient standards in this section for gaseous pollutants do not apply to phase-out engines that you certify to the same numerical standards (and FELs if the engines are certified using ABT) for gaseous pollutants as you certified under the Tier 3 requirements identified in appendix I of this part. However, except as specified by paragraph (a)(1) of this section, the transient PM emission standards apply to these engines.

(b) * * *

*

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Table 1 of §1039.102—Tier 4 Exhaust Emission Standards (g/kW-hr): kW <19

Maximum engine power	Model years	PM	NOx + NMHC	CO
kW <8	2008-2014	0.40[a]	7.5	8.0
8 ≤kW <19	2008-2014	0.40	7.5	6.6

* [a]For engines that qualify for the special provisions in §1039.101(c), you may delay certifying to the standards in this part until 2010. In 2009 and earlier model years, these engines must instead meet the applicable Tier 2 standards and other requirements identified in appendix I of this part. Starting in 2010, these engines must meet a PM standard of 0.60 g/kW-hr, as described in §1039.101(c). Engines certified to the 0.60 g/kWhr PM standard may not generate ABT credits.

* * * * *

Table 3 of §1039.102—Interim Tier 4 Exhaust Emission Standards (g/kW-hr): 37 ≤kW <56

Option[a]	Model years	PM	NOx + NMHC	CO
#1	2008-2012	0.30	4.7	5.0
#2	2012	0.03	4.7	5.0
All	2013-2014	0.03	4.7	5.0

[a]You may certify engines to the Option #1 or Option #2 standards starting in the listed model year. Under Option #1, all engines at or above 37 kW and below 56 kW produced before the 2013 model year must meet the applicable Option #1 standards in this table. These engines are considered to be "Option #1 engines." Under Option #2, all these engines produced before the 2012 model year must meet the applicable standards identified in appendix I of this part. Engines certified to the Option #2 standards in model year 2012 are considered "Option #2 engines."

* * * * *

Table 6 of §1039.102—Interim Tier 4 Exhaust Emission Standards (g/kW-hr): 130 < kW < 560

Model years	Phase-in Option	PM	NOx	NMHC	NOx+NMHC	CO
2011-2013	Phase-in	0.02	0.40	0.19	-	3.5
	Phase-out	0.02	-	-	4.0	3.5
2014	All engines	0.02	0.40	0.19	-	3.5

* * * * *

(d) * * *

(1) For model years 2012 through 2014, you may use banked NO_X + NMHC credits from any Tier 2 engine at or above 37 kW certified under the standards identified in appendix I of this part to meet the NO_X phase-in standards or the NO_X + NMHC phase-out standards under paragraphs (b) and (c) of this section, subject to the additional ABT provisions in § 1039.740.

* * * * *

(e) * * *

(3) You use NO_X + NMHC emission credits to certify an engine family to the alternate NO_X + NMHC standards in this paragraph (e)(3) instead of the otherwise applicable alternate NO_X and NMHC standards. Calculate the alternate NO_X + NMHC standard by adding 0.1 g/kW-hr to the numerical value of the applicable alternate NO_X standard of paragraph (e)(1) or (2) of this section. Engines certified to the NO_X + 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_X + NMHC standards identified in appendix I of this part (generally the Tier 3 standards).

* * * * *

(g) * * *

(1) * * *

(iv) Gaseous pollutants for phase-out engines that you certify to the same numerical standards and FELs for gaseous pollutants to which you certified under the Tier 3 requirements identified in appendix I of this part. However, the NTE standards for PM apply to these engines.

(2) Interim FEL caps. As described in § 1039.101(d), you may participate in the ABT program in subpart H of this part by certifying engines to FELs for PM, NO_X, or NO_X + NMHC instead of the standards in Tables 1 through 7 of this section for the model years shown. The FEL caps listed in the following table apply instead of the FEL caps in § 1039.101(d)(1), except as allowed by § 1039.104(g):

Table 8 of §1039.102—Interim Tier 4 FEL Caps, g/kW-hr

Maximum engine power	Phase-in option	Model years[a]	PM	NOx	NOx+NMHC
kW <19	—	2008-2014	0.80	—	9.5[b]
19 ≤ kW < 37	—	2008-2012	0.60	—	9.5
37 ≤ kW < 56	—	2008-2012[c]	0.40	—	7.5
56 ≤ kW < 130	phase-in	2012-2013	0.04	0.80	—
56 ≤ kW <130	phase-out	2012-2013	0.04	—	6.6[d]
130 ≤ kW ≤ 560	phase-in	2011-2013	0.04	0.80	—
130 ≤ kW ≤ 560	phase-out	2011-2013	0.04	—	6.4[e]
kW > 560	—	2011-2014	0.20	6.2	—

[a]For model years before 2015 where this table does not specify FEL caps, apply the FEL caps shown in §1039.101.
[b]For engines below 8 kW, the FEL cap is 10.5 g/kW-hr for NOx + NMHC emissions.
[c]For manufacturers certifying engines to the standards of this part 1039 in 2012 under Option #2 of Table 3 of §1039.102, the FEL caps for 37-56 kW engines in the 19-56 kW category of Table 2 of §1039.101 apply for model year 2012 and later; see appendix I of this part for provisions that apply to earlier model years.
[d]For engines below 75 kW, the FEL cap is 7.5 g/kW-hr for NOx + NMHC emissions.
[e]For engines below 225 kW, the FEL cap is 6.6 g/kW-hr for NOx + NMHC emissions.

* * * * *

■ 184. Amend § 1039.104 by revising paragraphs (c)(1), (c)(2)(ii), (c)(4), and (g)(4) to read as follows:

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

* * * * *

(c) * * *

(1) You may delay complying with certain otherwise applicable Tier 4 emission standards and requirements as described in the following table:

If your engine's maximum power is . . .	You may delay meeting . . .	Until model year . . .	Before that model year the engine must comply with . . .
(i) kW <19	The standards and requirements of this part	2011	The standards and requirements described in appendix I of this part.
(ii) 19 ≤kW <37	The Tier 4 standards and requirements of this part that would otherwise be applicable in model year 2013.	2016	The Tier 4 standards and requirements that apply for model year 2008.
(iii) 37 ≤kW <56	See paragraph (c)(2) of this section for special provisions that apply for engines in this power category.		
(iv) 56 ≤kW <130	The standards and requirements of this part	2015	The standards and requirements described in appendix I of this part.

(2) * * *

(ii) If you do not choose to comply with paragraph (c)(2)(i) of this section, you may continue to comply with the standards and requirements described in appendix I of this part for model years through 2012, but you must begin complying in 2013 with Tier 4 standards and requirements specified in Table 3 of § 1039.102 for model years 2013 and later.

* * * * *

(4) For engines not in the 19–56 kW power category, if you delay compliance with any standards under this paragraph (c), you must do all the following things for the model years when you are delaying compliance with the otherwise applicable standards:

(i) Produce engines that meet all the emission standards identified in appendix I of this part and other requirements in this part applicable for that model year, except as noted in this paragraph (c).

(ii) Meet the labeling requirements in this part that apply for certified engines but use the following alternative compliance statement: ''THIS ENGINE COMPLIES WITH U.S. EPA REGULATIONS FOR [CURRENT MODEL YEAR] NONROAD COMPRESSION—IGNITION ENGINES UNDER 40 CFR 1039.104(c).''.

* * * * *

(g) * * *

(4) Do not apply TCAFs to gaseous emissions for phase-out engines that you certify to the same numerical standards (and FELs if the engines are certified using ABT) for gaseous pollutants as you certified under the Tier 3 requirements identified in appendix I of this part.

TABLE 2 OF § 1039.104—ALTERNATE FEL CAPS

Maximum engine power	PM FEL cap, g/kW-hr	Model years for the alternate PM FEL cap	NO_X FEL cap, g/kW-hr [a]	Model years for the alternate NO_X FEL cap
19 ≤kW <56	0.30	[b] 2012–2015	.....	.....
56 ≤kW <130 [c]	0.30	2012–2015	3.8	[d] 2012–2015
130 ≤kW ≤560	0.20	2011–2014	3.8	[e] 2011–2014
kW >560 [f]	0.10	2015–2018	3.5	2015–2018

[a] The FEL cap for engines demonstrating compliance with a NO_X + NMHC standard is equal to the previously applicable NO_X + NMHC standard specified in appendix I of this part (generally the Tier 3 standards).

[b] For manufacturers certifying engines under Option #1 of Table 3 of § 1039.102, these alternate FEL caps apply to all 19–56 kW engines for model years from 2013 through 2016 instead of the years indicated in this table. For manufacturers certifying engines under Option #2 of Table 3 of § 1039.102, these alternate FEL caps do not apply to 19–37 kW engines except in model years 2013 to 2015.

[c] For engines below 75 kW, the FEL caps are 0.40 g/kW-hr for PM emissions and 4.4 g/kW-hr for NO_X emissions.

[d] For manufacturers certifying engines in this power category using a percentage phase-in/phase-out approach instead of the alternate NO_X standards of § 1039.102(e)(1), the alternate NO_X FEL cap in the table applies only in the 2014–2015 model years if certifying under § 1039.102(d)(1), and only in the 2015 model year if certifying under § 1039.102(d)(2).

[e] For manufacturers certifying engines in this power category using the percentage phase-in/phase-out approach instead of the alternate NO_X standard of § 1039.102(e)(2), the alternate NO_X FEL cap in the table applies only for the 2014 model year.

[f] For engines above 560 kW, the provision for alternate NO_X FEL caps is limited to generator-set engines.

* * * * *

■ 185. Amend § 1039.135 by revising paragraph (e) introductory text to read as follows:

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

* * * * *

(e) For model year 2019 and earlier, create a separate label with the statement: ''ULTRA LOW SULFUR FUEL ONLY''. Permanently attach this label to the equipment near the fuel inlet or, if you do not manufacture the equipment, take one of the following steps to ensure that the equipment will be properly labeled:

* * * * *

■ 186. Amend § 1039.205 by adding paragraph (c) to read as follows:

§ 1039.205 What must I include in my application?

* * * * *

(c) If your engines are equipped with an engine diagnostic system as required under § 1039.110, explain how it works, describing especially the engine conditions (with the corresponding diagnostic trouble codes) that cause the warning lamp to go on and the design features that minimize the potential for

operation without reductant. Also identify the communication protocol (SAE J1939, SAE J1979, etc.)

* * * * *

■ 187. Amend § 1039.245 by revising paragraph (a) to read as follows:

§ 1039.245 How do I determine deterioration factors from exhaust durability testing?

* * * * *

(a) You may ask us to approve deterioration factors for an engine family with established technology based on engineering analysis instead of testing. Engines certified to a NO_X + NMHC standard or FEL greater than the Tier 3 NO_X + NMHC standard described in appendix I of this part are considered to rely on established technology for gaseous emission control, except that this does not include any engines that use exhaust-gas recirculation or aftertreatment. In most cases, technologies used to meet the Tier 1 and Tier 2 emission standards would be considered to be established technology.

* * * * *

■ 188. Revise § 1039.255 to read as follows:

§ 1039.255 What decisions may EPA make regarding a certificate of conformity?

(a) If we determine an application is complete and shows that the engine family meets all the requirements of this part and the Act, we will issue a certificate of conformity for the engine family for that model year. We may make the approval subject to additional conditions.

(b) We may deny an application for certification if we determine that an engine family fails to comply with emission standards or other requirements of this part or the Clean Air Act. We will base our decision on all available information. If we deny an application, we will explain why in writing.

(c) In addition, we may deny your application or suspend or revoke a certificate of conformity if you do any of the following:

(1) Refuse to comply with any testing or reporting requirements in this part.

(2) Submit false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete.

(3) Cause any test data to become inaccurate.

(4) Deny us from completing authorized activities (see 40 CFR 1068.20). This includes a failure to provide reasonable assistance.

(5) Produce engines for importation into the United States at a location where local law prohibits us from carrying out authorized activities.

(6) Fail to supply requested information or amend an application to include all engines being produced.

(7) Take any action that otherwise circumvents the intent of the Act or this part.

(d) We may void a certificate of conformity if you fail to keep records, send reports, or give us information as required under this part or the Act. Note that these are also violations of 40 CFR 1068.101(a)(2).

(e) We may void a certificate of conformity if we find that you intentionally submitted false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete.

(f) If we deny an application or suspend, revoke, or void a certificate, you may ask for a hearing (see § 1039.820).

■ 189. Amend § 1039.601 by revising paragraph (b) to read as follows:

§ 1039.601 What compliance provisions apply?

* * * * *

(b) Subpart C of this part describes how to test and certify dual-fuel and flexible-fuel engines. Some multi-fuel engines may not fit either of those defined terms. For such engines, we will determine whether it is most appropriate to treat them as single-fuel engines, dual-fuel engines, or flexible-fuel engines based on the range of possible and expected fuel mixtures. For example, an engine might burn natural gas but initiate combustion with a pilot injection of diesel fuel. If the engine is designed to operate with a single fueling algorithm (*i.e.*, fueling rates are fixed at a given engine speed and load condition), we would generally treat it as a single-fuel engine. In this context, the combination of diesel fuel and natural gas would be its own fuel type. If the engine is designed to also operate on diesel fuel alone, we would generally treat it as a dual-fuel engine. If the engine is designed to operate on varying mixtures of the two fuels, we would generally treat it as a flexible-fuel engine. To the extent that requirements vary for the different fuels or fuel mixtures, we may apply the more stringent requirements.

■ 190. Amend § 1039.620 by revising paragraph (b) to read as follows:

§ 1039.620 What are the provisions for exempting engines used solely for competition?

* * * * *

(b) The definition of nonroad engine in 40 CFR 1068.30 excludes engines used solely for competition. These engines are not required to comply with this part, but 40 CFR 1068.101 prohibits the use of competition engines for noncompetition purposes.

* * * * *

■ 191. Amend § 1039.625 by revising the introductory text, paragraphs (d)(4) introductory text, (e)(1) and (3), (g)(1)(vi), (j) introductory text, and (j)(1) to read as follows:

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

The provisions of this section allow equipment manufacturers to produce equipment with engines that are subject to less stringent emission standards after the Tier 4 emission standards begin to apply. To be eligible to use the provisions of this section, you must follow all the instructions in this section. See § 1039.626 for requirements that apply specifically to companies that manufacture equipment outside the United States and to companies that import such equipment without manufacturing it. Engines and equipment you produce under this section are exempt from the prohibitions in 40 CFR 1068.101(a)(1), subject to the provisions of this section.

* * * * *

(d) * * *

(4) You may start using the allowances under this section for engines that are not yet subject to Tier 4 standards, as long as the seven-year period for using allowances under the Tier 2 or Tier 3 program has expired. Table 3 of this section shows the years for which this paragraph (d)(4) applies. To use these early allowances, you must use engines that meet the emission standards described in paragraph (e) of this section. You must also count these units or calculate these percentages as described in paragraph (c) of this section and apply them toward the total number or percentage of equipment with exempted engines we allow for the Tier 4 standards as described in paragraph (b) of this section. The maximum number of cumulative early allowances under this paragraph (d)(4) is 10 percent under the percent-of-production allowance or 100 units under the small-volume allowance. For example, if you produce 5 percent of your equipment with engines between 130 and 560 kW that use allowances under this paragraph (d)(4) in 2009, you may use up to an additional 5 percent of your allowances in 2010. If you use allowances for 5 percent of your

equipment in both 2009 and 2010, your 80 percent allowance for 2011–2017 in the 130–560 kW power category decreases to 70 percent. Manufacturers using allowances under this paragraph (d)(4) must comply with the notification and reporting requirements specified in paragraph (g) of this section.

* * * * *

(e) * * *

(1) If you are using the provisions of paragraph (d)(4) of this section, engines must meet the applicable Tier 1 or Tier 2 emission standards described in appendix I of this part.

* * * * *

(3) In all other cases, engines at or above 56 kW and at or below 560 kW must meet the appropriate Tier 3 standards described in appendix I of this part. Engines below 56 kW and engines above 560 kW must meet the appropriate Tier 2 standards described in appendix I of this part.

* * * * *

(g) * * *

(1) * * *

(vi) The number of units in each power category you have sold in years for which the Tier 2 and Tier 3 standards apply.

* * * * *

(j) *Provisions for engine manufacturers.* As an engine manufacturer, you may produce exempted engines as needed under this section. You do not have to request this exemption for your engines, but you must have written assurance from equipment manufacturers that they need a certain number of exempted engines under this section. Send us an annual report of the engines you produce under this section, as described in § 1039.250(a). Exempt engines must meet the emission standards in paragraph (e) of this section and you must meet all the requirements of 40 CFR 1068.265, except that engines produced under the provisions of paragraph (a)(2) of this section must be identical in all material respects to engines previously certified under this part 1039. If you show under 40 CFR 1068.265(c) that the engines are identical in all material respects to engines that you have previously certified to one or more FELs above the standards specified in paragraph (e) of this section, you must supply sufficient credits for these engines. Calculate these credits under subpart H of this part using the previously certified FELs and the alternate standards. You must meet the labeling requirements in § 1039.135, as applicable, with the following exceptions:

(1) Add the following statement instead of the compliance statement in § 1039.135(c)(12):

THIS ENGINE MEETS U.S. EPA EMISSION STANDARDS UNDER 40 CFR 1039.625. SELLING OR INSTALLING THIS ENGINE FOR ANY PURPOSE OTHER THAN FOR THE EQUIPMENT FLEXIBILITY PROVISIONS OF 40 CFR 1039.625 MAY BE A VIOLATION OF FEDERAL LAW SUBJECT TO CIVIL PENALTY.

* * * * *

■ 192. Amend § 1039.626 by revising paragraph (b)(1)(iv) to read as follows:

§ 1039.626 What special provisions apply to equipment imported under the equipment-manufacturer flexibility program?

* * * * *

(b) * * *

(1) * * *

(iv) The number of units in each power category you have imported in years for which the Tier 2 and Tier 3 standards apply.

* * * * *

■ 193. Amend § 1039.655 by revising paragraphs (a)(2) and (b) to read as follows:

§ 1039.655 What special provisions apply to engines sold in Guam, American Samoa, or the Commonwealth of the Northern Mariana Islands?

(a) * * *

(2) The engine meets the latest applicable emission standards in appendix I of this part.

* * * * *

(b) If you introduce an engine into commerce in the United States under this section, you must meet the labeling requirements in § 1039.135, but add the following statement instead of the compliance statement in § 1039.135(c)(12):

THIS ENGINE DOES NOT COMPLY WITH U.S. EPA TIER 4 EMISSION REQUIREMENTS. IMPORTING THIS ENGINE INTO THE UNITED STATES OR ANY TERRITORY OF THE UNITED STATES EXCEPT GUAM, AMERICAN SAMOA, OR THE COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS MAY BE A VIOLATION OF FEDERAL LAW SUBJECT TO CIVIL PENALTY.

* * * * *

■ 194. Amend § 1039.740 by revising paragraph (b) to read as follows:

§ 1039.740 What restrictions apply for using emission credits?

* * * * *

(b) *Emission credits from earlier tiers of standards.* (1) For purposes of ABT under this subpart, you may not use emission credits generated from engines subject to emission standards identified in appendix I of this part, except as specified in § 1039.102(d)(1) or as follows:

If the maximum power of the credit-generating engine is * * *	And it was certified to the following standards identified in appendix I of this part * * *	Then you may use those banked credits for the following Tier 4 engines * * *
(i) kW < 19	Tier 2	kW < 19.
(ii) 19 ≤ kW < 37	Tier 2	kW ≥ 19.
(iii) 37 ≤ kW ≤ 560	Tier 3	kW ≥ 19.
(iv) kW > 560	Tier 2	kW ≥ 19.

(2) Emission credits generated from marine engines certified to the standards identified in appendix I of this part for land-based engines may not be used under this part.

* * * * *

■ 195. Amend § 1039.801 by:

■ a. Revising the definition for ''Low-hour'';

■ b. Revising paragraph (5)(ii) for the definition of ''Model year''; and

■ c. Revising the definitions for ''Small-volume engine manufacturer'', ''Tier 1'', ''Tier 2'', and ''Tier 3''.

The revisions read as follows:

§ 1039.801 What definitions apply to this part?

* * * * *

Low-hour means relating to an engine with stabilized emissions and represents the undeteriorated emission level. This would generally involve less than 300 hours of operation for engines with NO_X aftertreatment and 125 hours of operation for other engines.

* * * * *

Model year * * *

(5) * * *

(ii) For imported engines described in paragraph (5)(ii) of the definition of ''new nonroad engine'' in this section,

model year means the calendar year in which the engine is modified.

* * * * *

Small-volume engine manufacturer means an engine manufacturer with 1,000 or fewer employees that has had annual U.S.-directed production volume of no more than 2,500 units. For manufacturers owned by a parent company, these limits apply to the total number of employees and production volume from the parent company and all its subsidiaries.

* * * * *

Tier 1 means relating to the Tier 1 emission standards identified in appendix I of this part.

Tier 2 means relating to the Tier 2 emission standards identified in appendix I of this part.

Tier 3 means relating to the Tier 3 emission standards identified in appendix I of this part.

* * * * *

■ 196. Add appendix I to part 1039 to read as follows:

Appendix I to Part 1039—Summary of Previous Emission Standards

The following standards, which EPA originally adopted under 40 CFR part 89, apply to nonroad compression-ignition engines produced before the model years specified in § 1039.1:

(a) Tier 1 standards apply as summarized in the following table:

TABLE 1 TO APPENDIX I—TIER 1 EMISSION STANDARDS

[g/kW-hr]

Rated power (kW)	Starting model year	NO_X	HC	NO_X+NMHC	CO	PM
kW < 8	2000	.....	.....	10.5	8.0	1.0
8 ≤ kW < 19	2000	.....	.....	9.5	6.6	0.80
19 ≤ kW < 37	1999	.....	.....	9.5	5.5	0.80
37 ≤ kW < 75	1998	9.2				
75 ≤ kW < 130	1997					
130 ≤ kW ≤ 560	1996	9.2	1.3		11.4	0.54
kW > 560	2000					

(b) Tier 2 standards apply as summarized in the following table:

TABLE 2 TO APPENDIX I—TIER 2 EMISSION STANDARDS

[g/kW-hr]

Rated power (kW)	Starting model year	NO_X+NMHC	CO	PM
kW < 8	2005	7.5	8.0	0.80
8 ≤ kW < 19	2005	7.5	6.6	0.80
19 ≤ kW < 37	2004	7.5	5.5	0.60
37 ≤ kW < 75	2004	7.5	5.0	0.40
75 ≤ kW < 130	2003	6.6	5.0	0.30
130 ≤ kW < 225	2003	6.6	3.5	0.20
225 ≤ kW < 450	2001	6.4	3.5	0.20
450 ≤ kW ≤ 560	2002			
kW > 560	2006			

(c) Tier 3 standards apply as summarized in the following table:

TABLE 3 TO APPENDIX I—TIER 3 EMISSION STANDARDS

[g/kW-hr]

Rated power (kW)	Starting model year	NO_X+NMHC	CO	PM
37 ≤ kW < 75	2008	4.7	5.0	0.40
75 ≤ kW < 130	2007	4.0	5.0	0.30
130 ≤ kW ≤ 560	2006	4.0	3.5	0.20

(d) Tier 1 through Tier 3 standards applied only for discrete-mode steady-state testing. There were no not-to-exceed standards or transient testing.

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

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

Authority: 42 U.S.C. 7401–7671q.

■ 198. Amend § 1042.1 by:

■ a. Revising paragraphs (b) and (c); and

■ b. Removing and reserving paragraph (d).

The revisions read as follows:

§ 1042.1 Applicability.

* * * * *

(b) New engines with maximum engine power below 37 kW and originally manufactured and certified before the model years identified in Table 1 to this section are subject to emission standards as specified in appendix I of this part. The provisions of this part do not apply for such engines, except as follows beginning June 29, 2010:

(1) The allowances of this part apply.

(2) The definitions of ''new marine engine'' and ''model year'' apply.

(c) Marine engines originally meeting Tier 1 or Tier 2 standards as specified in appendix I of this part remain subject to those standards. This includes uncertified engines that meet standards under 40 CFR 1068.265. Those engines remain subject to recall provisions as specified in 40 CFR part 1068, subpart F, throughout the useful life corresponding to the original certification. Also, tampering and defeat-device prohibitions continue to apply for those engines as specified in 40 CFR 1068.101. The remanufacturing provisions in subpart I of this part may apply for remanufactured engines originally manufactured in model years before the model years identified in Table 1 to this section.

* * * * *

■ 199. Amend § 1042.101 by revising paragraphs (a)(6), (c)(2), and (e)(2) to read as follows:

§ 1042.101 Exhaust emission standards for Category 1 and Category 2 engines.

(a) * * *

(6) Interim Tier 4 PM standards apply for 2014 and 2015 model year engines between 2000 and 3700 kW as specified in this paragraph (a)(6). These engines are considered Tier 4 engines.

(i) For Category 1 engines, the Tier 3 PM standards from Table 1 to this section continue to apply. PM FELs for these engines may not be higher than the applicable Tier 2 PM standards specified in appendix I of this part.

(ii) For Category 2 engines with per-cylinder displacement below 15.0 liters, the Tier 3 PM standards from Table 2 to this section continue to apply. PM FELs for these engines may not be higher than 0.27 g/kW-hr.

(iii) For Category 2 engines with per-cylinder displacement at or above 15.0 liters, the PM standard is 0.34 g/kW-hr for engines at or above 2000 kW and below 3300 kW, and 0.27 g/kW-hr for engines at or above 3300 kW and below 3700 kW. PM FELs for these engines may not be higher than 0.50 g/kW-hr.

* * * * *

(c) * * *

(2) Determine the applicable NTE zone and subzones as described in § 1042.515. Determine NTE multipliers for specific zones and subzones and pollutants as follows:

(i) For marine engines certified using the duty cycle specified in § 1042.505(b)(1), except for variable-speed propulsion marine engines used with controllable-pitch propellers or with electrically coupled propellers, apply the following NTE multipliers:

(A) Subzone 1: 1.2 for Tier 3 NO_X+HC standards.

(B) Subzone 1: 1.5 for Tier 4 standards and Tier 3 PM and CO standards.

(C) Subzone 2: 1.5 for Tier 4 NO_X and HC standards and for Tier 3 NO_X+HC standards.

(D) Subzone 2: 1.9 for PM and CO standards.

(ii) For recreational marine engines certified using the duty cycle specified in § 1042.505(b)(2), except for variable-speed marine engines used with controllable-pitch propellers or with electrically coupled propellers, apply the following NTE multipliers:

(A) Subzone 1: 1.2 for Tier 3 NO_X+HC standards.

(B) Subzone 1: 1.5 for Tier 3 PM and CO standards.

(C) Subzones 2 and 3: 1.5 for Tier 3 NO_X+HC standards.

(D) Subzones 2 and 3: 1.9 for PM and CO standards.

(iii) For variable-speed marine engines used with controllable-pitch propellers or with electrically coupled propellers that are certified using the duty cycle specified in § 1042.505(b)(1), (2), or (3), apply the following NTE multipliers:

(A) Subzone 1: 1.2 for Tier 3 NO_X+HC standards.

(B) Subzone 1: 1.5 for Tier 4 standards and Tier 3 PM and CO standards.

(C) Subzone 2: 1.5 for Tier 4 NO_X and HC standards and for Tier 3 NO_X+HC standards.

(D) Subzone 2: 1.9 for PM and CO standards. However, there is no NTE standard in Subzone 2b for PM emissions if the engine family's applicable standard for PM is at or above 0.07 g/kW-hr.

(iv) For constant-speed engines certified using a duty cycle specified in § 1042.505(b)(3) or (4), apply the following NTE multipliers:

(A) Subzone 1: 1.2 for Tier 3 NO_X+HC standards.

(B) Subzone 1: 1.5 for Tier 4 standards and Tier 3 PM and CO standards.

(C) Subzone 2: 1.5 for Tier 4 NO_X and HC standards and for Tier 3 NO_X+HC standards.

(D) Subzone 2: 1.9 for PM and CO standards. However, there is no NTE standard for PM emissions if the engine family's applicable standard for PM is at or above 0.07 g/kW-hr.

(v) For variable-speed auxiliary marine engines certified using the duty cycle specified in § 1042.505(b)(5)(ii) or (iii):

(A) Subzone 1: 1.2 for Tier 3 NO_X+HC standards.

(B) Subzone 1: 1.5 for Tier 4 standards and Tier 3 PM and CO standards.

(C) Subzone 2: 1.2 for Tier 3 NO_X+HC standards.

(D) Subzone 2: 1.5 for Tier 4 standards and Tier 3 PM and CO standards. However, there is no NTE standard for PM emissions if the engine family's applicable standard for PM is at or above 0.07 g/kW-hr.

* * * * *

(e) * * *

(2) Specify a longer useful life in hours for an engine family under either of two conditions:

(i) If you design your engine to operate longer than the minimum useful life. Indicators of design life include your recommended overhaul interval and may also include your advertising and marketing materials.

(ii) If your basic mechanical warranty is longer than the minimum useful life.

* * * * *

■ 200. Amend § 1042.104 by revising paragraphs (a)(2) and (c) to read as follows:

§ 1042.104 Exhaust emission standards for Category 3 engines.

(a) * * *

(2) NO_X standards apply based on the engine's model year and maximum in-use engine speed as shown in the following table:

TABLE 1 TO § 1042.104—NO_X EMISSION STANDARDS FOR CATEGORY 3 ENGINES

[g/kW-hr]

Emission standards	Model year	Maximum in-use engine speed		
		Less than 130 RPM	130–2000 RPM [a]	Over 2000 RPM
Tier 1	2004–2010	17.0	$45.0 \cdot n^{(-0.20)}$	9.8
Tier 2	2011–2015	14.4	$44.0 \cdot n^{(-0.23)}$	7.7
Tier 3 [b]	2016 and later	3.4	$9.0 \cdot n^{(-0.20)}$	2.0

[a] Applicable standards are calculated from n (maximum in-use engine speed, in RPM, as specified in § 1042.140). Round the standards to one decimal place.

[b] For engines designed with on-off controls as specified in § 1042.115(g), the Tier 2 standards continue to apply any time the engine has disabled its Tier 3 NO_X emission controls.

* * * * *

(c) *Mode caps.* Measured NO_X emissions from Tier 3 engines may not exceed the cap specified in this paragraph (c) for any applicable duty-cycle test modes with power greater than 10 percent maximum engine power. Calculate the mode cap by multiplying the applicable Tier 3 NO_X standard by 1.5 and rounding to the nearest 0.1 g/kW-hr. Note that mode caps do not apply for pollutants other than NO_X and do not apply for any modes of operation outside of the applicable duty cycles in § 1042.505. Category 3 engines are not subject to not-to-exceed standards.

* * * * *

■ 201. Amend § 1042.115 by revising paragraph (g) to read as follows:

§ 1042.115 Other requirements.

* * * * *

(g) *On-off controls for engines on Category 3 vessels.* Manufacturers may equip Category 3 propulsion engines with features that disable Tier 3 NO_X emission controls subject to the provisions of this paragraph (g). For auxiliary engines allowed to use on-off controls as specified in § 1042.650(d), read ''Tier 2'' to mean ''IMO Tier II'' and read ''Tier 3'' to mean ''IMO Tier III''.

(1) Features that disable Tier 3 NO_X emission controls are considered to be AECDs whether or not they meet the definition of an AECD. For example, manually operated on-off features are AECDs under this paragraph (g). The features must be identified in your application for certification as AECDs. For purposes of this paragraph (g), the term ''features that disable Tier 3 emission controls'' includes (but is not limited to) any combination of the following that cause the engine's emissions to exceed any Tier 3 emission standard:

(i) Bypassing of exhaust aftertreatment.

(ii) Reducing or eliminating flow of reductant to an SCR system.

(iii) Modulating engine calibration in a manner that increases engine-out emissions of a regulated pollutant.

(2) You must demonstrate that the AECD will not disable NO_X emission controls while operating shoreward of the boundaries of the North American ECA and the U.S. Caribbean Sea ECA. You must demonstrate that the AECD will not disable emission control while operating in these waters. (Note: See the regulations in 40 CFR part 1043 for requirements related to operation in ECAs, including foreign ECAs.) Compliance with this paragraph (g)(2) will generally require that the AECD operation be based on Global Positioning System (GPS) inputs. We may consider any relevant information to determine whether your AECD conforms to this paragraph (g).

(3) The onboard computer log must record in nonvolatile computer memory all incidents of engine operation with the Tier 3 NO_X emission controls disabled.

(4) The engine must comply with the Tier 2 NO_X standard when the Tier 3 NO_X emission controls are disabled.

■ 202. Amend § 1042.125 by revising paragraph (e) to read as follows:

§ 1042.125 Maintenance instructions.

* * * * *

(e) *Maintenance that is not emission-related.* For maintenance unrelated to emission controls, you may schedule any amount of inspection or maintenance. You may also take these inspection or maintenance steps during service accumulation on your emission-data engines, as long as they are reasonable and technologically necessary. This might include adding engine oil, changing air, fuel, or oil filters, servicing engine-cooling systems or fuel-water separator cartridges or elements, and adjusting idle speed, governor, engine bolt torque, valve lash, or injector lash. You may not perform this nonemission-related maintenance on emission-data engines more often than the least frequent intervals that you recommend to the ultimate purchaser.

* * * * *

■ 203. Amend § 1042.135 by revising paragraph (c)(13) to read as follows:

§ 1042.135 Labeling.

* * * * *

(c) * * *

(13) For engines above 130 kW that are intended for installation on domestic or public vessels, include the following statement: ''THIS ENGINE DOES NOT COMPLY WITH INTERNATIONAL MARINE REGULATIONS UNLESS IT IS ALSO COVERED BY AN EIAPP CERTIFICATE.''

* * * * *

■ 204. Amend § 1042.145 by removing and reserving paragraphs (b), (c), (e), (h), and (i) and revising paragraph (j) to read as follows:

§ 1042.145 Interim provisions.

* * * * *

(j) *Installing land-based engines in marine vessels.* Vessel manufacturers and marine equipment manufacturers may apply the provisions of §§ 1042.605 and 1042.610 to land-based engines with maximum engine power at or above 37 kW and at or below 560 kW if they meet the Tier 3 emission standards in appendix I of 40 CFR part 1039 as specified in 40 CFR 1068.265. All the provisions of § 1042.605 or § 1042.610 apply as if those engines were certified to emission standards under 40 CFR part 1039. Similarly, engine manufacturers, vessel manufacturers, and marine equipment manufacturers must comply with all the provisions of 40 CFR part 1039 as if those engines were installed in land-based equipment. The following provisions apply for engine manufacturers shipping engines to vessel manufacturers or marine equipment manufacturers under this paragraph (j):

(1) You must label the engine as described in 40 CFR 1039.135, but

identify the engine family name as it was last certified under 40 CFR part 1039 and include the following alternate compliance statement: ''THIS ENGINE MEETS THE TIER 3 STANDARDS FOR LAND-BASED NONROAD DIESEL ENGINES UNDER 40 CFR PART 1039. THIS ENGINE MAY BE USED ONLY IN A MARINE VESSEL UNDER THE DRESSING PROVISIONS OF 40 CFR 1042.605 OR 40 CFR 1042.610.''

(2) You must use the provisions of 40 CFR 1068.262 for shipping uncertified engines under this section to secondary engine manufacturers.

* * * * *

■ 205. Amend § 1042.235 by revising paragraph (d)(3) to read as follows:

§ 1042.235 Emission testing related to certification.

* * * * *

(d) * * *

(3) The data show that the emission-data engine would meet all the requirements of this part that apply to the engine family covered by the application for certification. For engines originally tested to demonstrate compliance with Tier 1 or Tier 2 standards, you may consider those test procedures to be equivalent to the procedures we specify in subpart F of this part.

* * * * *

■ 206. Revise § 1042.255 to read as follows:

§ 1042.255 EPA decisions.

(a) If we determine an application is complete and shows that the engine family meets all the requirements of this part and the Clean Air Act, we will issue a certificate of conformity for the engine family for that model year. We may make the approval subject to additional conditions.

(b) We may deny an application for certification if we determine that an engine family fails to comply with emission standards or other requirements of this part or the Clean Air Act. We will base our decision on all available information. If we deny an application, we will explain why in writing.

(c) In addition, we may deny your application or suspend or revoke a certificate of conformity if you do any of the following:

(1) Refuse to comply with any testing or reporting requirements in this part.

(2) Submit false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete.

(3) Cause any test data to become inaccurate.

(4) Deny us from completing authorized activities (see 40 CFR 1068.20). This includes a failure to provide reasonable assistance.

(5) Produce engines for importation into the United States at a location where local law prohibits us from carrying out authorized activities.

(6) Fail to supply requested information or amend an application to include all engines being produced.

(7) Take any action that otherwise circumvents the intent of the Clean Air Act or this part.

(d) We may void a certificate of conformity if you fail to keep records, send reports, or give us information as required under this part or the Clean Air Act. Note that these are also violations of 40 CFR 1068.101(a)(2).

(e) We may void a certificate of conformity if we find that you intentionally submitted false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete after submission.

(f) If we deny an application or suspend, revoke, or void a certificate, you may ask for a hearing (see § 1042.920).

■ 207. Amend § 1042.302 by revising paragraph (a) to read as follows:

§ 1042.302 Applicability of this subpart for Category 3 engines.

* * * * *

(a) You must test each Category 3 engine at the sea trial of the vessel in which it is installed or within the first 300 hours of operation, whichever occurs first. This may involve testing a fully assembled production engine before it is installed in the vessel. For engines with on-off controls, you may omit testing to demonstrate compliance with Tier 2 standards if the engine does not rely on aftertreatment when Tier 3 emission controls are disabled. Since you must test each engine, the provisions of §§ 1042.310 and 1042.315(b) do not apply for Category 3 engines. If we determine that an engine failure under this subpart is caused by defective components or design deficiencies, we may revoke or suspend your certificate for the engine family as described in § 1042.340. If we determine that an engine failure under this subpart is caused only by incorrect assembly, we may suspend your certificate for the engine family as described in § 1042.325. If the engine fails, you may continue operating only to complete the sea trial and return to port. It is a violation of 40 CFR 1068.101(b)(1) to operate the vessel further until you remedy the cause of failure. Each two-hour period of such operation constitutes a separate offense. A violation lasting less than two hours constitutes a single offense.

* * * * *

■ 208. Amend § 1042.605 by revising paragraphs (a), (b), (c), (d)(1)(ii), (d)(2), (d)(3)(ii), (f), and (h) to read as follows:

§ 1042.605 Dressing engines already certified to other standards for nonroad or heavy-duty highway engines for marine use.

(a) *General provisions.* If you are an engine manufacturer (including someone who marinizes a land-based engine), this section allows you to introduce new marine engines into U.S. commerce if they are already certified to the requirements that apply to compression-ignition engines under 40 CFR parts 85 and 86 or 40 CFR part 1033 or 1039 for the appropriate model year. If you comply with all the provisions of this section, we consider the certificate issued under 40 CFR part 86, 1033, or 1039 for each engine to also be a valid certificate of conformity under this part for its model year, without a separate application for certification under the requirements of this part. This section does not apply for Category 3 engines.

(b) *Vessel-manufacturer provisions.* If you are not an engine manufacturer, you may install an engine certified for the appropriate model year under 40 CFR part 86, 1033, or 1039 in a marine vessel as long as you do not make any of the changes described in paragraph (d)(3) of this section and you meet the requirements of paragraph (e) of this section. If you modify the non-marine engine in any of the ways described in paragraph (d)(3) of this section, we will consider you a manufacturer of a new marine engine. Such engine modifications prevent you from using the provisions of this section.

(c) *Liability.* Engines for which you meet the requirements of this section are exempt from all the requirements and prohibitions of this part, except for those specified in this section. Engines exempted under this section must meet all the applicable requirements from 40 CFR parts 85 and 86 or 40 CFR part 1033 or 1039. This paragraph (c) applies to engine manufacturers, vessel manufacturers that use such an engine, and all other persons as if the engine were used in its originally intended application. The prohibited acts of 40 CFR 1068.101(a)(1) apply to these new engines and vessels; however, we consider the certificate issued under 40 CFR part 86, 1033, or 1039 for each engine to also be a valid certificate of conformity under this part for its model

year. If we make a determination that these engines do not conform to the regulations in this chapter during their useful life, we may require you to recall them under 40 CFR part 85 or 1068.

(d) * * *

(1) * * *

(ii) Land-based compression-ignition nonroad engines (40 CFR part 1039).

* * * * *

(2) The engine must have the label required under 40 CFR part 86, 1033, or 1039.

(3) * * *

(ii) Replacing an original turbocharger, except that small-volume engine manufacturers may replace an original turbocharger on a recreational engine with one that matches the performance of the original turbocharger.

* * * * *

(f) *Failure to comply.* If your engines do not meet the criteria listed in paragraph (d) of this section, they will be subject to the standards, requirements, and prohibitions of this part and the certificate issued under 40 CFR part 86, 1033, or 1039 will not be deemed to also be a certificate issued under this part. Introducing these engines into U.S. commerce as marine engines without a valid exemption or certificate of conformity under this part violates the prohibitions in 40 CFR 1068.101(a)(1).

* * * * *

(h) *Participation in averaging, banking and trading.* Engines adapted for marine use under this section may not generate or use emission credits under this part. These engines may generate credits under the ABT provisions in 40 CFR part 86, 1033, or 1039, as applicable. These engines must use emission credits under 40 CFR part 86, 1033, or 1039 as applicable if they are certified to an FEL that exceeds an emission standard.

* * * * *

■ 209. Amend § 1042.610 by revising paragraphs (a), (c), (d)(1), (f), and (g) to read as follows:

§ 1042.610 Certifying auxiliary marine engines to land-based standards.

* * * * *

(a) *General provisions.* If you are an engine manufacturer, this section allows you to introduce new marine engines into U.S. commerce if they are already certified to the requirements that apply to compression-ignition engines under 40 CFR part 1039 for the appropriate model year. If you comply with all the provisions of this section, we consider the certificate issued under 40 CFR part 1039 for each engine to also be a valid certificate of conformity under this part for its model year, without a separate application for certification under the requirements of this part.

* * * * *

(c) *Liability.* Engines for which you meet the requirements of this section are exempt from all the requirements and prohibitions of this part, except for those specified in this section. Engines exempted under this section must meet all the applicable requirements from 40 CFR part 1039. This paragraph (c) applies to engine manufacturers, vessel manufacturers that use such an engine, and all other persons as if the engine were used in its originally intended application. The prohibited acts of 40 CFR 1068.101(a)(1) apply to these new engines and vessels; however, we consider the certificate issued under 40 CFR part 1039 for each engine to also be a valid certificate of conformity under this part for its model year. If we make a determination that these engines do not conform to the regulations in this chapter during their useful life, we may require you to recall them under 40 CFR part 1068.

(d) * * *

(1) The marine engine must be identical in all material respects to a land-based engine covered by a valid certificate of conformity for the appropriate model year showing that it meets emission standards for engines of that power rating under 40 CFR part 1039.

* * * * *

(f) *Failure to comply.* If your engines do not meet the criteria listed in paragraph (d) of this section, they will be subject to the standards, requirements, and prohibitions of this part and the certificate issued under 40 CFR part 1039 will not be deemed to also be a certificate issued under this part. Introducing these engines into U.S. commerce as marine engines without a valid exemption or certificate of conformity under this part violates the prohibitions in 40 CFR 1068.101(a)(1).

(g) *Participation in averaging, banking, and trading.* Engines using the exemption in this section may not generate or use emission credits under this part. These engines may generate credits under the ABT provisions in 40 CFR part 1039, as applicable. These engines must use emission credits under 40 CFR part 1039 as applicable if they are certified to an FEL that exceeds an emission standard.

* * * * *

■ 210. Amend § 1042.615 by revising paragraphs (a) introductory text and (a)(1) and (3) and adding paragraphs (f) and (g) to read as follows:

§ 1042.615 Replacement engine exemption.

* * * * *

(a) This paragraph (a) applies instead of the provisions of 40 CFR 1068.240(b)(2) for installing new marine engines in vessels that are not ''new vessels''. The prohibitions in 40 CFR 1068.101(a)(1) do not apply to a new replacement engine if all the following conditions are met:

(1) You use good engineering judgment to determine that no engine certified to the current requirements of this part is produced by any manufacturer with the appropriate physical or performance characteristics to repower the vessel. We have determined that Tier 4 engines with aftertreatment technology do not have the appropriate physical or performance characteristics to replace uncertified engines or engines certified to emission standards that are less stringent than the Tier 4 standards.

* * * * *

(3) Send us a report by September 30 of each year describing your engine shipments under this section from the preceding calendar year. Your report must include all the following things and be signed by an authorized representative of your company:

(i) Identify the number of Category 1 and Category 2 exempt replacement engines that meet Tier 1, Tier 2, or Tier 3 standards, or that meet no EPA standards. Count engines separately for each tier of standards. Identify the number of those engines that have been shipped (directly or indirectly) to a vessel owner. This includes engines shipped to anyone intending to install engines on behalf of a specific engine owner. Also include commercial Tier 3 engines with maximum engine power at or above 600 kW even if they have not been shipped to or designated for a specific vessel owner in the specified time frame.

(ii) Describe how you made the determinations described in paragraph (a)(1) of this section for each Category 1 and Category 2 exempt replacement engine for each vessel during the preceding year. For Tier 3 replacement engines at or above 600 kW, describe why any engines certified to Tier 4 standards without aftertreatment are not suitable.

(iii) Identify the number of Category 3 exempt replacement engines. We may require you to describe how you made the determinations described in paragraph (a)(1) of this section for each engine.

(iv) Include the following statement:

I certify that the statements and information in the enclosed document

are true, accurate, and complete to the best of my knowledge. I am aware that there are significant civil and criminal penalties for submitting false statements and information, or omitting required statements and information.

* * * * *

(f) The provisions of 40 CFR 1068.240(c) allow you to ship a limited number of exempt replacement engines to vessel owners or distributors without making the determinations described in paragraph (a) of this section. Note that such engines do not count toward the production limits of 40 CFR 1068.240(c) if you meet all the requirements of this section by the due date for the annual report. You may count Tier 3 commercial marine replacement engines at or above 600 kW as tracked engines under 40 CFR 1068.240(b) even if they have not been shipped to or designated for a specific vessel owner in the specified time frame.

(g) In unusual circumstances, you may ask us to allow you to apply the replacement engine exemption of this section for repowering a vessel that becomes a ''new vessel'' under § 1042.901 as a result of modifications, as follows:

(1) You must demonstrate that no manufacturer produces an engine certified to Tier 4 standards with the appropriate physical or performance characteristics to repower the vessel. We will consider concerns about the size of the replacement engine and its compatibility with vessel components relative to the overall scope of the project.

(2) Exempt replacement engines under this paragraph (g) must meet the Tier 3 standards specified in § 1042.101 (or the Tier 2 standards if there are no Tier 3 standards).

(3) We will not approve a request for an exemption from the Tier 3 standards for any engines.

(4) You may not use the exemption provisions for untracked replacement engines under 40 CFR 1068.240(c) for repowering a vessel that becomes a ''new vessel'' under § 1042.901 as a result of modifications.

■ 211. Amend § 1042.650 by revising the introductory text and paragraph (b)(4) to read as follows:

§ 1042.650 Exemptions for migratory vessels and auxiliary engines on Category 3 vessels.

The provisions of paragraphs (a) through (c) of this section apply for Category 1 and Category 2 engines, including auxiliary engines installed on vessels with Category 3 propulsion engines. Paragraphs (a) through (c) do not apply for any Category 3 engines. All engines exempted under this section must comply with the applicable requirements of 40 CFR part 1043.

* * * * *

(b) * * *

(4) Operating a vessel containing an engine exempted under this paragraph (b) violates the prohibitions in 40 CFR 1068.101(a)(1) if the vessel is not in full compliance with applicable requirements for international safety specified in paragraph (b)(1)(i) of this section.

* * * * *

■ 212. Amend § 1042.655 by revising the paragraph (b) to read as follows:

§ 1042.655 Special certification provisions for Category 3 engines with aftertreatment.

* * * * *

(b) *Required testing.* The emission-data engine must be tested as specified in subpart F of this part. Testing engine-out emissions to simulate operation with disabled Tier 3 emission controls must simulate backpressure and other parameters as needed to represent in-use operation with an SCR catalyst. The catalyst material or other aftertreatment device must be tested under conditions that accurately represent actual engine conditions for the test points. This catalyst or aftertreatment testing may be performed on a bench scale.

* * * * *

§ 1042.701 [Amended]

■ 213. Amend § 1042.701 by removing and reserving paragraph (j).

■ 214. Amend § 1042.801 by revising paragraph (f)(1) to read as follows:

§ 1042.801 General provisions.

* * * * *

(f) * * *

(1) Only fuel additives registered under 40 CFR part 79 may be used under this paragraph (f).

* * * * *

■ 215. Amend § 1042.836 by revising the introductory text and paragraph (c) to read as follows:

§ 1042.836 Marine certification of locomotive remanufacturing systems.

If you certify a Tier 0, Tier 1, or Tier 2 remanufacturing system for locomotives under 40 CFR part 1033, you may also certify the system under this part, according to the provisions of this section.

* * * * *

(c) Systems that were certified to the standards of 40 CFR part 92 are subject to the following restrictions:

(1) Tier 0 locomotive systems may not be used for any Category 1 engines or Tier 1 or later Category 2 engines.

(2) Where systems certified to the standards of 40 CFR part 1033 are also available for an engine, you may not use a system certified to the standards of 40 CFR part 92.

■ 216. Amend § 1042.901 by revising the definition for ''Low-hour'' and paragraph (3) of the definition for ''Model year'' to read as follows:

§ 1042.901 Definitions.

* * * * *

Low-hour means relating to an engine that has stabilized emissions and represents the undeteriorated emission level. This would generally involve less than 300 hours of operation for engines with NO_X aftertreatment and 125 hours of operation for other engines.

* * * * *

Model year * * *

(3) For an uncertified marine engine excluded under § 1042.5 that is later subject to this part as a result of being installed in a different vessel, model year means the calendar year in which the engine was installed in the non-excluded vessel. For a marine engine excluded under § 1042.5 that is later subject to this part as a result of reflagging the vessel, model year means the calendar year in which the engine was originally manufactured. For a marine engine that becomes new under paragraph (7) of the definition of ''new marine engine,'' model year means the calendar year in which the engine was originally manufactured. (See definition of ''new marine engine,'' paragraphs (3) and (7).)

* * * * *

■ 217. Revise § 1042.910 to read as follows:

§ 1042.910 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Environmental Protection Agency must publish a document in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue NW, Washington, DC 20004, *www.epa.gov/dockets*, (202) 202–1744, and is available from the sources listed in this section. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fedreg.legal@nara.gov* or go to: *http://www.archives.gov/federal_register/*

code_of_federal_regulations/ibr_locations.html.

(b) The International Maritime Organization, 4 Albert Embankment, London SE1 7SR, United Kingdom, or *www.imo.org*, or 44–(0)20–7735–7611.

(1) MARPOL Annex VI, Regulations for the Prevention of Air Pollution from Ships, Fourth Edition, 2017, and NO_X Technical Code 2008.

(i) Revised MARPOL Annex VI, Regulations for the Prevention of Pollution from Ships, Fourth Edition, 2017 (''2008 Annex VI''); IBR approved for § 1042.901.

(ii) NO_X Technical Code 2008, Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines, 2017 Edition, (''NO_X Technical Code''); IBR approved for §§ 1042.104(g), 1042.230(d), 1042.302(c) and (e), 1042.501(g), and 1042.901.

(2) [Reserved]

■ 218. Amend appendix I to part 1042 by revising paragraphs (a) introductory text, (b) introductory text, and (b)(3) to read as follows:

Appendix I to Part 1042—Summary of Previous Emission Standards

* * * * *

(a) *Engines below 37 kW.* Tier 1 and Tier 2 standards for engines below 37 kW originally adopted under 40 CFR part 89 apply as follows:

* * * * *

(b) *Engines at or above 37 kW.* Tier 1 and Tier 2 standards for engines at or above 37 kW originally adopted under 40 CFR part 94 apply as follows:

* * * * *

(3) *Tier 2 supplemental standards.* The following not-to-exceed emission standards apply for all engines subject to the Tier 2 standards described in paragraph (b)(2) of this appendix.

(i) *Commercial marine engines.* (A) 1.20 times the applicable standards (or FELs) when tested in accordance with the supplemental test procedures specified in § 1042.515 at loads greater than or equal to 45 percent of the maximum power at rated speed or 1.50 times the applicable standards (or FELs) at loads less than 45 percent of the maximum power at rated speed.

(B) As an option, the manufacturer may instead choose to comply with limits of 1.25 times the applicable standards (or FELs) when tested over the whole power range in accordance with the supplemental test procedures specified in § 1042.515.

(ii) *Recreational marine engines.* (A) 1.20 times the applicable standards (or FELs) when tested in accordance with the supplemental test procedures specified in § 1042.515 at loads greater than or equal to 45 percent of the maximum power at rated speed and speeds less than 95 percent of maximum test speed, or 1.50 times the applicable standards (or FELs) at loads less than 45 percent of the maximum power at rated speed, or 1.50 times the applicable standards (or FELs) at any loads for speeds greater than or equal to 95 percent of the maximum test speed.

(B) As an option, the manufacturer may instead choose to comply with limits of 1.25 times the applicable standards (or FELs) when tested over the whole power range in accordance with the supplemental test procedures specified in § 1042.515.

PART 1043—CONTROL OF NO_X, SO_X, AND PM EMISSIONS FROM MARINE ENGINES AND VESSELS SUBJECT TO THE MARPOL PROTOCOL

■ 219. The authority citation for part 1043 continues to read as follows:

Authority: 33 U.S.C. 1901–1912.

■ 220. Amend § 1043.41 by revising paragraph (a) to read as follows:

§ 1043.41 EIAPP certification process.

* * * * *

(a) You must send the Designated Certification Officer a separate application for an EIAPP certificate for each engine family. An EIAPP certificate is valid starting with the indicated effective date and is valid for any production until such time as the design of the engine family changes or more stringent emission standards become applicable, whichever comes first. Note that an EIAPP certificate demonstrating compliance with Tier I or Tier II standards (but not the Tier III standard) is only a limited authorization to install engines on vessels. For example, you may produce such Tier I or Tier II engines, but those engines may not be installed in vessels that are subject to Tier III standards. You may obtain preliminary approval of portions of the application under 40 CFR 1042.210.

* * * * *

■ 221. Revise § 1043.100 to read as follows:

§ 1043.100 Incorporation by reference.

(a) Certain material is incorporated by reference into this part with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the Environmental Protection Agency must publish a document in the **Federal Register** and the material must be available to the public. All approved material is available for inspection at EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue NW, Washington, DC 20004, *www.epa.gov/dockets*, (202) 202–1744, and is available from the sources listed in this section. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email *fedreg.legal@nara.gov*, or go to: *http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.*

(b) The International Maritime Organization, 4 Albert Embankment, London SE1 7SR, United Kingdom, or *www.imo.org*, or 44–(0)20–7735–7611.

(1) MARPOL Annex VI, Regulations for the Prevention of Air Pollution from Ships, Fourth Edition, 2017, and NO_X Technical Code 2008.

(i) Revised MARPOL Annex VI, Regulations for the Prevention of Pollution from Ships, Fourth Edition, 2017 (''2008 Annex VI''); IBR approved for §§ 1043.1 introductory text, 1043.20, 1043.30(f), 1043.60(c), and 1043.70(a).

(ii) NO_X Technical Code 2008, Technical Code on Control of Emission of Nitrogen Oxides from Marine Diesel Engines, 2017 Edition, (''NO_X Technical Code''); IBR approved for §§ 1043.20, 1043.41(b) and (h), and 1043.70(a).

(2) [Reserved]

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

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

Authority: 42 U.S.C. 7401–7671q.

■ 223. Amend § 1045.1 by revising paragraph (c) to read as follows:

§ 1045.1 Does this part apply for my products?

* * * * *

(c) Outboard and personal watercraft engines originally meeting the standards specified in appendix I of this part remain subject to those standards. Those engines remain subject to recall provisions as specified in 40 CFR part 1068, subpart F, throughout the useful life corresponding to the original certification. Also, tampering and defeat-device prohibitions continue to apply for those engines as specified in 40 CFR 1068.101.

* * * * *

■ 224. Amend § 1045.145 by removing and reserving paragraphs (a) through (g), (i) through (k), and (m) and revising paragraph (n) to read as follows:

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

* * * * *

(n) *Continued use of 40 CFR part 91 test data.* You may continue to use test data based on the test procedures that applied for engines built before the requirements of this part started to apply if we allow you to use carryover emission data under § 1045.235(d) for your engine family. You may also use

those test procedures for production-line testing with any engine family whose certification is based on testing with those procedures. For any EPA testing, we will rely on the procedures described in subpart F of this part, even if you used carryover data based on older test procedures as allowed under this paragraph (n).

* * * * *

■ 225. Amend § 1045.235 by revising paragraph (d)(3) to read as follows:

§ 1045.235 What emission testing must I perform for my application for a certificate of conformity?

* * * * *

(d) * * *

(3) The data show that the emission-data engine would meet all the requirements of this part that apply to the engine family covered by the application for certification.

* * * * *

■ 226. Revise § 1045.255 to read as follows:

§ 1045.255 What decisions may EPA make regarding a certificate of conformity?

(a) If we determine an application is complete and shows that the engine family meets all the requirements of this part and the Clean Air Act, we will issue a certificate of conformity for the engine family for that model year. We may make the approval subject to additional conditions.

(b) We may deny an application for certification if we determine that an engine family fails to comply with emission standards or other requirements of this part or the Clean Air Act. We will base our decision on all available information. If we deny an application, we will explain why in writing.

(c) In addition, we may deny your application or suspend or revoke a certificate of conformity if you do any of the following:

(1) Refuse to comply with any testing or reporting requirements in this part.

(2) Submit false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete.

(3) Cause any test data to become inaccurate.

(4) Deny us from completing authorized activities (see 40 CFR 1068.20). This includes a failure to provide reasonable assistance.

(5) Produce engines for importation into the United States at a location where local law prohibits us from carrying out authorized activities.

(6) Fail to supply requested information or amend an application to include all engines being produced.

(7) Take any action that otherwise circumvents the intent of the Clean Air Act or this part.

(d) We may void a certificate of conformity if you fail to keep records, send reports, or give us information as required under this part or the Clean Air Act. Note that these are also violations of 40 CFR 1068.101(a)(2).

(e) We may void a certificate of conformity if we find that you intentionally submitted false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete after submission.

(f) If we deny an application or suspend, revoke, or void a certificate, you may ask for a hearing (see § 1045.820).

■ 227. Amend § 1045.310 by revising paragraphs (a)(1) introductory text and (a)(1)(iv) to read as follows:

§ 1045.310 How must I select engines for production-line testing?

(a) * * *

(1) For engine families with projected U.S.-directed production volume of at least 1,600, the test periods are defined as follows:

* * * * *

(iv) If your annual production period is 301 days or longer, divide the annual production period evenly into four test periods. For example, if your annual production period is 392 days (56 weeks), divide the annual production period into four test periods of 98 days (14 weeks).

* * * * *

■ 228. Amend § 1045.501 by revising paragraph (c) to read as follows:

§ 1045.501 How do I run a valid emission test?

* * * * *

(c) Fuels. Use the fuels and lubricants specified in 40 CFR part 1065, subpart H, for all the testing we require in this part, except as specified in § 1045.515.

(1) Use gasoline meeting the specifications described in 40 CFR 1065.710(c) for general testing. For service accumulation, use the test fuel or any commercially available fuel that is representative of the fuel that in-use engines will use.

(2) You may alternatively use ethanol-blended fuel meeting the specifications described in 40 CFR 1065.710(b) for general testing without our advance approval. If you use the ethanol-blended fuel for certifying a given engine family, you may also use it for production-line testing or any other testing you perform for that engine family under this part. If you use the ethanol-blended fuel for certifying a given engine family, we may use the ethanol-blended fuel or the specified neat gasoline test fuel with that engine family.

* * * * *

■ 229. Revise appendix 1 to part 1045 to read as follows:

Appendix I to Part 1045—Summary of Previous Emission Standards

(a) The following standards, which EPA originally adopted under 40 CFR part 91, apply to outboard and personal watercraft engines produced from model year 2006 through 2009:

(1) For engines at or below 4.3 kW, the $HC+NO_X$ standard is 81.00 g/kW-hr.

(2) For engines above 4.3 kW, the following $HC+NO_X$ standard applies:

$HC+NO_X$ standard = (151 + 557/P0.9) · 0.250 + 6.00

Where:

STD = The $HC+NO_X$ emission standard, in g/kW-hr.

P = The average power of an engine family, in kW.

(b) Table 1 of this appendix describes the phase-in standards for outboard and personal watercraft engines for model years 1998 through 2005. For engines with maximum engine power above 4.3 kW, the standard is expressed by the following formula, in g/kW-hr, with constants for each year identified in Table 1 of this appendix:

$$HC + NOx\,\text{standard} = \left(151 + \frac{557}{P^{0.9}}\right) \cdot A + B$$

TABLE 1 OF APPENDIX I—$HC+NO_X$ PHASE-IN STANDARDS FOR OUTBOARD AND PERSONAL WATERCRAFT ENGINES

Model year	Maximum engine power <4.3 kW	Maximum engine power >4.3 kW	
		A	B
1998	278.00	0.917	2.44
1999	253.00	0.833	2.89
2000	228.00	0.750	3.33
2001	204.00	0.667	3.78
2002	179.00	0.583	4.22
2003	155.00	0.500	4.67
2004	130.00	0.417	5.11
2005	105.00	0.333	5.56

PART 1048—CONTROL OF EMISSIONS FROM NEW, LARGE NONROAD SPARK-IGNITION ENGINES

■ 230. The authority citation for part 1048 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

■ 231. Revise § 1048.145 to read as follows:

§ 1048.145 Are there interim provisions that apply only for a limited time?

The interim provisions in this section apply instead of other provisions in this part. This section describes when these interim provisions expire.

(a)–(f) [Reserved]

(g) *Small-volume provisions.* If you qualify for the hardship provisions in § 1068.250 of this chapter, we may approve extensions of up to four years total.

■ 232. Revise § 1048.255 to read as follows:

§ 1048.255 What decisions may EPA make regarding a certificate of conformity?

(a) If we determine an application is complete and shows that the engine family meets all the requirements of this part and the Act, we will issue a certificate of conformity for the engine family for that model year. We may make the approval subject to additional conditions.

(b) We may deny an application for certification if we determine that an engine family fails to comply with emission standards or other requirements of this part or the Clean Air Act. We will base our decision on all available information. If we deny an application, we will explain why in writing.

(c) In addition, we may deny your application or suspend or revoke a certificate of conformity if you do any of the following:

(1) Refuse to comply with any testing or reporting requirements in this part.

(2) Submit false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete.

(3) Cause any test data to become inaccurate.

(4) Deny us from completing authorized activities (see 40 CFR 1068.20). This includes a failure to provide reasonable assistance.

(5) Produce engines for importation into the United States at a location where local law prohibits us from carrying out authorized activities.

(6) Fail to supply requested information or amend an application to include all engines being produced.

(7) Take any action that otherwise circumvents the intent of the Act or this part.

(d) We may void a certificate of conformity if you fail to keep records, send reports, or give us information as required under this part or the Act. Note that these are also violations of 40 CFR 1068.101(a)(2).

(e) We may void a certificate of conformity if we find that you intentionally submitted false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete after submission.

(f) If we deny an application or suspend, revoke, or void a certificate, you may ask for a hearing (see § 1048.820).

■ 233. Amend § 1048.501 by revising paragraph (c) to read as follows:

§ 1048.501 How do I run a valid emission test?

* * * * *

(c) Use the fuels and lubricants specified in 40 CFR part 1065, subpart H, to perform valid tests for all the testing we require in this part, except as noted in § 1048.515.

(1) Use gasoline meeting the specifications described in 40 CFR 1065.710(c) for general testing. For service accumulation, use the test fuel or any commercially available fuel that is representative of the fuel that in-use engines will use.

(2) You may alternatively use ethanol-blended fuel meeting the specifications described in 40 CFR 1065.710(b) for general testing without our advance approval. If you use the ethanol-blended fuel for certifying a given engine family, you may also use it for production-line testing or any other testing you perform for that engine family under this part. If you use the ethanol-blended fuel for certifying a given engine family, we may use the ethanol-blended fuel or the specified neat gasoline test fuel with that engine family.

* * * * *

PART 1051—CONTROL OF EMISSIONS FROM RECREATIONAL ENGINES AND VEHICLES

■ 234. The authority citation for part 1051 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

§ 1051.145 [Removed and Reserved]

■ 235. Remove and reserve § 1051.145.

■ 236. Revise § 1051.255 to read as follows:

§ 1051.255 What decisions may EPA make regarding a certificate of conformity?

(a) If we determine an application is complete and shows that the engine family meets all the requirements of this part and the Act, we will issue a certificate of conformity for the engine family for that model year. We may make the approval subject to additional conditions.

(b) We may deny an application for certification if we determine that an engine family fails to comply with emission standards or other requirements of this part or the Clean Air Act. We will base our decision on all available information. If we deny an application, we will explain why in writing.

(c) In addition, we may deny your application or suspend or revoke a certificate of conformity if you do any of the following:

(1) Refuse to comply with any testing or reporting requirements in this part.

(2) Submit false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete.

(3) Cause any test data to become inaccurate.

(4) Deny us from completing authorized activities (see 40 CFR 1068.20). This includes a failure to provide reasonable assistance.

(5) Produce engines for importation into the United States at a location where local law prohibits us from carrying out authorized activities.

(6) Fail to supply requested information or amend an application to include all engines being produced.

(7) Take any action that otherwise circumvents the intent of the Act or this part.

(d) We may void a certificate of conformity if you fail to keep records, send reports, or give us information as required under this part or the Clean Air Act. Note that these are also violations of 40 CFR 1068.101(a)(2).

(e) We may void a certificate of conformity if we find that you intentionally submitted false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete after submission.

(f) If we deny an application or suspend, revoke, or void a certificate, you may ask for a hearing (see § 1051.820).

■ 237. Amend § 1051.310 by revising paragraphs (a)(1) introductory text and (a)(1)(iv) to read as follows:

§ 1051.310 How must I select vehicles or engines for production-line testing?

(a) * * *

(1) For engine families with projected U.S.-directed production volume of at least 1,600, the test periods are defined as follows:

* * * * *

(iv) If your annual production period is 301 days or longer, divide the annual production period evenly into four test periods. For example, if your annual production period is 392 days (56 weeks), divide the annual production period into four test periods of 98 days (14 weeks).

* * * * *

■ 238. Amend § 1051.501 by revising paragraph (d) to read as follows:

§ 1051.501 What procedures must I use to test my vehicles or engines?

* * * * *

(d) *Fuels.* Use the fuels meeting the following specifications:

(1) *Exhaust.* Use the fuels and lubricants specified in 40 CFR part 1065, subpart H, for all the exhaust testing we require in this part. For service accumulation, use the test fuel or any commercially available fuel that is representative of the fuel that in-use engines will use. The following provisions apply for using specific fuel types:

(i) For gasoline-fueled engines, use the grade of gasoline specified in 40 CFR 1065.710(c) for general testing. You may alternatively use ethanol-blended fuel meeting the specifications described in 40 CFR 1065.710(b) for general testing without our advance approval. If you use the ethanol-blended fuel for certifying a given engine family, you may also use it for production-line testing or any other testing you perform for that engine family under this part. If you use the ethanol-blended fuel for certifying a given engine family, we may use the ethanol-blended fuel or the specified neat gasoline test fuel with that engine family.

(ii) For diesel-fueled engines, use either low-sulfur diesel fuel or ultra low-sulfur diesel fuel meeting the specifications in 40 CFR 1065.703. If you use sulfur-sensitive technology as defined in 40 CFR 1039.801 and you measure emissions using ultra low-sulfur diesel fuel, you must add a permanent label near the fuel inlet with the following statement: ''ULTRA LOW SULFUR FUEL ONLY''.

(2) *Fuel tank permeation.* (i) For the preconditioning soak described in § 1051.515(a)(1) and fuel slosh durability test described in § 1051.515(d)(3), use the fuel specified in 40 CFR 1065.710(b), or the fuel specified in 40 CFR 1065.710(c) blended with 10 percent ethanol by volume. As an alternative, you may use Fuel CE10, which is Fuel C as specified in ASTM D 471–98 (see 40 CFR 1060.810) blended with 10 percent ethanol by volume.

(ii) For the permeation measurement test in § 1051.515(b), use the fuel specified in 40 CFR 1065.710(c). As an alternative, you may use any of the fuels specified in paragraph (d)(2)(i) of this section.

(3) *Fuel hose permeation.* Use the fuel specified in 40 CFR 1065.710(b), or the fuel specified in 40 CFR 1065.710(c) blended with 10 percent ethanol by volume for permeation testing of fuel lines. As an alternative, you may use Fuel CE10, which is Fuel C as specified in ASTM D 471–98 (see 40 CFR 1060.810) blended with 10 percent ethanol by volume.

* * * * *

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

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

Authority: 42 U.S.C. 7401–7671q.

■ 240. Amend § 1054.1 by revising paragraphs (a)(1) and (5), (c), and (d) to read as follows:

§ 1054.1 Does this part apply for my engines and equipment?

(a) * * *

(1) The requirements of this part related to exhaust emissions apply to new, nonroad spark-ignition engines with maximum engine power at or below 19 kW. This includes auxiliary marine spark-ignition engines.

* * * * *

(5) We specify provisions in §§ 1054.145(f) and 1054.740 that allow for meeting the requirements of this part before the dates shown in Table 1 to this section. Engines, fuel-system components, or equipment certified to the standards in §§ 1054.145(f) and 1054.740 are subject to all the requirements of this part as if these optional standards were mandatory.

* * * * *

(c) Engines originally meeting Phase 1 or Phase 2 standards as specified in appendix I of this part remain subject to those standards. Those engines remain subject to recall provisions as specified in 40 CFR part 1068, subpart F, throughout the useful life corresponding to the original certification. Also, tampering and defeat-device prohibitions continue to apply for those engines as specified in 40 CFR 1068.101.

(d) The regulations in this part optionally apply to engines with maximum engine power at or below 30 kW and with displacement at or below 1,000 cubic centimeters that would otherwise be covered by 40 CFR part 1048. See 40 CFR 1048.615 for provisions related to this allowance.

* * * * *

■ 241. Revise § 1054.2 to read as follows:

§ 1054.2 Who is responsible for compliance?

(a) The requirements and prohibitions of this part apply to manufacturers of engines and equipment, as described in § 1054.1. The requirements of this part are generally addressed to manufacturers subject to this part's requirements. The term ''you'' generally means the certifying manufacturer. For provisions related to exhaust emissions,

this generally means the engine manufacturer, especially for issues related to certification (including production-line testing, reporting, etc.). For provisions related to certification with respect to evaporative emissions, this generally means the equipment manufacturer. Note that for engines that become new after being placed into service (such as engines converted from highway or stationary use), the requirements that normally apply for manufacturers of freshly manufactured engines apply to the importer or any other entity we allow to obtain a certificate of conformity.

(b) Equipment manufacturers must meet applicable requirements as described in § 1054.20. Engine manufacturers that assemble an engine's complete fuel system are considered to be the equipment manufacturer with respect to evaporative emissions (see 40 CFR 1060.5). Note that certification requirements for component manufacturers are described in 40 CFR part 1060.

■ 242. Revise § 1054.30 to read as follows:

§ 1054.30 Submission of information.

Unless we specify otherwise, send all reports and requests for approval to the Designated Compliance Officer (see § 1054.801). See § 1054.825 for additional reporting and recordkeeping provisions.

■ 243. Amend § 1054.103 by revising paragraph (c) introductory text to read as follows:

§ 1054.103 What exhaust emission standards must my handheld engines meet?

* * * * *

(c) *Fuel types.* The exhaust emission standards in this section apply for engines using the fuel type on which the engines in the emission family are designed to operate. You must meet the numerical emission standards for hydrocarbon in this section based on the following types of hydrocarbon emissions for engines powered by the following fuels:

* * * * *

■ 244. Amend § 1054.105 by revising paragraph (c) introductory text to read as follows:

§ 1054.105 What exhaust emission standards must my nonhandheld engines meet?

* * * * *

(c) *Fuel types.* The exhaust emission standards in this section apply for engines using the fuel type on which the engines in the emission family are designed to operate. You must meet the numerical emission standards for hydrocarbon in this section based on the following types of hydrocarbon emissions for engines powered by the following fuels:

* * * * *

■ 245. Amend § 1054.110 by revising paragraph (b) to read as follows:

§ 1054.110 What evaporative emission standards must my handheld equipment meet?

* * * * *

(b) *Tank permeation.* Fuel tanks must meet the permeation requirements specified in 40 CFR 1060.103. The requirements in 40 CFR 1060.103 apply for handheld equipment starting in the 2010 model year, except that they apply starting in the 2011 model year for structurally integrated nylon fuel tanks, in the 2012 model year for handheld equipment using nonhandheld engines, and in the 2013 model year for all small-volume emission families. For nonhandheld equipment using engines at or below 80 cc, the requirements of this paragraph (b) apply starting in the 2012 model year. You may generate or use emission credits to show compliance with the requirements of this paragraph (b) under the averaging, banking, and trading program as described in subpart H of this part. FEL caps apply as specified in § 1054.112(b)(1) through (3) starting in the 2015 model year.

* * * * *

■ 246. Amend § 1054.120 by revising paragraph (c) to read as follows:

§ 1054.120 What emission-related warranty requirements apply to me?

* * * * *

(c) *Components covered.* The emission-related warranty covers all components whose failure would increase an engine's emissions of any regulated pollutant, including components listed in 40 CFR part 1068, appendix I, and components from any other system you develop to control emissions. The emission-related warranty covers these components even if another company produces the component. Your emission-related warranty does not need to cover components whose failure would not increase an engine's emissions of any regulated pollutant.

* * * * *

■ 247. Amend § 1054.125 by revising the introductory text and paragraphs (c) and (e) to read as follows:

§ 1054.125 What maintenance instructions must I give to buyers?

Give the ultimate purchaser of each new engine written instructions for properly maintaining and using the engine, including the emission control system as described in this section. The maintenance instructions also apply to service accumulation on your emission-data engines as described in § 1054.245 and in 40 CFR part 1065.

* * * * *

(c) *Special maintenance.* You may specify more frequent maintenance to address problems related to special situations, such as atypical engine operation. You must clearly state that this additional maintenance is associated with the special situation you are addressing. You may also address maintenance of low-use engines (such as recreational or stand-by engines) by specifying the maintenance interval in terms of calendar months or years in addition to your specifications in terms of engine operating hours. All special maintenance instructions must be consistent with good engineering judgment. We may disapprove your maintenance instructions if we determine that you have specified special maintenance steps to address engine operation that is not atypical, or that the maintenance is unlikely to occur in use. For example, this paragraph (c) does not allow you to design engines that require special maintenance for a certain type of expected operation. If we determine that certain maintenance items do not qualify as special maintenance under this paragraph (c), you may identify this as recommended additional maintenance under paragraph (b) of this section.

* * * * *

(e) *Maintenance that is not emission-related.* For maintenance unrelated to emission controls, you may schedule any amount of inspection or maintenance. You may also take these inspection or maintenance steps during service accumulation on your emission-data engines, as long as they are reasonable and technologically necessary. This might include adding engine oil, changing fuel or oil filters, servicing engine-cooling systems, and adjusting idle speed, governor, engine bolt torque, valve lash, or injector lash. You may not perform this nonemission-related maintenance on emission-data engines more often than the least frequent intervals that you recommend to the ultimate purchaser.

* * * * *

■ 248. Amend § 1054.130 by revising paragraphs (b)(2) and (5) to read as follows:

§ 1054.130 What installation instructions must I give to equipment manufacturers?

* * * * *

(b) * * *

(2) State: ''Failing to follow these instructions when installing a certified engine in a piece of equipment violates federal law (40 CFR 1068.105(b)), subject to fines or other penalties as described in the Clean Air Act.''

* * * * *

(5) Describe how your certification is limited for any type of application. For example, if you certify engines only for rated-speed applications, tell equipment manufacturers that the engine must not be installed in equipment involving intermediate-speed operation. Also, if your wintertime engines are not certified to the otherwise applicable $HC+NO_X$ standards in this subpart, tell equipment manufacturers that the engines must be installed in equipment that is used only in wintertime.

* * * * *

■ 249. Amend § 1054.135 by revising paragraphs (c)(2) and (e)(1) to read as follows:

§ 1054.135 How must I label and identify the engines I produce?

* * * * *

(c) * * *

(2) Include your full corporate name and trademark. You may identify another company and use its trademark instead of yours if you comply with the branding provisions of 40 CFR 1068.45.

* * * * *

(e) * * *

(1) You may identify other emission standards that the engine meets or does not meet (such as California standards), as long as this does not cause you to omit any of the information described in paragraph (c) of this section. You may include this information by adding it to the statement we specify or by including a separate statement.

* * * * *

■ 250. Revise § 1054.145 to read as follows:

§ 1054.145 Are there interim provisions that apply only for a limited time?

The interim provisions in this section apply instead of other provisions in this part. This section describes how and when these interim provisions apply.

(a)–(b) [Reserved]

(c) *Special provisions for handheld engines.* Handheld engines subject to Phase 3 emission standards must meet the standards at or above barometric pressures of 96.0 kPa in the standard configuration and are not required to meet emission standards at lower barometric pressures. This is intended to allow testing under most weather conditions at all altitudes up to 1,100 feet above sea level. In your application for certification, identify the altitude above which you rely on an altitude kit and describe your plan for making information and parts available such that you would reasonably expect that altitude kits would be widely used at all such altitudes.

(d) *Alignment of model years for exhaust and evaporative standards.* Evaporative emission standards generally apply based on the model year of the equipment, which is determined by the equipment's date of final assembly. However, in the first year of new emission standards, equipment manufacturers may apply evaporative emission standards based on the model year of the engine as shown on the engine's emission control information label. For example, for the fuel line permeation standards starting in 2012, equipment manufacturers may order a batch of 2011 model year engines for installation in 2012 model year equipment, subject to the anti-stockpiling provisions of 40 CFR 1068.105(a). The equipment with the 2011 model year engines would not need to meet fuel line permeation standards, as long as the equipment is fully assembled by December 31, 2012.

(e) [Reserved]

(f) *Early banking for evaporative emission standards—handheld equipment manufacturers.* You may earn emission credits for handheld equipment you produce before the evaporative emission standards of § 1054.110 apply. To do this, your equipment must use fuel tanks with a family emission limit below 1.5 g/m2/day (or 2.5 g/m2/day for testing at 40 °C). Calculate your credits as described in § 1054.706 based on the difference between the family emission limit and 1.5 g/m2/day (or 2.5 g/m2/day for testing at 40 °C).

(g) through (i) [Reserved]

(j) *Continued use of 40 CFR part 90 test data.* You may continue to use data based on the test procedures that apply for engines built before the requirements of this part start to apply if we allow you to use carryover emission data under § 1054.235(d) for your emission family. You may also use those test procedures for measuring exhaust emissions for production-line testing with any engine family whose certification is based on testing with those procedures. For any EPA testing, we will rely on the procedures described in subpart F of this part, even if you used carryover data based on older test procedures as allowed under this paragraph (j).

(k)–(m) [Reserved]

(n) *California test fuel.* You may perform testing with a fuel meeting the requirements for certifying the engine in California instead of the fuel specified in § 1054.501(b)(2), as follows:

(1) You may certify individual engine families using data from testing conducted with California Phase 2 test fuel through model year 2019. Any EPA testing with such an engine family may use either California Phase 2 test fuel or the test fuel specified in § 1054.501.

(2) Starting in model year 2013, you may certify individual engine families using data from testing conducted with California Phase 3 test fuel. Any EPA testing with such an engine family may use either California Phase 3 test fuel or the test fuel specified in § 1054.501, unless you certify to the more stringent CO standards specified in this paragraph (n)(2). If you meet these alternate CO standards, we will also use California Phase 3 test fuel for any testing we perform with engines from that engine family. The following alternate CO standards apply instead of the CO standards specified in § 1054.103 or § 1054.105:

TABLE 1 TO § 1054.145—ALTERNATE CO STANDARDS FOR TESTING WITH CALIFORNIA PHASE 3 TEST FUEL

[g/kW-hr]

Engine type	Alternate CO standard
Class I	549
Class II	549
Class III	536
Class IV	536
Class V	536
Marine generators	4.5

■ 251. Amend § 1054.205 by revising paragraphs (o)(1), (p)(1), (v), and (x) to read as follows:

§ 1054.205 What must I include in my application?

* * * * *

(o) * * *

(1) Present emission data for hydrocarbon (such as THC, THCE, or NMHC, as applicable), NO_X, and CO on an emission-data engine to show your engines meet the applicable exhaust emission standards as specified in § 1054.101. Show emission figures before and after applying deterioration factors for each engine. Include test data from each applicable duty cycle specified in § 1054.505(b). If we specify more than one grade of any fuel type (for example, low-temperature and all-season gasoline), you need to submit test data only for one grade, unless the

regulations of this part specify otherwise for your engine.

* * * * *

(p) * * *

(1) Report all valid test results involving measurement of pollutants for which emission standards apply. Also indicate whether there are test results from invalid tests or from any other tests of the emission-data engine, whether or not they were conducted according to the test procedures of subpart F of this part. We may require you to report these additional test results. We may ask you to send other information to confirm that your tests were valid under the requirements of this part and 40 CFR parts 1060 and 1065.

* * * * *

(v) Provide the following information about your plans for producing and selling engines:

(1) Identify the estimated initial and final dates for producing engines from the engine family for the model year.

(2) Identify the estimated date for initially introducing certified engines into U.S. commerce under this certificate.

(3) Include good-faith estimates of U.S.-directed production volumes. Include a justification for the estimated production volumes if they are substantially different than actual production volumes in earlier years for similar models. Also indicate whether you expect the engine family to contain only nonroad engines, only stationary engines, or both.

* * * * *

(x) Include the information required by other subparts of this part. For example, include the information required by § 1054.725 if you participate in the ABT program and include the information required by § 1054.690 if you need to post a bond under that section.

* * * * *

■ 252. Amend § 1054.220 by revising the section heading to read as follows:

§ 1054.220 How do I amend my maintenance instructions?

* * * * *

■ 253. Amend § 1054.225 by:

■ a. Revising the section heading and paragraphs (b) and (f) introductory text; and

■ b. Adding paragraph (g).

The revisions and addition read as follows:

§ 1054.225 How do I amend my application for certification?

* * * * *

(b) To amend your application for certification, send the following relevant information to the Designated Compliance Officer.

(1) Describe in detail the addition or change in the model or configuration you intend to make.

(2) Include engineering evaluations or data showing that the amended emission family complies with all applicable requirements in this part. You may do this by showing that the original emission-data engine or emission-data equipment is still appropriate for showing that the amended family complies with all applicable requirements in this part.

(3) If the original emission-data engine for the engine family is not appropriate to show compliance for the new or modified engine configuration, include new test data showing that the new or modified engine configuration meets the requirements of this part.

(4) Include any other information needed to make your application correct and complete.

* * * * *

(f) You may ask us to approve a change to your FEL with respect to exhaust emissions in certain cases after the start of production. The changed FEL may not apply to engines you have already introduced into U.S. commerce, except as described in this paragraph (f). If we approve a changed FEL after the start of production, you must identify the month and year for applying the new FEL. You may ask us to approve a change to your FEL in the following cases:

* * * * *

(g) You may produce engines as described in your amended application for certification and consider those engines to be in a certified configuration if we approve a new or modified engine configuration during the model year under paragraph (d) of this section. Similarly, you may modify in-use engines as described in your amended application for certification and consider those engines to be in a certified configuration if we approve a new or modified engine configuration at any time under paragraph (d) of this section. Modifying a new or in-use engine to be in a certified configuration does not violate the tampering prohibition of 40 CFR 1068.101(b)(1), as long as this does not involve changing to a certified configuration with a higher family emission limit.

■ 254. Amend § 1054.235 by revising the section heading and paragraphs (a), (b), (c), and (d) to read as follows:

§ 1054.235 What testing requirements apply for certification?

* * * * *

(a) Select an emission-data engine from each engine family for testing as described in 40 CFR 1065.401. Select a configuration and set adjustable parameters in a way that is most likely to exceed the $HC+NO_X$ standard in subpart B of this part, using good engineering judgment. Configurations must be tested as they will be produced, including installed governors, if applicable.

(b) Test your emission-data engines using the procedures and equipment specified in subpart F of this part. In the case of dual-fuel engines, measure emissions when operating with each type of fuel for which you intend to certify the engine. In the case of flexible-fuel engines, measure emissions when operating with the fuel mixture that is most likely to cause the engine to exceed the applicable $HC+NO_X$ emission standard, though you may ask us to instead perform tests with both fuels separately if you can show that intermediate mixtures are not likely to occur in use.

(c) We may perform confirmatory testing by measuring emissions from any of your emission-data engines or other engines from the emission family, as follows:

(1) We may decide to do the testing at your plant or any other facility. If we do this, you must deliver the engine to a test facility we designate. The engine you provide must include appropriate manifolds, aftertreatment devices, electronic control units, and other emission-related components not normally attached directly to the engine block. If we do the testing at your plant, you must schedule it as soon as possible and make available the instruments, personnel, and equipment we need.

(2) If we measure emissions on one of your engines, the results of that testing become the official emission results for the engine.

(3) We may set the adjustable parameters of your engine to any point within the physically adjustable ranges (see § 1054.115(b)).

(4) Before we test one of your engines, we may calibrate it within normal production tolerances for anything we do not consider an adjustable parameter. For example, we may calibrate it within normal production tolerances for a parameter that is subject to production variability because it is adjustable during production, but is not considered an adjustable parameter (as defined in § 1054.801) because it is permanently sealed.

(d) You may ask to use carryover emission data from a previous model year instead of doing new tests, but only if all the following are true:

(1) The emission family from the previous model year differs from the current emission family only with respect to model year, items identified in § 1054.225(a), or other characteristics unrelated to emissions. We may waive this paragraph (d)(1) for differences we determine not to be relevant.

(2) The emission-data engine from the previous model year remains the appropriate emission-data engine under paragraph (b) of this section.

(3) The data show that the emission-data engine would meet all the requirements of this part that apply to the emission family covered by the application for certification.

* * * * *

■ 255. Amend § 1054.240 by revising paragraphs (a), (b), (c), and (d) to read as follows:

§ 1054.240 How do I demonstrate that my emission family complies with exhaust emission standards?

(a) For purposes of certification, your emission family is considered in compliance with the emission standards in § 1054.101(a) if all emission-data engines representing that family have test results showing official emission results and deteriorated emission levels at or below these standards. This paragraph (a) also applies for all test points for emission-data engines within the family used to establish deterioration factors. Note that your FELs are considered to be the applicable emission standards with which you must comply if you participate in the ABT program in subpart H of this part.

(b) Your engine family is deemed not to comply if any emission-data engine representing that family has test results showing an official emission result or a deteriorated emission level for any pollutant that is above an applicable emission standard in subpart B of this part. This paragraph (b) also applies for all test points for emission-data engines within the family used to establish deterioration factors.

(c) Determine a deterioration factor to compare emission levels from the emission-data engine with the applicable emission standards in subpart B of this part. Section 1054.245 specifies how to test engines to develop deterioration factors that represent the expected deterioration in emissions over your engines' full useful life. Calculate a multiplicative deterioration factor as described in § 1054.245(b). If the deterioration factor is less than one, use one. Specify the deterioration factor to one more significant figure than the emission standard. In the case of dual-fuel and flexible-fuel engines, apply deterioration factors separately for each fuel type. You may use assigned deterioration factors that we establish for up to 10,000 nonhandheld engines from small-volume emission families in each model year, except that small-volume engine manufacturers may use assigned deterioration factors for any or all of their engine families.

(d) Determine the official emission result for each pollutant to at least one more decimal place than the applicable standard in subpart B of this part. Apply the deterioration factor to the official emission result, as described in § 1054.245(b), then round the adjusted figure to the same number of decimal places as the emission standard. Compare the rounded emission levels to the emission standard for each emission-data engine. In the case of $HC+NO_X$ standards, add the official emission results and apply the deterioration factor to the sum of the pollutants before rounding. However, if your deterioration factors are based on emission measurements that do not cover the engine's full useful life, apply deterioration factors to each pollutant and then add the results before rounding.

* * * * *

■ 256. Amend § 1054.245 by:

■ a. Revising paragraphs (a), (b)(1), (2), (3), and (5), and (c); and

■ b. Adding paragraph (d).

The revisions and addition read as follows:

§ 1054.245 How do I determine deterioration factors from exhaust durability testing?

* * * * *

(a) You may ask us to approve deterioration factors for an emission family based on emission measurements from similar engines if you have already given us these data for certifying other engines in the same or earlier model years. Use good engineering judgment to decide whether the two engines are similar. We will approve your request if you show us that the emission measurements from other engines reasonably represent in-use deterioration for the engine family for which you have not yet determined deterioration factors.

(b) * * *

(1) Measure emissions from the emission-data engine at a low-hour test point, at the midpoint of the useful life, and at the end of the useful life, except as specifically allowed by this paragraph (b). You may test at additional evenly spaced intermediate points. Collect emission data using measurements to at least one more decimal place than the emission standard in subpart B of this part.

(2) Operate the engine over a duty cycle that is representative of in-use operation for a period at least as long as the useful life (in hours). You may operate the engine continuously. You may also use an engine installed in nonroad equipment to accumulate service hours instead of running the engine only in the laboratory.

(3) In the case of dual-fuel or flexible-fuel engines, you may accumulate service hours on a single emission-data engine using the type or mixture of fuel expected to have the highest combustion and exhaust temperatures; you may ask us to approve a different fuel mixture for flexible-fuel engines if you demonstrate that a different criterion is more appropriate. For dual-fuel engines, you must measure emissions on each fuel type at each test point, either with separate engines dedicated to a given fuel, or with different configurations of a single engine.

* * * * *

(5) Calculate your deterioration factor using a linear least-squares fit of your test data but treat the low-hour test point as occurring at hour zero. Your deterioration factor is the ratio of the calculated emission level at the point representing the full useful life to the calculated emission level at zero hours, expressed to one more significant figure than the emission standard in subpart B of this part.

* * * * *

(c) If you qualify for using assigned deterioration factors under § 1054.240, determine the deterioration factors as follows:

(1) For two-stroke engines without aftertreatment, use a deterioration factor of 1.1 for HC, NO_X, and CO. For four-stroke engines without aftertreatment, use deterioration factors of 1.4 for HC, 1.0 for NO_X, and 1.1 for CO for Class 2 engines, and use 1.5 for HC and NO_X, and 1.1 for CO for all other engines.

(2) For Class 2 engines with aftertreatment, use a deterioration factor of 1.0 for NO_X. For all other cases involving engines with aftertreatment, calculate separate deterioration factors for HC, NO_X, and CO using the following equation:

$$DF = \frac{NE \cdot EDF - CC \cdot F}{NE - CC}$$

Where:

NE = engine-out emission levels (pre-catalyst) from the low-hour test result for a given pollutant, in g/kW-hr.

EDF = the deterioration factor specified in paragraph (c)(1) of this section for the type of engine for a given pollutant.

CC = the catalyst conversion from the low-hour test, in g/kW-hr. This is the

difference between the official emission result and NE.

F = 1.0 for NO_X and 0.8 for HC and CO.

(3) Combine separate deterioration factors for HC and NO_X from paragraph (c)(2) of this section into a combined deterioration factor for HC+NO_X using the following equation:

$$DF_{HC+NOx} = \frac{(NE_{HC} - CC_{HC}) \cdot DF_{HC} + (NE_{NOx} - CC_{NOx}) \cdot DF_{NOx}}{(NE_{HC} - CC_{HC}) + (NE_{NOx} - CC_{NOx})}$$

(d) Include the following information in your application for certification:

(1) If you determine your deterioration factors based on test data from a different emission family, explain why this is appropriate and include all the emission measurements on which you base the deterioration factor.

(2) If you do testing to determine deterioration factors, describe the form and extent of service accumulation, including the method you use to accumulate hours.

(3) If you calculate deterioration factors under paragraph (c) of this section, identify the parameters and variables you used for the calculation.

■ 257. Amend § 1054.250 by:

■ a. Removing and reserving paragraph (a)(3); and

■ b. Revising paragraphs (b)(3)(iv) and (c).

The revisions read as follows:

§ 1054.250 What records must I keep and what reports must I send to EPA?

* * * * *

(b) * * *

(3) * * *

(iv) All your emission tests (valid and invalid), including the date and purpose of each test and documentation of test parameters as specified in part 40 CFR part 1065.

* * * * *

(c) Keep required data from emission tests and all other information specified in this section for eight years after we issue your certificate. If you use the same emission data or other information for a later model year, the eight-year period restarts with each year that you continue to rely on the information.

* * * * *

■ 258. Revise § 1054.255 to read as follows:

§ 1054.255 What decisions may EPA make regarding a certificate of conformity?

(a) If we determine an application is complete and shows that the emission family meets all the requirements of this part and the Clean Air Act, we will issue a certificate of conformity for the emission family for that model year. We may make the approval subject to additional conditions.

(b) We may deny an application for certification if we determine that an emission family fails to comply with emission standards or other requirements of this part or the Clean Air Act. We will base our decision on all available information. If we deny an application, we will explain why in writing.

(c) In addition, we may deny your application or suspend or revoke a certificate of conformity if you do any of the following:

(1) Refuse to comply with any testing, reporting, or bonding requirements in this part.

(2) Submit false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete.

(3) Cause any test data to become inaccurate.

(4) Deny us from completing authorized activities (see 40 CFR 1068.20). This includes a failure to provide reasonable assistance.

(5) Produce engines or equipment for importation into the United States at a location where local law prohibits us from carrying out authorized activities.

(6) Fail to supply requested information or amend an application to include all engines or equipment being produced.

(7) Take any action that otherwise circumvents the intent of the Clean Air Act or this part.

(d) We may void a certificate of conformity if you fail to keep records, send reports, or give us information as required under this part or the Clean Air Act. Note that these are also violations of 40 CFR 1068.101(a)(2).

(e) We may void a certificate of conformity if we find that you intentionally submitted false or incomplete information. This includes doing anything after submitting your application that causes the submitted information to be false or incomplete.

(f) If we deny an application or suspend, revoke, or void a certificate of conformity, you may ask for a hearing (see § 1054.820).

■ 259. Amend § 1054.301 by revising paragraph (a)(2) to read as follows:

§ 1054.301 When must I test my production-line engines?

(a) * * *

(2) We may exempt small-volume emission families from routine testing under this subpart. Submit your request for approval as described in § 1054.210. In your request, describe your basis for projecting a production volume below 5,000 units. We will approve your request if we agree that you have made good-faith estimates of your production volumes. You must promptly notify us if your actual production exceeds 5,000 units during the model year. If you exceed the production limit or if there is evidence of a nonconformity, we may require you to test production-line engines under this subpart, or under 40 CFR part 1068, subpart E, even if we have approved an exemption under this paragraph (a)(2).

* * * * *

■ 260. Amend § 1054.310 by revising paragraphs (a)(1) introductory text, (a)(1)(iv), and (c)(2) introductory text to read as follows:

§ 1054.310 How must I select engines for production-line testing?

(a) * * *

(1) For engine families with projected U.S.-directed production volume of at least 1,600, the test periods are defined as follows:

* * * * *

(iv) If your annual production period is 301 days or longer, divide the annual production period evenly into four test periods. For example, if your annual production period is 392 days (56 weeks), divide the annual production period into four test periods of 98 days (14 weeks).

* * * * *

(c) * * *

(2) Calculate the standard deviation, σ, for the test sample using the following formula:

* * * * *

■ 261. Amend § 1054.315 by revising paragraph (a)(1) to read as follows:

§ 1054.315 How do I know when my engine family fails the production-line testing requirements?

* * * * *

(a) * * *

(1) *Initial and final test results.* Calculate and round the test results for each engine. If you do multiple tests on an engine in a given configuration

(without modifying the engine), calculate the initial results for each test, then add all the test results together and divide by the number of tests. Round this final calculated value for the final test results on that engine.

* * * * *

■ 262. Amend § 1054.320 by adding paragraph (c) to read as follows:

§ 1054.320 What happens if one of my production-line engines fails to meet emission standards?

* * * * *

(c) Use test data from a failing engine for the compliance demonstration under § 1054.315 as follows:

(1) Use the original, failing test results as described in § 1054.315, whether or not you modify the engine or destroy it.

(2) Do not use test results from a modified engine as final test results under § 1054.315, unless you change your production process for all engines to match the adjustments you made to the failing engine. If this occurs, count the modified engine as the next engine in the sequence, rather than averaging the results with the testing that occurred before modifying the engine.

■ 263. Amend § 1054.501 by revising paragraphs (b)(1) and (2) and (b)(4) introductory text to read as follows:

§ 1054.501 How do I run a valid emission test?

* * * * *

(b) * * *

(1) Measure the emissions of all exhaust constituents subject to emission standards as specified in § 1054.505 and 40 CFR part 1065. Measure CO_2, N_2O, and CH_4 as described in § 1054.235. See § 1054.650 for special provisions that apply for variable-speed engines (including engines shipped without governors).

(2) Use the appropriate fuels and lubricants specified in 40 CFR part 1065, subpart H, for all the testing we require in this part. Gasoline test fuel must meet the specifications in 40 CFR 1065.710(c), except as specified in § 1054.145(n) and 40 CFR 1065.10 and 1065.701. Use gasoline specified for general testing except as specified in paragraph (d) of this section. For service accumulation, use the test fuel or any commercially available fuel that is representative of the fuel that in-use engines will use. Note that § 1054.145(n) allows for testing with gasoline test fuels specified by the California Air Resources Board for any individual engine family.

* * * * *

(4) The provisions of 40 CFR 1065.405 describe how to prepare an engine for testing. However, you may consider emission levels stable without measurement after 12 hours of engine operation, except for the following special provisions that apply for engine families with a useful life of 300 hours or less:

* * * * *

■ 264. Amend § 1054.505 by revising paragraph (b)(2) to read as follows:

§ 1054.505 How do I test engines?

* * * * *

(b) * * *

(2) For nonhandheld engines, use the six-mode duty cycle or the corresponding ramped-modal cycle described in paragraph (b) of appendix II of this part. Control engine speeds and torques during idle mode as specified in paragraph (c) of this section. Control engine speed during the full-load operating mode as specified in paragraph (d) of this section. For all other modes, control engine speed to within 5 percent of the nominal speed specified in paragraph (d) of this section or let the installed governor (in the production configuration) control engine speed. For all modes except idle, control torque as needed to meet the cycle-validation criteria in paragraph (a)(1) of this section. The governor may be adjusted before emission sampling to target the nominal speed identified in paragraph (d) of this section, but the installed governor must control engine speed throughout the emission-sampling period whether the governor is adjusted or not. Note that ramped-modal testing involves continuous sampling, so governor adjustments may not occur during such a test. Note also that our testing may involve running the engine with the governor in the standard configuration even if you adjust the governor as described in this paragraph (b)(2) for certification or production-line testing.

* * * * *

■ 265. Amend § 1054.601 by adding paragraph (d) to read as follows:

§ 1054.601 What compliance provisions apply?

* * * * *

(d) Subpart C of this part describes how to test and certify dual-fuel and flexible-fuel engines. Some multi-fuel engines may not fit the definitions in this part of either dual-fuel or flexible-fuel. For such engines, we will determine whether it is most appropriate to treat them as single-fuel engines, dual-fuel engines, or flexible-fuel engines based on the range of possible and expected fuel mixtures.

■ 266. Amend § 1054.612 by revising the introductory text to read as follows:

§ 1054.612 What special provisions apply for equipment manufacturers modifying certified nonhandheld engines?

The provisions of this section are limited to small-volume emission families.

* * * * *

■ 267. Amend § 1054.620 by revising paragraph (c)(2) to read as follows:

§ 1054.620 What are the provisions for exempting engines used solely for competition?

* * * * *

(c) * * *

(2) Sale of the equipment in which the engine is installed must be limited to professional competition teams, professional competitors, or other qualified competitors. Engine manufacturers may sell loose engines to these same qualified competitors, and to equipment manufacturers supplying competition models for qualified competitors.

* * * * *

§§ 1054.625 and 1054.626 [Removed]

■ 268. Remove §§ 1054.625 and 1054.626.

§ 1054.635 [Amended]

■ 269. Amend § 1054.635 by removing and reserving paragraph (c)(6).

§ 1054.640 [Removed]

■ 270. Remove § 1054.640.

■ 271. Revise § 1054.655 to read as follows:

§ 1054.655 What special provisions apply for installing and removing altitude kits?

An action for the purpose of installing or modifying altitude kits and performing other changes to compensate for changing altitude is not considered a prohibited act under 40 CFR 1068.101(b) if it is done consistent with the manufacturer's instructions.

■ 272. Amend § 1054.690 by revising paragraphs (f) and (i) to read as follows:

§ 1054.690 What bond requirements apply for certified engines?

* * * * *

(f) If you are required to post a bond under this section, you must get the bond from a third-party surety that is cited in the U.S. Department of Treasury Circular 570, ''Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies'' (*https://www.fiscal.treasury.gov/surety-bonds/circular-570.html*). You must maintain this bond for every year in which you sell certified engines. The surety agent remains responsible for obligations under the bond for two years

after the bond is cancelled or expires without being replaced.

* * * * *

(i) If you are required to post a bond under this section, you must note that in your application for certification as described in § 1054.205. Your certification is conditioned on your compliance with this section. Your certificate is automatically suspended if you fail to comply with the requirements of this section. This suspension applies with respect to all engines in your possession as well as all engines being imported or otherwise introduced into U.S. commerce. For example, if you maintain a bond sufficient to cover 500 engines, you may introduce into U.S. commerce only 500 engines under your certificate; your certificate would be automatically suspended for any additional engines. Introducing such additional engines into U.S. commerce would violate 40 CFR 1068.101(a)(1). For importation, U.S. Customs may deny entry of engines lacking the necessary bond, whether there is no bond or the value of the bond is not sufficient for the appropriate production volumes. We may also revoke your certificate.

* * * * *

■ 273. Amend § 1054.701 by revising paragraphs (c)(2), (i) introductory text, and (i)(1) to read as follows:

§ 1054.701 General provisions.

* * * * *

(c) * * *

(2) Handheld engines and nonhandheld engines are in separate averaging sets with respect to exhaust emissions except as specified in § 1054.740(e). You may use emission credits generated with Phase 2 engines for Phase 3 handheld engines only if you can demonstrate that those credits were generated by handheld engines, except as specified in § 1054.740(e). Similarly, you may use emission credits generated with Phase 2 engines for Phase 3 nonhandheld engines only if you can demonstrate that those credits were generated by nonhandheld engines, subject to the provisions of § 1054.740.

* * * * *

(i) As described in § 1054.730, compliance with the requirements of this subpart is determined at the end of the model year based on actual U.S.-directed production volumes. Do not include any of the following engines or equipment to calculate emission credits:

(1) Engines or equipment with a permanent exemption under subpart G of this part or under 40 CFR part 1068.

* * * * *

■ 274. Amend § 1054.710 by revising paragraph (c) to read as follows:

§ 1054.710 How do I average emission credits?

* * * * *

(c) If you certify a family to an FEL that exceeds the otherwise applicable standard, you must obtain enough emission credits to offset the family's deficit by the due date for the final report required in § 1054.730. The emission credits used to address the deficit may come from your other families that generate emission credits in the same model year, from emission credits you have banked from previous model years, or from emission credits generated in the same or previous model years that you obtained through trading.

■ 275. Amend § 1054.715 by revising paragraph (b) to read as follows:

§ 1054.715 How do I bank emission credits?

* * * * *

(b) You may designate any emission credits you plan to bank in the reports you submit under § 1054.730 as reserved credits. During the model year and before the due date for the final report, you may designate your reserved emission credits for averaging or trading.

* * * * *

■ 276. Amend § 1054.725 by revising paragraph (b)(2) to read as follows:

§ 1054.725 What must I include in my application for certification?

* * * * *

(b) * * *

(2) Detailed calculations of projected emission credits (positive or negative) based on projected production volumes. We may require you to include similar calculations from your other engine families to demonstrate that you will be able to avoid negative credit balances for the model year. If you project negative emission credits for a family, state the source of positive emission credits you expect to use to offset the negative emission credits.

■ 277. Amend § 1054.730 by revising paragraphs (b)(1), (3), and (4), (d)(1)(iii), and (d)(2)(iii) to read as follows:

§ 1054.730 What ABT reports must I send to EPA?

* * * * *

(b) * * *

(1) Family designation and averaging set.

* * * * *

(3) The FEL for each pollutant. If you change the FEL after the start of production, identify the date that you started using the new FEL and/or give the engine identification number for the first engine covered by the new FEL. In this case, identify each applicable FEL and calculate the positive or negative emission credits as specified in § 1054.225.

(4) The projected and actual U.S.-directed production volumes for the model year as described in § 1054.701(i). For fuel tanks, state the production volume in terms of surface area and production volume for each fuel tank configuration and state the total surface area for the emission family. If you changed an FEL during the model year, identify the actual U.S.-directed production volume associated with each FEL.

* * * * *

(d) * * *

(1) * * *

(iii) The averaging set corresponding to the families that generated emission credits for the trade, including the number of emission credits from each averaging set.

(2) * * *

(iii) How you intend to use the emission credits, including the number of emission credits you intend to apply for each averaging set.

* * * * *

■ 278. Amend § 1054.735 by revising paragraphs (a) and (b) to read as follows:

§ 1054.735 What records must I keep?

(a) You must organize and maintain your records as described in this section.

(b) Keep the records required by this section for at least eight years after the due date for the end-of-year report. You may not use emission credits for any engines or equipment if you do not keep all the records required under this section. You must therefore keep these records to continue to bank valid credits.

* * * * *

■ 279. Amend § 1054.740 by revising paragraph (c) and removing and reserving paragraph (d) to read as follows:

§ 1054.740 What special provisions apply for generating and using emission credits?

* * * * *

(c) You may not use emission credits generated by nonhandheld engines certified to Phase 2 emission standards to demonstrate compliance with the Phase 3 exhaust emission standards in 2014 and later model years.

* * * * *

■ 280. Amend § 1054.801 by:

■ a. Revising the definition for ''Designated Compliance Officer''.

■ b. Removing the definition for ''Dual-fuel engine''.

■ c. Adding a definition for ''Dual-fuel'' in alphabetical order.
■ d. Revising the definitions for ''Engine configuration'' and ''Equipment manufacturer''.
■ e. Removing the definition for ''Flexible-fuel engine''.
■ f. Adding a definition for ''Flexible-fuel'' in alphabetical order.
■ g. Revising the definitions for ''Fuel type'', ''Handheld'', ''New nonroad engine'', ''New nonroad equipment'', ''Nonmethane hydrocarbon'', ''Nonroad engine'', ''Phase 1'', ''Phase 2'', and ''Placed into service''.
■ h. Removing the definition for ''Pressurized oil system''.
■ i. Revising the definitions for ''Small-volume emission family'', ''Small-volume equipment manufacturer'', ''Total hydrocarbon'', and ''Total hydrocarbon equivalent''.

The revisions and additions read as follows:

§ 1054.801 What definitions apply to this part?

* * * * *

Designated Compliance Officer means the Director, Gasoline Engine Compliance Center, U.S. Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor, MI 48105; *complianceinfo@epa.gov.*

* * * * *

Dual-fuel means relating to an engine designed for operation on two different fuels but not on a continuous mixture of those fuels (see § 1054.601(d)). For purposes of this part, such an engine remains a dual-fuel engine even if it is designed for operation on three or more different fuels.

* * * * *

Engine configuration means a unique combination of engine hardware and calibration within an emission family. Engines within a single engine configuration differ only with respect to normal production variability or factors unrelated to emissions.

* * * * *

Equipment manufacturer means a manufacturer of nonroad equipment. All nonroad equipment manufacturing entities under the control of the same person are considered to be a single nonroad equipment manufacturer.

* * * * *

Flexible-fuel means relating to an engine designed for operation on any mixture of two or more different fuels (see § 1054.601(d)).

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Fuel type means a general category of fuels such as gasoline or natural gas. There can be multiple grades within a single fuel type, such as premium gasoline, regular gasoline, or low-level ethanol-gasoline blends.

* * * * *

Handheld means relating to equipment that meets any of the following criteria:

(1) It is carried by the operator throughout the performance of its intended function.

(2) It is designed to operate multi-positionally, such as upside down or sideways, to complete its intended function.

(3) It has a combined engine and equipment dry weight under 16.0 kilograms, has no more than two wheels, and at least one of the following attributes is also present:

(i) The operator provides support or carries the equipment throughout the performance of its intended function. Carry means to completely bear the weight of the equipment, including the engine. Support means to hold a piece of equipment in position to prevent it from falling, slipping, or sinking, without carrying it.

(ii) The operator provides support or attitudinal control for the equipment throughout the performance of its intended function. Attitudinal control involves regulating the horizontal or vertical position of the equipment.

(4) It is an auger with a combined engine and equipment dry weight under 22.0 kilograms.

(5) It is used in a recreational application with a combined total vehicle dry weight under 20.0 kilograms.

(6) It is a hand-supported jackhammer or rammer/compactor. This does not include equipment that can remain upright without operator support, such as a plate compactor.

* * * * *

New nonroad engine means any of the following things:

(1) A freshly manufactured nonroad engine for which the ultimate purchaser has never received the equitable or legal title. This kind of engine might commonly be thought of as ''brand new.'' In the case of this paragraph (1), the engine is new from the time it is produced until the ultimate purchaser receives the title or the product is placed into service, whichever comes first.

(2) An engine originally manufactured as a motor vehicle engine or a stationary engine that is later used or intended to be used in a piece of nonroad equipment. In this case, the engine is no longer a motor vehicle or stationary engine and becomes a ''new nonroad engine.'' The engine is no longer new when it is placed into nonroad service. This paragraph (2) applies if a motor vehicle engine or a stationary engine is installed in nonroad equipment, or if a motor vehicle or a piece of stationary equipment is modified (or moved) to become nonroad equipment.

(3) A nonroad engine that has been previously placed into service in an application we exclude under § 1054.5, when that engine is installed in a piece of equipment that is covered by this part. The engine is no longer new when it is placed into nonroad service covered by this part. For example, this paragraph (3) would apply to a marine-propulsion engine that is no longer used in a marine vessel but is instead installed in a piece of nonroad equipment subject to the provisions of this part.

(4) An engine not covered by paragraphs (1) through (3) of this definition that is intended to be installed in new nonroad equipment. This generally includes installation of used engines in new equipment. The engine is no longer new when the ultimate purchaser receives a title for the equipment or the product is placed into service, whichever comes first.

(5) An imported nonroad engine, subject to the following provisions:

(i) An imported nonroad engine covered by a certificate of conformity issued under this part that meets the criteria of one or more of paragraphs (1) through (4) of this definition, where the original engine manufacturer holds the certificate, is new as defined by paragraphs (1) through (4).

(ii) An imported engine that will be covered by a certificate of conformity issued under this part, where someone other than the original engine manufacturer holds the certificate (such as when the engine is modified after its initial assembly), is a new nonroad engine when it is imported. It is no longer new when the ultimate purchaser receives a title for the engine or it is placed into service, whichever comes first.

(iii) An imported nonroad engine that is not covered by a certificate of conformity issued under this part at the time of importation is new. This paragraph (5)(iii) addresses uncertified engines and equipment initially placed into service that someone seeks to import into the United States. Importation of this kind of engine (or equipment containing such an engine) is generally prohibited by 40 CFR part 1068. However, the importation of such an engine is not prohibited if the engine has a date of manufacture before January 1, 1997, since it is not subject to standards.

New nonroad equipment means either of the following things:

(1) A nonroad piece of equipment for which the ultimate purchaser has never received the equitable or legal title. The product is no longer new when the ultimate purchaser receives this title or the product is placed into service, whichever comes first.

(2) A nonroad piece of equipment with an engine that becomes new while installed in the equipment. For example, a complete piece of equipment that was imported without being covered by a certificate of conformity would be new nonroad equipment because the engine would be considered new at the time of importation.

* * * * *

Nonmethane hydrocarbon has the meaning given in 40 CFR 1065.1001. This generally means the difference between the emitted mass of total hydrocarbon and the emitted mass of methane.

* * * * *

Nonroad engine has the meaning given in 40 CFR 1068.30. In general, this means all internal-combustion engines except motor vehicle engines, stationary engines, engines used solely for competition, or engines used in aircraft.

* * * * *

Phase 1 means relating to the Phase 1 emission standards described in appendix I of this part.

Phase 2 means relating to the Phase 2 emission standards described in appendix I of this part.

* * * * *

Placed into service means put into initial use for its intended purpose. Engines and equipment do not qualify as being ''placed into service'' based on incidental use by a manufacturer or dealer.

* * * * *

Small-volume emission family means one of the following:

(1) For requirements related to exhaust emissions for nonhandheld engines and to exhaust and evaporative emissions for handheld engines, *small-volume emission family* means any emission family whose U.S.-directed production volume in a given model year is projected at the time of certification to be no more than 5,000 engines or pieces of equipment.

(2) For requirements related to evaporative emissions for nonhandheld equipment, *small-volume emission family* means any equipment manufacturer's U.S.-directed production volume for identical fuel tank is projected at the time of certification to be no more than 5,000 units. Tanks are generally considered identical if they are produced under a single part number to conform to a single design or blueprint. Tanks should be considered identical if they differ only with respect to production variability, post-production changes (such as different fittings or grommets), supplier, color, or other extraneous design variables.

* * * * *

Small-volume equipment manufacturer means one of the following:

(1) For handheld equipment, an equipment manufacturer that had a U.S.-directed production volume of no more than 25,000 pieces of handheld equipment in any calendar year. For manufacturers owned by a parent company, this production limit applies to the production of the parent company and all its subsidiaries.

(2) For nonhandheld equipment, an equipment manufacturer with annual U.S.-directed production volumes of no more than 5,000 pieces of nonhandheld equipment in any calendar year. For manufacturers owned by a parent company, this production limit applies to the production of the parent company and all its subsidiaries.

(3) An equipment manufacturer that we designate to be a small-volume equipment manufacturer under § 1054.635.

* * * * *

Total hydrocarbon has the meaning given in 40 CFR 1065.1001. This generally means the combined mass of organic compounds measured by the specified procedure for measuring total hydrocarbon, expressed as an atomic hydrocarbon with an atomic hydrogen-to-carbon ratio of 1.85:1.

Total hydrocarbon equivalent has the meaning given in 40 CFR 1065.1001. This generally means the sum of the carbon mass contributions of non-oxygenated hydrocarbon, alcohols and aldehydes, or other organic compounds that are measured separately as contained in a gas sample, expressed as exhaust hydrocarbon from petroleum-fueled engines. The atomic hydrogen-to-carbon ratio of the equivalent hydrocarbon is 1.85:1.

* * * * *

■ 281. Revise § 1054.815 to read as follows:

§ 1054.815 What provisions apply to confidential information?

The provisions of 40 CFR 1068.10 apply for information you consider confidential.

■ 282. Revise § 1054.825 to read as follows:

§ 1054.825 What reporting and recordkeeping requirements apply under this part?

(a) This part includes various requirements to submit and record data or other information. Unless we specify otherwise, store required records in any format and on any media and keep them readily available for eight years after you send an associated application for certification, or eight years after you generate the data if they do not support an application for certification. We may request these records at any time. You must promptly give us organized, written records in English if we ask for them. This requirement to give us records applies whether or not you rely on someone else to keep records on your behalf. We may require you to submit written records in an electronic format.

(b) The regulations in § 1054.255 and 40 CFR 1068.25 and 1068.101 describe your obligation to report truthful and complete information. This includes information not related to certification. Failing to properly report information and keep the records we specify violates 40 CFR 1068.101(a)(2), which may involve civil or criminal penalties.

(c) Send all reports and requests for approval to the Designated Compliance Officer (see § 1054.801).

(d) Any written information we require you to send to or receive from another company is deemed to be a required record under this section. Such records are also deemed to be submissions to EPA. We may require you to send us these records.

(e) Under the Paperwork Reduction Act (44 U.S.C. 3501 et seq.,), the Office of Management and Budget approves the reporting and recordkeeping specified in the applicable regulations in this chapter. The following items illustrate the kind of reporting and recordkeeping we require for engines and equipment regulated under this part:

(1) We specify the following requirements related to engine and equipment certification in this part:

(i) In § 1054.20 we require equipment manufacturers to label their equipment if they are relying on component certification.

(ii) In § 1054.135 we require engine manufacturers to keep certain records related to duplicate labels sent to equipment manufacturers.

(iii) In § 1054.145 we include various reporting and recordkeeping requirements related to interim provisions.

(iv) In subpart C of this part we identify a wide range of information required to certify engines.

(v) In §§ 1054.345 and 1054.350 we specify certain records related to production-line testing.

(vi) [Reserved]

(vii) In subpart G of this part we identify several reporting and recordkeeping items for making demonstrations and getting approval related to various special compliance provisions.

(viii) In §§ 1054.725, 1054.730, and 1054.735 we specify certain records related to averaging, banking, and trading.

(2) We specify the following requirements related to component and equipment certification in 40 CFR part 1060:

(i) In 40 CFR 1060.20 we give an overview of principles for reporting information.

(ii) In 40 CFR part 1060, subpart C, we identify a wide range of information required to certify products.

(iii) In 40 CFR 1060.301 we require manufacturers to keep records related to evaluation of production samples for verifying that the products are as specified in the certificate of conformity.

(iv) In 40 CFR 1060.310 we require manufacturers to make components, engines, or equipment available for our testing if we make such a request.

(v) In 40 CFR 1060.505 we specify information needs for establishing various changes to published test procedures.

(3) We specify the following requirements related to testing in 40 CFR part 1065:

(i) In 40 CFR 1065.2 we give an overview of principles for reporting information.

(ii) In 40 CFR 1065.10 and 1065.12 we specify information needs for establishing various changes to published test procedures.

(iii) In 40 CFR 1065.25 we establish basic guidelines for storing test information.

(iv) In 40 CFR 1065.695 we identify the specific information and data items to record when measuring emissions.

(4) We specify the following requirements related to the general compliance provisions in 40 CFR part 1068:

(i) In 40 CFR 1068.5 we establish a process for evaluating good engineering judgment related to testing and certification.

(ii) In 40 CFR 1068.25 we describe general provisions related to sending and keeping information.

(iii) In 40 CFR 1068.27 we require manufacturers to make engines available for our testing or inspection if we make such a request.

(iv) In 40 CFR 1068.105 we require equipment manufacturers to keep certain records related to duplicate labels from engine manufacturers.

(v) In 40 CFR 1068.120 we specify recordkeeping related to rebuilding engines.

(vi) In 40 CFR part 1068, subpart C, we identify several reporting and recordkeeping items for making demonstrations and getting approval related to various exemptions.

(vii) In 40 CFR part 1068, subpart D, we identify several reporting and recordkeeping items for making demonstrations and getting approval related to importing engines.

(viii) In 40 CFR 1068.450 and 1068.455 we specify certain records related to testing production-line engines in a selective enforcement audit.

(ix) In 40 CFR 1068.501 we specify certain records related to investigating and reporting emission-related defects.

(x) In 40 CFR 1068.525 and 1068.530 we specify certain records related to recalling nonconforming engines.

(xi) In 40 CFR part 1068, subpart G, we specify certain records for requesting a hearing.

■ 283. Revise appendix I to part 1054 to read as follows:

Appendix I to Part 1054—Summary of Previous Emission Standards

The following standards, which EPA originally adopted under 40 CFR part 90, apply to nonroad spark-ignition engines produced before the model years specified in § 1054.1:

(a) *Handheld engines.* (1) Phase 1 standards apply for handheld engines as summarized in the following table starting with model year 1997:

TABLE 1 TO APPENDIX I—PHASE 1 EMISSION STANDARDS FOR HANDHELD ENGINES

[g/kW-hr] [a]

Engine displacement class	HC	NO_X	CO
Class III	295	5.36	805
Class IV	241	5.36	805
Class V	161	5.36	603

[a] Phase 1 standards are based on testing with new engines only.

(2) Phase 2 standards apply for handheld engines as summarized in the following table starting with model year 2002 for Class III and Class IV, and starting in model year 2004 for Class V:

TABLE 2 TO APPENDIX I—PHASE 2 EMISSION STANDARDS FOR HANDHELD ENGINES

[g/kW-hr]

Engine displacement class	HC + NO_X	CO
Class III	[a] 50	805
Class IV	[b] 50	805
Class V	[c] 72	603

[a] Class III engines had alternate HC+NO_X standards of 238, 175, and 113 for model years 2002, 2003, and 2004, respectively.
[b] Class IV engines had alternate HC+NO_X standards of 196, 148, and 99 for model years 2002, 2003, and 2004, respectively.
[c] Class V engines had alternate HC+NO_X standards of 143, 119, and 96 for model years 2004, 2005, and 2006, respectively.

(b) Nonhandheld engines. (1) Phase 1 standards apply for nonhandheld engines as summarized in the following table starting with model year 1997:

TABLE 3 TO APPENDIX I—PHASE 1 EMISSION STANDARDS FOR NONHANDHELD ENGINES

[g/kW-hr] [a]

Engine displacement class	HC + NO_X	CO
Class I	16.1	519
Class II	13.4	519

[a] Phase 1 standards are based on testing with new engines only.

(2) Phase 2 standards apply for nonhandheld engines as summarized in the following table starting with model year 2001 (except as noted for Class I engines):

TABLE 4 TO APPENDIX I—PHASE 2 EMISSION STANDARDS FOR NONHANDHELD ENGINES

[g/kW-hr]

Engine displacement class	HC + NO_X	NMHC + NO_X	CO
Class I–A	50	.....	610
Class I–B	40	37	610
Class I [a]	16.1	14.8	610
Class II [b]	12.1	11.3	610

[a] The Phase 2 standards for Class I engines apply for new engines produced starting August 1, 2007, and for any engines belonging to an engine model whose original production date was on or after August 1, 2003.
[b] Class II engines had alternate HC + NO_X standards of 18.0, 16.6, 15.0, 13.6 and alternate NMHC + NO_X standards of 16.7, 15.3, 14.0, 12.7 for model years 2001 through 2004, respectively.

(3) Note that engines subject to Phase 1 standards were not subject to useful life provisions as specified in § 1054.107. In addition, engines subject to Phase 1 standards and engines subject to Phase 2 standards were both not subject to the following provisions:

(i) Evaporative emission standards as specified in §§ 1054.110 and 1054.112.

(ii) Altitude adjustments as specified in § 1054.115(c).

(iii) Warranty assurance provisions as specified in § 1054.120(f).

(iv) Emission-related installation instructions as specified in § 1054.130.

(v) Bonding requirements as specified in § 1054.690.

■ 284. Amend appendix II to part 1054 by revising paragraph (b)(2) to read as follows:

Appendix II to Part 1054—Duty Cycles for Laboratory Testing

* * * * *

(b) * * *

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

TABLE 3 TO PARAGRAPH (b)(2)

RMC mode [a]	Time in mode (seconds)	Torque (percent) [b] [c]
1a Steady-state	41	0.
1b Transition	20	Linear transition.
2a Steady-state	135	100.
2b Transition	20	Linear transition.
3a Steady-state	112	10.
3b Transition	20	Linear transition.
4a Steady-state	337	75.
4b Transition	20	Linear transition.
5a Steady-state	518	25.
5b Transition	20	Linear transition.
6a Steady-state	494	50.
6b Transition	20	Linear transition.
7 Steady-state	43	0.

[a] Control engine speed as described in § 1054.505. Control engine speed for Mode 6 as described in § 1054.505(c) for idle operation.
[b] 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.
[c] The percent torque is relative to the value established for full-load torque, as described in § 1054.505.

PART 1060—CONTROL OF EVAPORATIVE EMISSIONS FROM NEW AND IN-USE NONROAD AND STATIONARY EQUIPMENT

■ 285. The authority citation for part 1060 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

■ 286. Amend § 1060.1 by revising paragraphs (a)(7), (c), and (d) to read as follows:

§ 1060.1 Which products are subject to this part's requirements?

(a) * * *

(7) Portable nonroad fuel tanks are considered portable marine fuel tanks for purposes of this part. Portable nonroad fuel tanks and fuel lines associated with such fuel tanks must therefore meet evaporative emission standards specified in 40 CFR 1045.112, whether or not they are used with marine vessels.

* * * * *

(c) Fuel caps are subject to evaporative emission standards at the point of installation on a fuel tank. When a fuel cap is certified for use with Marine SI engines or Small SI engines under the optional standards of § 1060.103, it becomes subject to all the requirements of this part as if these optional standards were mandatory.

(d) This part does not apply to any diesel-fueled engine or any other engine that does not use a volatile liquid fuel. In addition, this part does not apply to any engines or equipment in the following categories even if they use a volatile liquid fuel:

(1) Light-duty motor vehicles (see 40 CFR part 86).

(2) Heavy-duty motor vehicles and heavy-duty motor vehicle engines (see 40 CFR part 86). This part also does not apply to fuel systems for nonroad engines where such fuel systems are subject to part 86 because they are part of a heavy-duty motor vehicle.

(3) Aircraft engines (see 40 CFR part 87).

(4) Locomotives (see 40 CFR part 1033).

* * * * *

■ 287. Amend § 1060.5 by revising paragraph (a)(1) to read as follows:

§ 1060.5 Do the requirements of this part apply to me?

* * * * *

(a) * * *

(1) Each person meeting the definition of manufacturer (see § 1060.801) for a product that is subject to the standards and other requirements of this part must comply with such requirements. However, if one person complies with a specific requirement for a given product, then all manufacturers are deemed to have complied with that specific requirement. For example, if a Small SI equipment manufacturer uses fuel lines manufactured and certified by another company, the equipment manufacturer is not required to obtain its own certificate with respect to the fuel line emission standards. Such an equipment manufacturer remains subject to the standards and other requirements of this part. However, where a provision in this part requires a specific manufacturer to comply with certain provisions, this paragraph (a) does not change or modify such a requirement. For example, this paragraph (a) does not allow you to rely on another company to certify instead of you if we specifically require you to certify.

* * * * *

■ 288. Revise § 1060.30 to read as follows:

§ 1060.30 Submission of information.

Unless we specify otherwise, send all reports and requests for approval to the Designated Compliance Officer (see § 1060.801). See § 1060.825 for additional reporting and recordkeeping provisions.

■ 289. Amend § 1060.104 by revising paragraph (b)(3) to read as follows:

§ 1060.104 What running loss emission control requirements apply?

* * * * *

(b) * * *

(3) Get an approved executive order or other written approval from the California Air Resources Board showing that your system meets applicable running loss standards in California.

* * * * *

■ 290. Amend § 1060.105 by revising paragraphs (c)(1) and (e) to read as follows:

§ 1060.105 What diurnal requirements apply for equipment?

* * * * *

(c) * * *

(1) They must be self-sealing when detached from the engines. The tanks may not vent to the atmosphere when attached to an engine, except as allowed under paragraph (c)(2) of this section. An integrated or external manually activated device may be included in the fuel tank design to temporarily relieve pressure before refueling or connecting the fuel tank to the engine. However, the default setting for such a vent must be consistent with the requirement in paragraph (c)(2) of this section.

* * * * *

(e) Manufacturers of nonhandheld Small SI equipment may optionally meet the diurnal emission standards adopted by the California Air Resources Board. To meet the requirement in this paragraph (e), equipment must be certified to the performance standards specified in Title 13 California Code of Regulations (CCR) 2754(a) based on the applicable requirements specified in CP–902 and TP–902, including the requirements related to fuel caps in Title 13 CCR 2756. Equipment certified under this paragraph (e) does not need to use fuel lines or fuel tanks that have been certified separately. Equipment certified under this paragraph (e) are subject to all the referenced requirements in this paragraph (e) as if these specifications were mandatory.

* * * * *

■ 291. Amend § 1060.120 by revising paragraphs (b) and (c) to read as follows:

§ 1060.120 What emission-related warranty requirements apply?

* * * * *

(b) *Warranty period.* Your emission-related warranty must be valid for at least two years from the date the equipment is sold to the ultimate purchaser.

(c) *Components covered.* The emission-related warranty covers all components whose failure would increase the evaporative emissions, including those listed in 40 CFR part 1068, appendix I, and those from any other system you develop to control emissions. Your emission-related warranty does not need to cover components whose failure would not increase evaporative emissions.

* * * * *

■ 292. Amend § 1060.130 by revising paragraph (b)(3) to read as follows:

§ 1060.130 What installation instructions must I give to equipment manufacturers?

* * * * *

(b) * * *

(3) Describe how your certification is limited for any type of application. For example:

(i) For fuel tanks sold without fuel caps, you must specify the requirements for the fuel cap, such as the allowable materials, thread pattern, how it must seal, etc. You must also include instructions to tether the fuel cap as described in § 1060.101(f)(1) if you do not sell your fuel tanks with tethered fuel caps. The following instructions apply for specifying a certain level of emission control for fuel caps that will be installed on your fuel tanks:

(A) If your testing involves a default emission value for fuel cap permeation as specified in § 1060.520(b)(5)(ii)(C), specify in your installation instructions that installed fuel caps must either be certified with a Family Emission Limit at or below 30 g/m2/day, or have gaskets made of certain materials meeting the definition of ''low-permeability material'' in § 1060.801.

(B) If you certify your fuel tanks based on a fuel cap certified with a Family Emission Limit above 30 g/m2/day, specify in your installation instructions that installed fuel caps must either be certified with a Family Emission Limit at or below the level you used for certifying your fuel tanks, or have gaskets made of certain materials meeting the definition of ''low-permeability material'' in § 1060.801.

(ii) If your fuel lines do not meet permeation standards specified in § 1060.102 for EPA Low-Emission Fuel Lines, tell equipment manufacturers not to install the fuel lines with Large SI engines that operate on gasoline or another volatile liquid fuel.

* * * * *

■ 293. Amend § 1060.135 by revising the introductory text and paragraphs (a), (b) introductory text, and (b)(2), (3), and (4) to read as follows:

§ 1060.135 How must I label and identify the engines and equipment I produce?

The labeling requirements of this section apply for all equipment manufacturers that are required to certify their equipment or use certified fuel-system components. Note that engine manufacturers are also considered equipment manufacturers if they install a complete fuel system on an engine. See § 1060.137 for the labeling requirements that apply separately for fuel lines, fuel tanks, and other fuel-system components.

(a) At the time of manufacture, you must affix a permanent and legible label identifying each engine or piece of equipment. The label must be—

(1) Attached in one piece so it is not removable without being destroyed or defaced.

(2) Secured to a part of the engine or equipment needed for normal operation and not normally requiring replacement.

(3) Durable and readable for the equipment's entire life.

(4) Written in English.

(5) Readily visible in the final installation. It may be under a hinged door or other readily opened cover. It may not be hidden by any cover attached with screws or any similar designs. Labels on marine vessels (except personal watercraft) must be visible from the helm.

(b) If you hold a certificate under this part for your engine or equipment, the engine or equipment label specified in paragraph (a) of this section must—

* * * * *

(2) Include your corporate name and trademark. You may identify another company and use its trademark instead of yours if you comply with the branding provisions of 40 CFR 1068.45.

(3) State the date of manufacture [MONTH and YEAR] of the equipment; however, you may omit this from the label if you stamp, engrave, or otherwise permanently identify it elsewhere on the equipment, in which case you must also describe in your application for certification where you will identify the date on the equipment.

(4) State: ''THIS [equipment, vehicle, boat, etc.] MEETS U.S. EPA EVAP STANDARDS.''

* * * * *

■ 294. Amend § 1060.137 by revising paragraphs (a)(4) and (c)(1) to read as follows:

§ 1060.137 How must I label and identify the fuel-system components I produce?

* * * * *

(a) * * *

(4) Fuel caps, as described in this paragraph (a)(4). Fuel caps must be labeled if they are separately certified under § 1060.103. If the equipment has a diurnal control system that requires the fuel tank to hold pressure, identify the part number on the fuel cap.

* * * * *

(c) * * *

(1) Include your corporate name. You may identify another company instead of yours if you comply with the provisions of 40 CFR 1068.45.

* * * * *

■ 295. Amend § 1060.205 by revising paragraphs (a) and (m) to read as follows:

§ 1060.205 What must I include in my application?

* * * * *

(a) Describe the emission family's specifications and other basic parameters of the emission controls. Describe how you meet the running loss emission control requirements in § 1060.104, if applicable. Describe how you meet any applicable equipment-based requirements of § 1060.101(e) and (f). State whether you are requesting certification for gasoline or some other fuel type. List each distinguishable configuration in the emission family. For equipment that relies on one or more certified components, identify the EPA-issued emission family name for all the certified components.

* * * * *

(m) Report all valid test results. Also indicate whether there are test results from invalid tests or from any other tests of the emission-data unit, whether or not they were conducted according to the test procedures of subpart F of this part. We may require you to report these additional test results. We may ask you to send other information to confirm that your tests were valid under the requirements of this part.

* * * * *

■ 296. Amend § 1060.225 by revising paragraphs (b) and (g) and adding paragraph (h) to read as follows:

§ 1060.225 How do I amend my application for certification?

* * * * *

(b) To amend your application for certification, send the following relevant information to the Designated Compliance Officer.

(1) Describe in detail the addition or change in the configuration you intend to make.

(2) Include engineering evaluations or data showing that the amended emission family complies with all applicable requirements in this part. You may do this by showing that the original emission data are still appropriate for showing that the amended family complies with all applicable requirements in this part.

(3) If the original emission data for the emission family are not appropriate to show compliance for the new or modified configuration, include new test data showing that the new or modified configuration meets the requirements of this part.

(4) Include any other information needed to make your application correct and complete.

* * * * *

(g) You may produce equipment or components as described in your amended application for certification and consider those equipment or components to be in a certified configuration if we approve a new or modified configuration during the model year or production period under paragraph (d) of this section. Similarly, you may modify in-use products as described in your amended application for certification and consider those products to be in a certified configuration if we approve a new or modified configuration at any time under paragraph (d) of this section. Modifying a new or in-use product to be in a certified configuration does not violate the tampering prohibition of 40 CFR 1068.101(b)(1), as long as this does not involve changing to a certified configuration with a higher family emission limit.

(h) Component manufacturers may not change an emission family's FEL under any circumstances. Changing the FEL would require submission of a new application for certification.

■ 297. Amend § 1060.230 by revising paragraph (d)(2) to read as follows:

§ 1060.230 How do I select emission families?

* * * * *

(d) * * *

(2) Type of material (such as type of charcoal used in a carbon canister). This paragraph (d)(2) does not apply for materials that are unrelated to emission control performance.

* * * * *

■ 298. Amend § 1060.235 by:

■ a. Revising the section heading.

■ b. Redesignating paragraphs (a) and (b) as paragraphs (b) and (a), respectively.

■ c. Revising paragraphs (d) and (e)(1).

The revisions read as follows:

§ 1060.235 What testing requirements apply for certification?

* * * * *

(d) We may perform confirmatory testing by measuring emissions from any of your products from the emission family, as follows:

(1) You must supply your products to us if we choose to perform confirmatory testing. We may require you to deliver your test articles to a facility we designate for our testing.

(2) If we measure emissions on one of your products, the results of that testing become the official emission results for the emission family. Unless we later invalidate these data, we may decide not to consider your data in determining if your emission family meets applicable requirements in this part.

(e) * * *

(1) The emission family from the previous production period differs from the current emission family only with respect to production period, items identified in § 1060.225(a), or other characteristics unrelated to emissions. We may waive the criterion in this paragraph (e)(1) for differences we determine not to be relevant.

* * * * *

■ 299. Amend § 1060.240 by revising paragraph (e)(2)(i) to read as follows:

§ 1060.240 How do I demonstrate that my emission family complies with evaporative emission standards?

* * * * *

(e) * * *

(2) * * *

(i) You may use the measurement procedures specified by the California Air Resources Board in Attachment 1 to TP–902 to show that canister working capacity is least 3.6 grams of vapor storage capacity per gallon of nominal fuel tank capacity (or 1.4 grams of vapor storage capacity per gallon of nominal fuel tank capacity for fuel tanks used in nontrailerable boats).

* * * * *

■ 300. Amend § 1060.250 by revising paragraphs (a)(3)(ii) and (b) to read as follows:

§ 1060.250 What records must I keep?

(a) * * *

(3) * * *

(ii) All your emission tests (valid and invalid), including the date and purpose of each test and documentation of test parameters described in subpart F of this part.

* * * * *

(b) Keep required data from emission tests and all other information specified in this section for eight years after we issue your certificate. If you use the same emission data or other information for a later model year, the eight-year period restarts with each year that you continue to rely on the information.

* * * * *

■ 301. Revise § 1060.255 to read as follows:

§ 1060.255 What decisions may EPA make regarding a certificate of conformity?

(a) If we determine an application is complete and shows that the emission family meets all the requirements of this part and the Clean Air Act, we will issue a certificate of conformity for the emission family for that production period. We may make the approval subject to additional conditions.

(b) We may deny an application for certification if we determine that an emission family fails to comply with emission standards or other requirements of this part or the Clean Air Act. We will base our decision on all available information. If we deny an application, we will explain why in writing.

(c) In addition, we may deny your application or suspend or revoke a certificate of conformity if you do any of the following:

(1) Refuse to comply with any testing or reporting requirements in this part.

(2) Submit false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete.

(3) Cause any test data to become inaccurate.

(4) Deny us from completing authorized activities (see 40 CFR 1068.20). This includes a failure to provide reasonable assistance.

(5) Produce equipment or components for importation into the United States at a location where local law prohibits us from carrying out authorized activities.

(6) Fail to supply requested information or amend an application to include all equipment or components being produced.

(7) Take any action that otherwise circumvents the intent of the Clean Air Act or this part.

(d) We may void a certificate of conformity if you fail to keep records, send reports, or give us information as required under this part or the Clean Air Act. Note that these are also violations of 40 CFR 1068.101(a)(2).

(e) We may void a certificate of conformity if we find that you intentionally submitted false or incomplete information. This includes doing anything after submitting an application that causes submitted information to be false or incomplete.

(f) If we deny an application or suspend, revoke, or void a certificate of conformity, you may ask for a hearing (see § 1060.820).

■ 302. Amend § 1060.501 by revising paragraph (c) to read as follows:

§ 1060.501 General testing provisions.

* * * * *

(c) The specification for gasoline to be used for testing is given in 40 CFR 1065.710(b) or (c). Use the grade of gasoline specified for general testing. For testing specified in this part that requires blending gasoline and ethanol, blend this grade of neat gasoline with fuel-grade ethanol meeting the specifications of ASTM D4806 (incorporated by reference in § 1060.810). You do not need to measure the ethanol concentration of such blended fuels and may instead calculate the blended composition by assuming that the ethanol is pure and mixes perfectly with the base fuel. For example, if you mix 10.0 liters of fuel-grade ethanol with 90.0 liters of gasoline, you may assume the resulting mixture is 10.0 percent ethanol. You may use more pure or less pure ethanol if you can demonstrate that it will not affect your ability to demonstrate compliance with the applicable emission standards in subpart B of this part. Note that unless we specify otherwise, any references to gasoline-ethanol mixtures containing a specified ethanol concentration means mixtures meeting the provisions of this paragraph (c). The following table summarizes test fuel requirements for the procedures specified in this subpart:

TABLE 1 TO § 1060.501—SUMMARY OF TEST FUEL REQUIREMENTS

Procedure	Reference	Test Fuel [a]
Low-Emission Fuel Lines	§ 1060.510	CE10.
Nonroad Fuel Lines	§ 1060.515	CE10 [b].
Cold-Weather Fuel Lines	§ 1060.515	Splash-blended E10.
Fuel tank and fuel cap permeation	§ 1060.520	Splash-blended E10; manufacturers may instead use CE10.

TABLE 1 TO § 1060.501—SUMMARY OF TEST FUEL REQUIREMENTS—Continued

Procedure	Reference	Test Fuel [a]
Diurnal	§ 1060.525	E0.

[a] Pre-mixed gasoline blends are specified in 40 CFR 1065.710(b). Splash-blended gasoline blends are a mix of neat gasoline specified in 40 CFR 1065.710(c) and fuel-grade ethanol.
[b] Different fuel specifications apply for fuel lines tested under 40 CFR part 1051 for recreational vehicles, as described in 40 CFR 1051.501.

* * * * *

■ 303. Amend § 1060.505 by revising paragraph (c)(3) to read as follows:

§ 1060.505 Other procedures.

* * * * *

(c) * * *

(3) You may request to use alternate procedures that are equivalent to the specified procedures, or procedures that are more accurate or more precise than the specified procedures. We may perform tests with your equipment using either the approved alternate procedures or the specified procedures. See 40 CFR 1065.12 for a description of the information that is generally required for such alternate procedures.

* * * * *

■ 304. Amend § 1060.515 by revising paragraph (a)(2) to read as follows:

§ 1060.515 How do I test EPA Nonroad Fuel Lines and EPA Cold-Weather Fuel Lines for permeation emissions?

* * * * *

(a) * * *

(2) For EPA Cold-Weather Fuel Lines, use gasoline blended with ethanol as described in § 1060.501(c).

* * * * *

■ 305. Amend § 1060.520 by revising paragraphs (a), (b)(1) and (4), (d)(3) and (6), (d)(8)(ii), (d)(9), and (e) to read as follows:

§ 1060.520 How do I test fuel tanks for permeation emissions?

* * * * *

(a) *Preconditioning durability testing.* Take the following steps before an emission test, in any order, if your emission control technology involves surface treatment or other post-processing treatments such as an epoxy coating:

(1) *Pressure cycling.* Perform a pressure test by sealing the fuel tank and cycling it between +13.8 and −3.4 kPa (+2.0 and −0.5 psig) for 10,000 cycles at a rate of 60 seconds per cycle. The purpose of this test is to represent environmental wall stresses caused by pressure changes and other factors (such as vibration or thermal expansion). If your fuel tank cannot be tested using the pressure cycles specified by this paragraph (a)(1), you may ask to use special test procedures under § 1060.505.

(2) *UV exposure.* Perform a sunlight-exposure test by exposing the fuel tank to an ultraviolet light of at least 24 W/m2 (0.40 W-hr/m2/min) on the fuel tank surface for at least 450 hours. Alternatively, the fuel tank may be exposed to direct natural sunlight for an equivalent period of time as long as you ensure that the fuel tank is exposed to at least 450 daylight hours.

(3) *Slosh testing.* Perform a slosh test by filling the fuel tank to 40–50 percent of its capacity with the fuel specified in paragraph (e) of this section and rocking it at a rate of 15 cycles per minute until you reach one million total cycles. Use an angle deviation of +15° to −15° from level. Take steps to ensure that the fuel remains at 40–50 percent of its capacity throughout the test run.

(4) *Cap testing.* Perform durability cycles on fuel caps intended for use with handheld equipment by putting the fuel cap on and taking it off 300 times. Tighten the fuel cap each time in a way that represents the typical in-use experience.

(b) * * *

(1) Fill the fuel tank to its nominal capacity with the fuel specified in paragraph (e) of this section, seal it, and allow it to soak at 28±5 °C for at least 20 weeks. Alternatively, the fuel tank may be soaked for at least 10 weeks at 43 5 °C. You may count the time of the preconditioning steps in paragraph (a) of this section as part of the preconditioning fuel soak as long as the ambient temperature remains within the specified temperature range and the fuel tank continues to be at least 40 percent full throughout the test; you may add or replace fuel as needed to conduct the specified durability procedures. Void the test if you determine that the fuel tank has any kind of leak.

* * * * *

(4) Allow the fuel tank and its contents to equilibrate to the temperatures specified in paragraph (d)(7) of this section. Seal the fuel tank as described in paragraph (b)(5) of this section once the fuel temperatures are stabilized at the test temperature. You must seal the fuel tank no more than eight hours after refueling. Until the fuel tank is sealed, take steps to minimize the vapor losses from the fuel tank, such as keeping the fuel cap loose on the fuel inlet or routing vapors through a vent hose.

* * * * *

(d) * * *

(3) Carefully place the test tank within a temperature-controlled room or enclosure. Do not spill or add any fuel.

* * * * *

(6) Leave the test tank in the room or enclosure for the duration of the test run, except that you may remove the tank for up to 30 minutes at a time to meet weighing requirements.

* * * * *

(8) * * *

(ii) If after ten days of testing your r^2 value is below 0.95 and your measured value is more than 50 percent of the applicable standard in subpart B of this part, continue testing for a total of 20 days or until r^2 is at or above 0.95. If r^2 is not at or above 0.95 within 20 days of testing, discontinue the test and precondition the test tank further until it has stabilized emission levels, then repeat the testing.

(9) Record the difference in mass between the reference tank and the test tank for each measurement. This value is M_i, where ''i'' is a counter representing the number of days elapsed. Subtract M_i from M_o and divide the difference by the internal surface area of the fuel tank. Divide this g/m^2 value by the number of test days (using at least two decimal places) to calculate the emission rate in g/m^2/day. Example: If a fuel tank with an internal surface area of 0.720 m^2 weighed 1.31 grams less than the reference tank at the beginning of the test and weighed 9.86 grams less than the reference tank after soaking for 10.03 days, the emission rate would be $((-1.31\ g) - (-9.86\ g))/0.720\ m^2 / 10.03$ days = 1.1839 g/m^2/day.

* * * * *

(e) *Fuel specifications.* Use a low-level ethanol-gasoline blend as specified in § 1060.501(c). As an alternative, you may use Fuel CE10, as described in § 1060.515(a)(1).

* * * * *

■ 306. Amend § 1060.525 by revising paragraph (a)(2) to read as follows:

§ 1060.525 How do I test fuel systems for diurnal emissions?

* * * * *

(a) * * *

(2) Fill the fuel tank to 40 percent of nominal capacity with the gasoline specified in 40 CFR 1065.710(c) for general testing.

* * * * *

■ 307. Amend § 1060.601 by revising paragraphs (a) and (b)(2) to read as follows:

§ 1060.601 How do the prohibitions of 40 CFR 1068.101 apply with respect to the requirements of this part?

(a) As described in § 1060.1, fuel tanks and fuel lines that are used with or intended to be used with new nonroad engines or equipment are subject to evaporative emission standards under this part. This includes portable marine fuel tanks and fuel lines and other fuel-system components associated with portable marine fuel tanks. Note that § 1060.1 specifies an implementation schedule based on the date of manufacture of nonroad equipment, so new fuel tanks and fuel lines are not subject to standards under this part if they will be installed for use in equipment built before the specified dates for implementing the appropriate standards, subject to the limitations in paragraph (b) of this section. Except as specified in paragraph (f) of this section, fuel-system components that are subject to permeation or diurnal emission standards under this part must be covered by a valid certificate of conformity before being introduced into U.S. commerce to avoid violating the prohibition of 40 CFR 1068.101(a). To the extent we allow it under the exhaust standard-setting part, fuel-system components may be certified with a family emission limit higher than the specified emission standard.

(b) * * *

(2) *Applicability of standards after January 1, 2020.* Starting January 1, 2020, it is presumed that replacement components will be used with nonroad engines regulated under this part if they can reasonably be used with such engines. Manufacturers, distributors, retailers, and importers are therefore obligated to take reasonable steps to ensure that any uncertified components are not used to replace certified components. This would require labeling the components and may also require restricting the sales and requiring the ultimate purchaser to agree to not use the components inappropriately. This paragraph (b)(2) does not apply for components that are clearly not intended for use with fuels.

* * * * *

■ 308. Add § 1060.610 to read as follows:

§ 1060.610 Temporary exemptions for manufacturing and assembling equipment and fuel-system components.

(a) If you are a certificate holder, you may ship components or equipment requiring further assembly between two of your facilities, subject to the provisions of this paragraph (a). Unless we approve otherwise, you must maintain ownership and control of the products until they reach their destination. We may allow for shipment where you do not maintain actual ownership and control of the engines (such as hiring a shipping company to transport the products) but only if you demonstrate that the products will be transported only according to your specifications. Notify us of your intent to use the exemption in this paragraph (a) in your application for certification, if applicable. Your exemption is effective when we grant your certificate. You may alternatively request an exemption in a separate submission; for example, this would be necessary if you will not be the certificate holder for the products in question. We may require you to take specific steps to ensure that such products are in a certified configuration before reaching the ultimate purchaser. Note that since this is a temporary exemption, it does not allow you to sell or otherwise distribute equipment in an uncertified configuration to ultimate purchasers. Note also that the exempted equipment remains new and subject to emission standards until its title is transferred to the ultimate purchaser or it otherwise ceases to be new.

(b) If you certify equipment, you may ask us at the time of certification for an exemption to allow you to ship your equipment without a complete fuel system. We will generally approve an exemption under this paragraph (b) only if you can demonstrate that the exemption is necessary and that you will take steps to ensure that equipment assembly will be properly completed before reaching the ultimate purchaser. We may specify conditions that we determine are needed to ensure that shipping the equipment without such components will not result in the equipment operating with uncertified components or otherwise in an uncertified configuration. For example, we may require that you ship the equipment to manufacturers that are contractually obligated to install certain components. See 40 CFR 1068.261.

§ 1060.640 [Removed]

■ 309. Remove § 1060.640.

■ 310. Amend § 1060.801 by revising the definitions for ''Configuration'', ''Designated Compliance Officer'', ''Fuel type'', ''Model year'', ''Placed into service'', ''Portable nonroad fuel tank'', and ''Small SI'' to read as follows:

§ 1060.801 What definitions apply to this part?

* * * * *

Configuration means a unique combination of hardware (material, geometry, and size) and calibration within an emission family. Units within a single configuration differ only with respect to normal production variability or factors unrelated to emissions.

* * * * *

Designated Compliance Officer means the Director, Gasoline Engine Compliance Center, U.S. Environmental Protection Agency, 2000 Traverwood Drive, Ann Arbor, MI 48105; *complianceinfo@epa.gov*.

* * * * *

Fuel type means a general category of fuels such as gasoline or natural gas. There can be multiple grades within a single fuel type, such as premium gasoline, regular gasoline, or low-level ethanol-gasoline blends.

* * * * *

Model year means one of the following things:

(1) For equipment defined as ''new nonroad equipment'' under paragraph (1) of the definition of ''new nonroad equipment'' model year means one of the following:

(i) Calendar year of production.

(ii) Your annual new model production period if it is different than the calendar year. This must include January 1 of the calendar year for which the model year is named. It may not begin before January 2 of the previous calendar year and it must end by December 31 of the named calendar year.

(2) For other equipment defined as ''new nonroad equipment'' under paragraph (2) of the definition of ''new nonroad equipment'' model year has the meaning given in the exhaust standard-setting part.

(3) For other equipment defined as ''new nonroad equipment'' under paragraph (3) or (4) of the definition of ''new nonroad equipment'' model year means the model year of the engine as defined in the exhaust standard-setting part.

* * * * *

Placed into service means put into initial use for its intended purpose. Equipment does not qualify as being ''placed into service'' based on

incidental use by a manufacturer or dealer.

* * * * *

Portable nonroad fuel tank means a fuel tank that meets each of the following criteria:

(1) It has design features indicative of use in portable applications, such as a carrying handle and fuel line fitting that can be readily attached to and detached from a nonroad engine.

(2) It has a nominal fuel capacity of 12 gallons or less.

(3) It is designed to supply fuel to an engine while the engine is operating.

(4) It is not used or intended to be used to supply fuel to a marine engine. Note that portable tanks excluded from this definition of ''portable nonroad fuel tank'' under this paragraph (4) because of their use with marine engines are portable marine fuel tanks.

* * * * *

Small SI means relating to engines that are subject to emission standards in 40 CFR part 1054.

* * * * *

■ 311. Amend § 1060.810 by:

■ a. Removing and reserving paragraph (d); and

■ b. Revising paragraph (e) introductory text.

The revision reads as follows:

§ 1060.810 What materials does this part reference?

* * * * *

(e) *American Boat and Yacht Council Material.* The following documents are available from the American Boat and Yacht Council, 613 Third Street, Suite 10, Annapolis, MD 21403 or (410) 990–4460 or *http://abycinc.org/*:

* * * * *

■ 312. Revise § 1060.815 to read as follows:

§ 1060.815 What provisions apply to confidential information?

The provisions of 40 CFR 1068.10 apply for information you consider confidential.

■ 313. Revise § 1060.825 to read as follows:

§ 1060.825 What reporting and recordkeeping requirements apply under this part?

(a) This part includes various requirements to submit and record data or other information. Unless we specify otherwise, store required records in any format and on any media and keep them readily available for eight years after you send an associated application for certification, or eight years after you generate the data if they do not support an application for certification. We may request these records at any time. You must promptly give us organized, written records in English if we ask for them. This paragraph (a) applies whether or not you rely on someone else to keep records on your behalf. We may require you to submit written records in an electronic format.

(b) The regulations in § 1060.255 and 40 CFR 1068.25 and 1068.101 describe your obligation to report truthful and complete information. This includes information not related to certification. Failing to properly report information and keep the records we specify violates 40 CFR 1068.101(a)(2), which may involve civil or criminal penalties.

(c) Send all reports and requests for approval to the Designated Compliance Officer (see § 1060.801).

(d) Any written information we require you to send to or receive from another company is deemed to be a required record under this section. Such records are also deemed to be submissions to EPA. We may require you to send us these records.

(e) Under the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*), the Office of Management and Budget approves the reporting and recordkeeping specified in the applicable regulations in this chapter. The following items illustrate the kind of reporting and recordkeeping we require for products regulated under this part:

(1) We specify the following requirements related to component and equipment certification in this part:

(i) In § 1060.20 we give an overview of principles for reporting information.

(ii) In subpart C of this part we identify a wide range of information required to certify engines.

(iii) In § 1060.301 we require manufacturers to make components, engines, or equipment available for our testing if we make such a request, and to keep records related to evaluation of production samples for verifying that the products are as specified in the certificate of conformity.

(iv) In § 1060.505 we specify information needs for establishing various changes to published test procedures.

(2) We specify the following requirements related to the general compliance provisions in 40 CFR part 1068:

(i) In 40 CFR 1068.5 we establish a process for evaluating good engineering judgment related to testing and certification.

(ii) In 40 CFR 1068.25 we describe general provisions related to sending and keeping information.

(iii) In 40 CFR 1068.27 we require manufacturers to make equipment available for our testing or inspection if we make such a request.

(iv) In 40 CFR 1068.105 we require equipment manufacturers to keep certain records related to duplicate labels from engine manufacturers.

(v) [Reserved]

(vi) In 40 CFR part 1068, subpart C, we identify several reporting and recordkeeping items for making demonstrations and getting approval related to various exemptions.

(vii) In 40 CFR part 1068, subpart D, we identify several reporting and recordkeeping items for making demonstrations and getting approval related to importing equipment.

(viii) In 40 CFR 1068.450 and 1068.455 we specify certain records related to testing production-line products in a selective enforcement audit.

(ix) In 40 CFR 1068.501 we specify certain records related to investigating and reporting emission-related defects.

(x) In 40 CFR 1068.525 and 1068.530 we specify certain records related to recalling nonconforming equipment.

(xi) In 40 CFR part 1068, subpart G, we specify certain records for requesting a hearing.

PART 1065—ENGINE-TESTING PROCEDURES

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

Authority: 42 U.S.C. 7401–7671q.

■ 315. Amend § 1065.1 by revising paragraph (g) to read as follows:

§ 1065.1 Applicability.

* * * * *

(g) For additional information regarding the test procedures in this part, visit our website at *www.epa.gov,* and in particular *https://www.epa.gov/vehicle-and-fuel-emissions-testing/engine-testing-regulations.*

* * * * *

■ 316. Amend § 1065.2 by revising paragraph (c) to read as follows:

§ 1065.2 Submitting information to EPA under this part.

* * * * *

(c) We may void any certificates or approvals associated with a submission of information if we find that you intentionally submitted false, incomplete, or misleading information. For example, if we find that you intentionally submitted incomplete information to mislead EPA when requesting approval to use alternate test procedures, we may void the certificates for all engine families certified based on emission data collected using the

alternate procedures. This paragraph (c) would also apply if you ignore data from incomplete tests or from repeat tests with higher emission results.

* * * * *

■ 317. Amend § 1065.130 by revising paragraph (e) to read as follows:

§ 1065.130 Engine exhaust.

* * * * *

(e) *Leaks.* Minimize leaks sufficiently to ensure your ability to demonstrate compliance with the applicable standards in this chapter. We recommend performing carbon balance error verification as described in § 1065.543 to verify exhaust system integrity.

* * * * *

■ 318. Amend § 1065.140 by revising paragraphs (c)(6)(i) and (e)(2) to read as follows:

§ 1065.140 Dilution for gaseous and PM constituents.

* * * * *

(c) * * *

(6) * * *

(i) *Preventing aqueous condensation.* To prevent condensation, you must keep the temperature of internal surfaces, excluding any sample probes, above the dewpoint of the dilute exhaust passing through the CVS tunnel. Use good engineering judgment to monitor temperatures in the CVS. For the purposes of this paragraph (c)(6), assume that aqueous condensation is pure water condensate only, even though the definition of ''aqueous condensation'' in § 1065.1001 includes condensation of any constituents that contain water. No specific verification check is required under this paragraph (c)(6)(i), but we may ask you to show how you comply with this requirement. You may use engineering analysis, CVS tunnel design, alarm systems, measurements of wall temperatures, and calculation of water dewpoint to demonstrate compliance with this requirement. For optional CVS heat exchangers, you may use the lowest water temperature at the inlet(s) and outlet(s) to determine the minimum internal surface temperature.

* * * * *

(e) * * *

(2) For any PM dilution system (*i.e.,* CVS or PFD), add dilution air to the raw exhaust such that the minimum overall ratio of diluted exhaust to raw exhaust is within the range of (5:1 to 7:1) and is at least 2:1 for any primary dilution stage. Base this minimum value on the maximum engine exhaust flow rate during a given duty cycle for discrete-mode testing and on the maximum engine exhaust flow rate during a given test interval for other testing. Either measure the maximum exhaust flow during a practice run of the test interval or estimate it based on good engineering judgment (for example, you might rely on manufacturer-published literature).

* * * * *

■ 319. Amend § 1065.145 by revising paragraph (e)(3)(i) to read as follows:

§ 1065.145 Gaseous and PM probes, transfer lines, and sampling system components.

* * * * *

(e) * * *

(3) * * *

(i) If you use a NO_X sample pump upstream of either an NO_2-to-NO converter that meets § 1065.378 or a chiller that meets § 1065.376, design the sampling system to prevent aqueous condensation.

* * * * *

■ 320. Amend § 1065.170 by revising the introductory text and paragraph (a)(1) to read as follows:

§ 1065.170 Batch sampling for gaseous and PM constituents.

Batch sampling involves collecting and storing emissions for later analysis. Examples of batch sampling include collecting and storing gaseous emissions in a bag or collecting and storing PM on a filter. You may use batch sampling to store emissions that have been diluted at least once in some way, such as with CVS, PFD, or BMD. You may use batch sampling to store undiluted emissions. You may stop emission sampling anytime the engine is turned off, consistent with good engineering judgment. This is intended to allow for higher concentrations of dilute exhaust gases and more accurate measurements. Account for exhaust transport delay in the sampling system and integrate over the actual sampling duration when determining n_{dexh}. Use good engineering judgment to add dilution air to fill bags up to minimum read volumes, as needed.

(a) * * *

(1) Verify proportional sampling after an emission test as described in § 1065.545. You must exclude from the proportional sampling verification any portion of the test where you are not sampling emissions because the engine is turned off and the batch samplers are not sampling, accounting for exhaust transport delay in the sampling system. Use good engineering judgment to select storage media that will not significantly change measured emission levels (either up or down). For example, do not use sample bags for storing emissions if the bags are permeable with respect to emissions or if they off gas emissions to the extent that it affects your ability to demonstrate compliance with the applicable gaseous emission standards in this chapter. As another example, do not use PM filters that irreversibly absorb or adsorb gases to the extent that it affects your ability to demonstrate compliance with the applicable PM emission standard in this chapter.

* * * * *

■ 321. Revise § 1065.205 to read as follows:

§ 1065.205 Performance specifications for measurement instruments.

Your test system as a whole must meet all the calibrations, verifications, and test-validation criteria specified elsewhere in this part for laboratory testing or field testing, as applicable. We recommend that your instruments meet the specifications in this section for all ranges you use for testing. We also recommend that you keep any documentation you receive from instrument manufacturers showing that your instruments meet the specifications in the following table:

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TABLE 1 OF §1065.205–RECOMMENDED PERFORMANCE SPECIFICATIONS FOR MEASUREMENT INSTRUMENTS

Measurement Instrument	Measured quantity symbol	Complete System Rise time ($t_{10\text{-}90}$) and Fall time ($t_{90\text{-}10}$)[a]	Recording update frequency	Accuracy[b]	Repeatability[b]	Noise[b]
Engine speed transducer	f_n	1 s	1 Hz means	2 % of pt. or 0.5 % of max.	1 % of pt. or 0.25 % of max.	0.05 % of max
Engine torque transducer	T	1 s	1 Hz means	2 % of pt. or 1 % of max.	1 % of pt. or 0.5 % of max	0.05 % of max.
Electrical work (active-power meter)	W	1 s	1 Hz means	2 % of pt. or 0.5 % of max.	1 % of pt. or 0.25 % of max.	0.05 % of max
General pressure transducer (not a part of another instrument)	p	5 s	1 Hz	2 % of pt. or 1 % of max.	1 % of pt. or 0.5 % of max.	0.1 % of max
Atmospheric pressure meter for PM-stabilization and balance environments	p_{atmos}	50 s	5 times per hour	50 Pa	25 Pa	5 Pa
General purpose atmospheric pressure meter	p_{atmos}	50 s	5 times per hour	250 Pa	100Pa	50 Pa
Temperature sensor for PM-stabilization and balance environments	T	50 s	0.1 Hz	0.25 K	0.1 K	0.1 K
Other temperature sensor (not a part of another instrument)	T	10 s	0.5 Hz	0.4 % of pt. K or 0.2 % of max. K	0.2 % of pt. K or 0.1 % of max. K	0.1 % of max.
Dewpoint sensor for intake air, PM-stabilization and balance environments	T_{dew}	50 s	0.1 Hz	0.25 K	0.1 K	0.02 K
Other dewpoint sensor	T_{dew}	50 s	0.1 Hz	1 K	0.5 K	0.1 K
Fuel mass flow rate meter[c]	$\dot{m}$	5 s	1 Hz	2 % of pt. or 1.5 % of max.	1 % of pt. or 0.75 % of max.	0.5 % of max.
DEF mass flow rate meter[c]	$\dot{m}$	5 s	1 Hz	5 % of pt. or 4 % of max.	2.5 % of pt. or 2 % of max.	1.25 % of max.
Fuel mass scale[d]	m	5 s	1 Hz	0.36 % · m_{max} + 0.25 % · pt.	1.13 % · m_{max}	4.4 % · m_{max}
DEF mass scale[d]	m	5 s	1 Hz	0.36 % · m_{max} + 0.25 % · pt.	1.13 % · m_{max}	4.4 % · m_{max}
Total diluted exhaust meter (CVS)[c] (With heat exchanger before meter)	$\dot{n}$	1 s (5 s)	1 Hz means (1 Hz)	2 % of pt. or 1.5 % of max.	1 % of pt. or 0.75 % of max.	1 % of max.
Dilution air, inlet air, exhaust, and sample flow meters[c]	$\dot{n}$	1 s	1 Hz means of 5 Hz samples	2.5 % of pt. or 1.5 % of max.	1.25 % of pt. or 0.75 % of max.	1 % of max.
Continuous gas analyzer	x	5 s	1 Hz	2 % of pt. or 2 % of meas.	1 % of pt. or 1 % of meas.	1 % of max.
Batch gas analyzer	x	—	—	2 % of pt. or 2 % of meas.	1 % of pt. or 1 % of meas.	1 % of max.
Gravimetric PM balance	m_{PM}	—	—	See §1065.790	0.5 µg	—
Inertial PM balance	m_{PM}	5 s	1 Hz	2 % of pt. or 2 % of meas.	1 % of pt. or 1 % of meas.	0.2 % of max.

[a]The performance specifications identified in the table apply separately for rise time and fall time.

[b]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.

[c]The procedure for accuracy, repeatability, and noise measurement described in §1065.305 may be modified for flow meters to allow noise to be measured at the lowest calibrated value instead of zero flow rate.

[d]Base performance specifications for mass scales on differential mass over the test interval as described in §1065.307(e)(9).

■ 322. Amend § 1065.220 by revising paragraph (a) introductory text to read as follows:

§ 1065.220 Fuel flow meter.

(a) *Application.* You may use fuel flow meters in combination with a chemical balance of fuel, DEF, intake air, and raw exhaust to calculate raw exhaust flow as described in § 1065.655(f). You may also use fuel flow meters to determine the mass flow rate of carbon-carrying fuel streams for performing carbon balance error verification in § 1065.543 and to calculate the mass of those fuel streams as described in § 1065.643. The following provisions apply for using fuel flow meters:

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■ 323. Amend § 1065.225 by revising paragraph (a) introductory text to read as follows:

§ 1065.225 Intake-air flow meter.

(a) *Application.* You may use intake-air flow meters in combination with a chemical balance of fuel, DEF, intake air, and raw exhaust to calculate raw exhaust flow as described in § 1065.655(f) and (g). You may also use intake-air flow meters to determine the amount of intake air input for performing carbon balance error verification in § 1065.543 and to calculate the measured amount of intake air, n_{int}, as described in § 1065.643. The following provisions apply for using intake air flow meters:

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■ 324. Revise § 1065.247 to read as follows:

§ 1065.247 Diesel exhaust fluid flow rate.

(a) *Application.* Determine diesel exhaust fluid (DEF) flow rate over a test interval for batch or continuous emission sampling using one of the three methods described in this section.

(b) *ECM.* Use the ECM signal directly to determine DEF flow rate. You may combine this with a gravimetric scale if that improves measurement quality. Prior to testing, you may characterize the ECM signal using a laboratory measurement and adjust the ECM signal, consistent with good engineering judgment.

(c) *Flow meter.* Measure DEF flow rate with a flow meter. We recommend that the flow meter that meets the specifications in Table 1 of § 1065.205. Note that your overall system for measuring DEF flow must meet the linearity verification in § 1065.307. Measure using the following procedure:

(1) Condition the flow of DEF as needed to prevent wakes, eddies, circulating flows, or flow pulsations from affecting the accuracy or repeatability of the meter. You may accomplish this by using a sufficient length of straight tubing (such as a length equal to at least 10 pipe diameters) or by using specially designed tubing bends, straightening fins, or pneumatic pulsation dampeners to establish a steady and predictable velocity profile upstream of the meter. Condition the flow as needed to prevent any gas bubbles in the fluid from affecting the flow meter.

(2) Account for any fluid that bypasses the DEF dosing unit or returns from the dosing unit to the fluid storage tank.

(d) *Gravimetric scale.* Use a gravimetric scale to determine the mass of DEF the engine uses over a discrete-mode test interval and divide by the time of the test interval.

■ 325. Amend § 1065.260 by revising paragraph (e) to read as follows:

§ 1065.260 Flame-ionization detector.

* * * * *

(e) *NMHC and NMOG.* For demonstrating compliance with NMHC standards, you may either measure THC and determine NMHC mass as described in § 1065.660(b)(1), or you may measure THC and CH_4 and determine NMHC as described in § 1065.660(b)(2) or (3). You may also use the additive method in § 1065.660(b)(4) for natural gas-fueled engines as described in § 1065.266. See 40 CFR 1066.635 for methods to demonstrate compliance with NMOG standards for vehicle testing.

* * * * *

■ 326. Amend § 1065.266 by revising paragraphs (a) and (b) to read as follows:

§ 1065.266 Fourier transform infrared analyzer.

(a) *Application.* For engines that run only on natural gas, you may use a Fourier transform infrared (FTIR) analyzer to measure nonmethane hydrocarbon (NMHC) and nonmethane-nonethane hydrocarbon (NMNEHC) for continuous sampling. You may use an FTIR analyzer with any gaseous-fueled engine, including dual-fuel and flexible-fuel engines, to measure CH_4 and C_2H_6, for either batch or continuous sampling (for subtraction from THC).

(b) *Component requirements.* We recommend that you use an FTIR analyzer that meets the specifications in Table 1 of § 1065.205. Note that your FTIR-based system must meet the linearity verification in § 1065.307. Use appropriate analytical procedures for interpretation of infrared spectra. For example, EPA Test Method 320 (see *https://www.epa.gov/emc/method-320-vapor-phase-organic-and-inorganic-emissions-extractive-ftir*) and ASTM D6348 (incorporated by reference in § 1065.1010) are considered valid methods for spectral interpretation. You must use heated FTIR analyzers that maintain all surfaces that are exposed to emissions at a temperature of (110 to 202) °C.

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■ 327. Amend § 1065.275 by revising paragraph (b)(2) to read as follows:

§ 1065.275 N_2O measurement devices.

* * * * *

(b) * * *

(2) Fourier transform infrared (FTIR) analyzer. Use appropriate analytical procedures for interpretation of infrared spectra. For example, EPA Test Method 320 (see § 1065.266(b)) and ASTM D6348 (incorporated by reference in § 1065.1010) are considered valid methods for spectral interpretation.

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■ 328. Amend § 1065.280 by revising paragraph (a) to read as follows:

§ 1065.280 Paramagnetic and magnetopneumatic O_2 detection analyzers.

(a) *Application.* You may use a paramagnetic detection (PMD) or magnetopneumatic detection (MPD) analyzer to measure O_2 concentration in raw or diluted exhaust for batch or continuous sampling. You may use good engineering judgment to develop calculations that use O_2 measurements with a chemical balance of fuel, DEF, intake air, and exhaust to calculate exhaust flow rate.

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■ 329. Revise § 1065.303 to read as follows:

§ 1065.303 Summary of required calibration and verifications.

The following table summarizes the required and recommended calibrations and verifications described in this subpart and indicates when these have to be performed:

TABLE 1 OF § 1065.303—SUMMARY OF REQUIRED CALIBRATION AND VERIFICATIONS

Type of calibration or verification	Minimum frequency [a]
§ 1065.305: Accuracy, repeatability and noise	*Accuracy:* Not required, but recommended for initial installation. Repeatability: Not required, but recommended for initial installation. *Noise:* Not required, but recommended for initial installation.
§ 1065.307: Linearity verification.	*Speed:* Upon initial installation, within 370 days before testing and after major maintenance. *Torque:* Upon initial installation, within 370 days before testing and after major maintenance. *Electrical power, current, and voltage:* Upon initial installation, within 370 days before testing and after major maintenance.[b] *Fuel mass flow rate:* Upon initial installation, within 370 days before testing, and after major maintenance. *Fuel mass scale:* Upon initial installation, within 370 days before testing, and after major maintenance. *DEF mass flow rate:* Upon initial installation, within 370 days before testing, and after major maintenance.[c] *DEF mass scale:* Upon initial installation, within 370 days before testing, and after major maintenance. *Intake-air, dilution air, diluted exhaust, and batch sampler flow rates:* Upon initial installation, within 370 days before testing and after major maintenance.[d] *Raw exhaust flow rate:* Upon initial installation, within 185 days before testing and after major maintenance.[d] *Gas dividers:* Upon initial installation, within 370 days before testing, and after major maintenance. *Gas analyzers (unless otherwise noted):* Upon initial installation, within 35 days before testing and after major maintenance. *FTIR and photoacoustic analyzers:* Upon initial installation, within 370 days before testing and after major maintenance. *GC-ECD:* Upon initial installation and after major maintenance. *PM balance:* Upon initial installation, within 370 days before testing and after major maintenance. *Pressure, temperature, and dewpoint:* Upon initial installation, within 370 days before testing and after major maintenance.
§ 1065.308: Continuous gas analyzer system response and updating-recording verification—for gas analyzers not continuously compensated for other gas species.	Upon initial installation or after system modification that would affect response.
§ 1065.309: Continuous gas analyzer system-response and updating-recording verification—for gas analyzers continuously compensated for other gas species.	Upon initial installation or after system modification that would affect response.
§ 1065.310: Torque	Upon initial installation and after major maintenance.
§ 1065.315: Pressure, temperature, dewpoint	Upon initial installation and after major maintenance.
§ 1065.320: Fuel flow	Upon initial installation and after major maintenance.
§ 1065.325: Intake flow	Upon initial installation and after major maintenance.
§ 1065.330: Exhaust flow	Upon initial installation and after major maintenance.
§ 1065.340: Diluted exhaust flow (CVS)	Upon initial installation and after major maintenance.
§ 1065.341: CVS and PFD flow verification (propane check).	Upon initial installation, within 35 days before testing, and after major maintenance.[e]
§ 1065.342 Sample dryer verification	For thermal chillers: Upon installation and after major maintenance. For osmotic membranes; upon installation, within 35 days of testing, and after major maintenance.
§ 1065.345: Vacuum leak	For laboratory testing: Upon initial installation of the sampling system, within 8 hours before the start of the first test interval of each duty-cycle sequence, and after maintenance such as pre-filter changes. For field testing: After each installation of the sampling system on the vehicle, prior to the start of the field test, and after maintenance such as pre-filter changes.
§ 1065.350: CO_2 NDIR H_2O interference	Upon initial installation and after major maintenance.
§ 1065.355: CO NDIR CO_2 and H_2O interference	Upon initial installation and after major maintenance.
§ 1065.360: FID calibration THC FID optimization, and THC FID verification.	Calibrate all FID analyzers: upon initial installation and after major maintenance. Optimize and determine CH_4 response for THC FID analyzers: upon initial installation and after major maintenance. Verify CH_4 response for THC FID analyzers: upon initial installation, within 185 days before testing, and after major maintenance. Verify C_2H_6 response for THC FID analyzers if used for NMNEHC determination: upon initial installation, within 185 days before testing, and after major maintenance.
§ 1065.362: Raw exhaust FID O_2 interference	For all FID analyzers: upon initial installation, and after major maintenance. For THC FID analyzers: upon initial installation, after major maintenance, and after FID optimization according to § 1065.360.
§ 1065.365: Nonmethane cutter penetration	Upon initial installation, within 185 days before testing, and after major maintenance.
§ 1065.366: Interference verification for FTIR analyzers	Upon initial installation and after major maintenance.

TABLE 1 OF § 1065.303—SUMMARY OF REQUIRED CALIBRATION AND VERIFICATIONS—Continued

Type of calibration or verification	Minimum frequency [a]
§ 1065.369: H_2O, CO, and CO_2 interference verification for ethanol photoacoustic analyzers.	Upon initial installation and after major maintenance.
§ 1065.370: CLD CO_2 and H_2O quench	Upon initial installation and after major maintenance.
§ 1065.372: NDUV HC and H_2O interference	Upon initial installation and after major maintenance.
§ 1065.375: N_2O analyzer interference	Upon initial installation and after major maintenance.
§ 1065.376: Chiller NO_2 penetration	Upon initial installation and after major maintenance.
§ 1065.378: NO_2-to-NO converter conversion	Upon initial installation, within 35 days before testing, and after major maintenance.
§ 1065.390: PM balance and weighing	Independent verification: Upon initial installation, within 370 days before testing, and after major maintenance. Zero, span, and reference sample verifications: Within 12 hours of weighing, and after major maintenance.
§ 1065.395: Inertial PM balance and weighing	Independent verification: Upon initial installation, within 370 days before testing, and after major maintenance. Other verifications: Upon initial installation and after major maintenance.

[a] Perform calibrations and verifications more frequently than we specify, according to measurement system manufacturer instructions and good engineering judgment.
[b] Perform linearity verification either for electrical power or for current and voltage.
[c] Linearity verification is not required if DEF flow rate comes directly from the ECM signal as described in § 1065.247(b).
[d] Linearity verification is not required if the flow signal's accuracy is verified by carbon balance error verification as described in § 1065.307(e)(5) or a propane check as described in § 1065.341.
[e] CVS and PFD flow verification (propane check) is not required for measurement systems verified by linearity verification as described in § 1065.307 or carbon balance error verification as described in § 1065.341(h).

■ 330. Amend § 1065.307 by:
■ a. Revising paragraphs (c)(13), (d)(4), (d)(6)(i), (d)(7) and (9), and (e)(3) and (5).
■ b. Adding paragraphs (e)(7)(i)(F) and (G).
■ c. Designating table 1 to the section as paragraph (f) and revising newly designated paragraph (f).
■ d. Adding paragraph (g).

The revisions and additions read as follows:

§ 1065.307 Linearity verification.

* * * * *

(c) * * *

(13) Use the arithmetic means, $\bar{Y}_i$, and reference values, y_{refi}, to calculate least-squares linear regression parameters and statistical values to compare to the minimum performance criteria specified in Table 1 of this section. Use the calculations for a floating intercept described in § 1065.602. Using good engineering judgment, you may weight the results of individual data pairs (*i.e.,* (y_{refi}, $\bar{y}_i$)), in the linear regression calculations.

(d) * * *

(4) *Fuel and DEF mass flow rate.* Use a gravimetric reference measurement (such as a scale, balance, or mass comparator) and a container. Use a stopwatch or timer to measure the time intervals over which reference masses of fluid pass through the mass flow rate meter. Use good engineering judgment to correct the reference mass flowing through the mass flow rate meter for buoyancy effects from any tubes, temperature probes, or objects submerged in the fluid in the container that are not attached to the container. If the container has any tubes or wires connected to the container, recalibrate the gravimetric reference measurement device with them connected and at normal operating pressure using calibration weights that meet the requirements in § 1065.790. The corrected reference mass that flowed through the mass flow rate meter during a time interval divided by the duration of the time interval is the average reference mass flow rate. For meters that report a different quantity (such as actual volume, standard volume, or moles), convert the reported quantity to mass. For meters that report a cumulative quantity calculate the average measured mass flow rate as the difference in the reported cumulative mass during the time interval divided by the duration of the time interval. For measuring flow rate of gaseous fuel prevent condensation on the fuel container and any attached tubes, fittings, or regulators.

* * * * *

(6) * * *

(i) At the outlet of the gas-division system, connect a gas analyzer that meets the linearity verification described in this section and has not been linearized with the gas divider being verified. For example, verify the linearity of an analyzer using a series of reference analytical gases directly from compressed gas cylinders that meet the specifications of § 1065.750. We recommend using a FID analyzer or a PMD or MPD O_2 analyzer because of their inherent linearity. Operate this analyzer consistent with how you would operate it during an emission test. Connect a span gas containing only a single constituent of interest with balance of purified air or purified N_2 to the gas-divider inlet. Use the gas-division system to divide the span gas with purified air or nitrogen. Select gas divisions that you typically use. Use a selected gas division as the measured value. Use the analyzer response divided by the span gas concentration as the reference gas-division value. Because the instrument response is not absolutely constant, sample and record values of x_{refi} for 30 seconds and use the arithmetic mean of the values, $\bar{x}_{ref}$, as the reference value. Refer to § 1065.602 for an example of calculating arithmetic mean.

* * * * *

(7) *Continuous constituent concentration.* For reference values, use a series of gas cylinders of known gas concentration containing only a single constituent of interest with balance of purified air or purified N_2 or use a gas-division system that is known to be linear with a span gas. Gas cylinders, gas-division systems, and span gases that you use for reference values must meet the specifications of § 1065.750.

* * * * *

(9) *Mass.* For linearity verification for gravimetric PM balances, fuel mass scales, and DEF mass scales, use external calibration weights that meet the requirements in § 1065.790. Perform the linearity verification for fuel mass scales and DEF mass scales with the in-use container, installing all objects that interface with the container. For example, this includes all tubes, temperature probes, and objects submerged in the fluid in the container; it also includes tubes, fittings, regulators, and wires, and any other

objects attached to the container. We recommend that you develop and apply appropriate buoyancy corrections for the configuration of your mass scale during normal testing, consistent with good engineering judgment. Account for the scale weighing a calibration weight instead of fluid if you calculate buoyancy corrections. You may also correct for the effect of natural convection currents from temperature differences between the container and ambient air. Prepare for linearity verification by taking the following steps for vented and unvented containers:

(i) If the container is vented to ambient, fill the container and tubes with fluid above the minimum level used to trigger a fill operation; drain the fluid down to the minimum level; tare the scale; and perform the linearity verification.

(ii) If the container is rigid and not vented, drain the fluid down to the minimum level; fill all tubes attached to the container to normal operating pressure; tare the scale; and perform the linearity verification.

(e) * * *

(3) The expression ''max'' generally refers to the absolute value of the reference value used during linearity verification that is furthest from zero. This is the value used to scale the first and third tolerances in Table 1 of this section using a_0 and *SEE*. For example, if the reference values chosen to validate a pressure transducer vary from −10 to −1 kPa, then p_{max} is +10 kPa. If the reference values used to validate a temperature device vary from 290 to 390 K, then T_{max} is 390 K. For gas dividers where ''max'' is expressed as, x_{max}/x_{span}; x_{max} is the maximum gas concentration used during the verification, x_{span} is the undivided, undiluted, span gas concentration, and the resulting ratio is the maximum divider point reference value used during the verification (typically 1). The following are special cases where ''max'' refers to a different value:

(i) For linearity verification of a PM balance, m_{max} is the typical mass of a PM filter.

(ii) For linearity verification of a torque measurement system used with the engine's primary output shaft, T_{max} is the manufacturer's specified peak torque of the lowest torque engine expected during testing.

(iii) For linearity verification of a fuel mass scale, m_{max} is determined based on the range of engines and test interval durations expected during testing. It is the minimum, over all engines expected during testing, of the fuel consumption expected over the minimum test interval duration at the engine's maximum fuel rate. If the minimum test interval duration used during testing does not change with engine power or if the minimum test interval duration used during testing increases with engine power, m_{max} is given by Eq. 1065.307–1. Calculate m_{max} using the following equation:

$$m_{\text{max,fuel scale}} = \dot{m}_{\text{max,fuel}} \cdot t_{\text{min}}$$

Eq. 1065.307-1

Where:

$\dot{m}_{max,fuel}$ = the manufacturer's specified maximum fuel rate on the lowest-power engine expected during testing.

t_{min} = the minimum test interval duration expected during testing. If the minimum test interval duration decreases with engine power, evaluate Eq. 1065.307–1 for the range of engines expected during testing and use the minimum calculated value of $m_{max,fuel\ scale}$.

(iv) For linearity verification of a DEF mass scale, m_{max} is 10% of the value determined for a fuel mass scale in paragraph (e)(3)(iii) of this section. You may determine m_{max} for a DEF mass scale by evaluating m_{max} for a fuel mass scale based only on the DEF-using engines expected during testing.

(v) For linearity verification of a fuel flow rate meter, m_{max} is the manufacturer's specified maximum fuel rate of the lowest-power engine expected during testing.

(vi) For linearity verification of a DEF flow rate meter, m_{max} is 10% of the manufacturer's specified maximum fuel rate of the lowest-power DEF-using engine expected during testing.

(vii) For linearity verification of an intake-air flow rate meter, $\dot{n}_{max}$ is the manufacturer's specified maximum intake-air flow rate (converted to molar flow rate) of the lowest-power engine expected during testing.

(viii) For linearity verification of a raw exhaust flow rate meter, $\dot{n}_{max}$ is the manufacturer's specified maximum exhaust flow rate (converted to molar flow rate) of the lowest-power engine expected during testing.

(ix) For linearity verification of an electrical-power measurement system used to determine the engine's primary output shaft torque, P_{max} is the manufacturer's specified maximum power of the lowest-power engine expected during testing.

(x) For linearity verification of an electrical-current measurement system used to determine the engine's primary output shaft torque, I_{max} is the maximum current expected on the lowest-power engine expected during testing.

(xi) For linearity verification of an electrical-voltage measurement system used to determine the engine's primary output shaft torque, V_{max} is the minimum peak voltage expected on the range of engines expected during testing.

* * * * *

(5) Table 2 of this section describes optional verification procedures you may perform instead of linearity verification for certain systems. The following provisions apply for the alternative verification procedures:

(i) Perform the propane check verification described in § 1065.341 at the frequency specified in Table 1 of § 1065.303.

(ii) Perform the carbon balance error verification described in § 1065.543 on all test sequences that use the corresponding system. It must also meet the restrictions listed in Table 2 of this section. You may evaluate the carbon balance error verification multiple ways with different inputs to validate multiple flow-measurement systems.

* * * * *

(7) * * *

(i) * * *

(F) Transmission oil.

(G) Axle gear oil.

* * * * *

(f) *Performance criteria for measurement systems.* Table 1 follows:

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TABLE 1 OF §1065.307–MEASUREMENT SYSTEMS THAT REQUIRE LINEARITY VERIFICATION

Measurement system	Quantity	Linearity criteria			
		$\lvert x_{min}(a_1-1)+a_0 \rvert$	a_1	*SEE*	r^2
Speed	f_n	$\leq 0.05\ \% \cdot f_{nmax}$	0.98-1.02	$\leq 2\ \% \cdot f_{nmax}$	≥ 0.990
Torque	T	$\leq 1\ \% \cdot T_{max}$	0.98-1.02	$\leq 2\ \% \cdot T_{max}$	≥ 0.990
Electrical power	P	$\leq 1\ \% \cdot P_{max}$	0.98-1.02	$\leq 2\ \% \cdot P_{max}$	≥ 0.990
Current	I	$\leq 1\ \% \cdot I_{max}$	0.98-1.02	$\leq 2\ \% \cdot I_{max}$	≥ 0.990
Voltage	U	$\leq 1\ \% \cdot U_{max}$	0.98-1.02	$\leq 2\ \% \cdot U_{max}$	≥ 0.990
Fuel flow rate	$\dot{m}$	$\leq 1\ \% \cdot \dot{m}_{max}$	0.98-1.02	$\leq 2\ \% \cdot \dot{m}_{max}$	≥ 0.990
Fuel mass scale	m	$\leq 0.3\ \% \cdot m_{max}$	0.996-1.004	$\leq 0.4\ \% \cdot m_{max}$	≥ 0.999
DEF flow rate	$\dot{m}$	$\leq 1\ \% \cdot \dot{m}_{max}$	0.98-1.02	$\leq 2\ \% \cdot \dot{m}_{max}$	≥ 0.990
DEF mass scale	m	$\leq 0.3\ \% \cdot m_{max}$	0.996-1.004	$\leq 0.4\ \% \cdot m_{max}$	≥ 0.999
Intake-air flow rate[a]	$\dot{n}$	$\leq 1\ \% \cdot \dot{n}_{max}$	0.98-1.02	$\leq 2\ \% \cdot \dot{n}_{max}$	≥ 0.990
Dilution air flow rate[a]	$\dot{n}$	$\leq 1\ \% \cdot \dot{n}_{max}$	0.98-1.02	$\leq 2\ \% \cdot \dot{n}_{max}$	≥ 0.990
Diluted exhaust flow rate[a]	$\dot{n}$	$\leq 1\ \% \cdot \dot{n}_{max}$	0.98-1.02	$\leq 2\ \% \cdot \dot{n}_{max}$	≥ 0.990
Raw exhaust flow rate[a]	$\dot{n}$	$\leq 1\ \% \cdot \dot{n}_{max}$	0.98-1.02	$\leq 2\ \% \cdot \dot{n}_{max}$	≥ 0.990
Batch sampler flow rates[a]	$\dot{n}$	$\leq 1\ \% \cdot \dot{n}_{max}$	0.98-1.02	$\leq 2\ \% \cdot \dot{n}_{max}$	≥ 0.990
Gas dividers	x/x_{span}	$\leq 0.5\ \% \cdot x_{max}/x_{span}$	0.98-1.02	$\leq 2\ \% \cdot x_{max}/x_{span}$	≥ 0.990
Gas analyzers for laboratory testing	x	$\leq 0.5\ \% \cdot x_{max}$	0.99-1.01	$\leq 1\ \% \cdot x_{max}$	≥ 0.998
Gas analyzers for field testing	x	$\leq 1\ \% \cdot x_{max}$	0.99-1.01	$\leq 1\ \% \cdot x_{max}$	≥ 0.998
PM balance	m	$\leq 1\ \% \cdot m_{max}$	0.99-1.01	$\leq 1\ \% \cdot m_{max}$	≥ 0.998
Pressures	p	$\leq 1\ \% \cdot p_{max}$	0.99-1.01	$\leq 1\ \% \cdot p_{max}$	≥ 0.998
Dewpoint for intake air, PM-stabilization and balance environments	T_{dew}	$\leq 0.5\ \% \cdot T_{dewmax}$	0.99-1.01	$\leq 0.5\ \% \cdot T_{dewmax}$	≥ 0.998
Other dewpoint measurements	T_{dew}	$\leq 1\ \% \cdot T_{dewmax}$	0.99-1.01	$\leq 1\ \% \cdot T_{dewmax}$	≥ 0.998
Analog-to-digital conversion of temperature signals	T	$\leq 1\ \% \cdot T_{max}$	0.99-1.01	$\leq 1\ \% \cdot T_{max}$	≥ 0.998

[a]For flow meters that determine volumetric flow rate, $\dot{V}_{std}$, you may substitute $\dot{V}_{std}$ for $\dot{n}$ as the quantity and substitute $\dot{V}_{stdmax}$ for $\dot{n}_{max}$.

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(g) *Alternative verification procedures.* Table 2 follows:

TABLE 2 OF § 1065.307—OPTIONAL VERIFICATION TO LINEARITY VERIFICATION

Measurement system	§ 1065.341	§ 1065.543	Restrictions for § 1065.543
Intake-air flow rate	Yes	Yes	Determine raw exhaust flow rate using the intake-air flow rate signal as an input into Eq. 1065.655–24 and determine mass of CO_2 over each test interval input into Eq. 1065.643–6 using samples taken from the raw exhaust (continuous or bag, and with or without a PFD).
Dilution air flow rate for CVS	Yes	No	Not allowed.
Diluted exhaust flow rate for CVS	Yes	Yes	Determine mass of CO_2 over each test interval input into Eq. 1065.643–6 using samples taken from the CVS (continuous or bag, and with or without a PFD).
Raw exhaust flow rate for exhaust stack	Yes	Yes	Determine mass of CO_2 over each test interval input into Eq. 1065.643–6 using samples taken from the raw exhaust (continuous or bag, and with or without a PFD).

TABLE 2 OF § 1065.307—OPTIONAL VERIFICATION TO LINEARITY VERIFICATION—Continued

Measurement system	§ 1065.341	§ 1065.543	Restrictions for § 1065.543
Flow measurements in a PFD (usually dilution air and diluted exhaust streams) used to determine the dilution ratio in the PFD.	Yes	Yes	Determine mass of CO_2 over each test interval input into Eq. 1065.643–6 using samples taken from the PFD (continuous or bag).
Batch sampler flow rates	Yes	No	Not allowed.
Fuel mass flow rate	No	Yes	Determine mass of a carbon-carrying fluid stream used as an input into Eq. 1065.643–1 using the fuel mass flow rate meter.
Fuel mass scale	No	Yes	Determine mass of a carbon-carrying fluid stream used as an input into Eq. 1065.643–1 using the fuel mass scale.

■ 331. Amend § 1065.309 by revising paragraph (d)(2) to read as follows:

§ 1065.309 Continuous gas analyzer system-response and updating-recording verification—for gas analyzers continuously compensated for other gas species.

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(d) * * *

(2) Equipment setup. We recommend using minimal lengths of gas transfer lines between all connections and fast-acting three-way valves (2 inlets, 1 outlet) to control the flow of zero and blended span gases to the sample system's probe inlet or a tee near the outlet of the probe. If you inject the gas at a tee near the outlet of the probe, you may correct the transformation time, t_{50}, for an estimate of the transport time from the probe inlet to the tee. Normally the gas flow rate is higher than the sample flow rate and the excess is overflowed out the inlet of the probe. If the gas flow rate is lower than the sample flow rate, the gas concentrations must be adjusted to account for the dilution from ambient air drawn into the probe. We recommend you use the final, stabilized analyzer reading as the final gas concentration. Select span gases for the species being continuously combined, other than H_2O. Select concentrations of compensating species that will yield concentrations of these species at the analyzer inlet that covers the range of concentrations expected during testing. You may use binary or multi-gas span gases. You may use a gas blending or mixing device to blend span gases. A gas blending or mixing device is recommended when blending span gases diluted in N_2 with span gases diluted in air. You may use a multi-gas span gas, such as NO-CO-CO_2-C_3H_8-CH_4, to verify multiple analyzers at the same time. In designing your experimental setup, avoid pressure pulsations due to stopping the flow through the gas blending device. The change in gas concentration must be at least 20% of the analyzer's range. If H_2O correction is applicable, then span gases must be humidified before entering the analyzer; however, you may not humidify NO_2 span gas by passing it through a sealed humidification vessel that contains H_2O. You must humidify NO_2 span gas with another moist gas stream. We recommend humidifying your NO-CO-CO_2-C_3H_8-CH_4, balance N_2, blended gas by bubbling the gas mixture that meets the specifications in § 1065.750 through distilled H_2O in a sealed vessel and then mixing the gas with dry NO_2 gas, balance purified air, or by using a device that introduces distilled H_2O as vapor into a controlled span gas flow. If the sample does not pass through a dryer during emission testing, humidify your span gas to an H_2O level at or above the maximum expected during emission testing. If the sample passes through a dryer during emission testing, it must pass the sample dryer verification check in § 1065.342, and you must humidify your span gas to an H_2O level at or above the level determined in § 1065.145(e)(2) for that dryer. If you are humidifying span gases without NO_2, use good engineering judgment to ensure that the wall temperatures in the transfer lines, fittings, and valves from the humidifying system to the probe are above the dewpoint required for the target H_2O content. If you are humidifying span gases with NO_2, use good engineering judgment to ensure that there is no condensation in the transfer lines, fittings, or valves from the point where humidified gas is mixed with NO_2 span gas to the probe. We recommend that you design your setup so that the wall temperatures in the transfer lines, fittings, and valves from the humidifying system to the probe are at least 5 °C above the local sample gas dewpoint. Operate the measurement and sample handling system as you do for emission testing. Make no modifications to the sample handling system to reduce the risk of condensation. Flow humidified gas through the sampling system before this check to allow stabilization of the measurement system's sampling handling system to occur, as it would for an emission test.

* * * * *

§ 1065.320 [Amended]

■ 332. Amend § 1065.320 by removing and reserving paragraph (b).

■ 333. Revise § 1065.341 to read as follows:

§ 1065.341 CVS and PFD flow verification (propane check).

This section describes two optional methods, using propane as a tracer gas, to verify CVS and PFD flow streams. You may use good engineering judgment and safe practices to use other tracer gases, such as CO_2 or CO. The first method, described in paragraphs (a) through (e) of this section, applies for the CVS diluted exhaust flow measurement system. The first method may also apply for other single-flow measurement systems as described in Table 2 of § 1065.307. Paragraph (g) of this section describes a second method you may use to verify flow measurements in a PFD for determining the PFD dilution ratio.

(a) A propane check uses either a reference mass or a reference flow rate of C_3H_8 as a tracer gas in a CVS. Note that if you use a reference flow rate, account for any non-ideal gas behavior of C_3H_8 in the reference flow meter. Refer to §§ 1065.640 and 1065.642, which describe how to calibrate and use certain flow meters. Do not use any ideal gas assumptions in §§ 1065.640 and 1065.642. The propane check compares the calculated mass of injected C_3H_8 using HC measurements and CVS flow rate measurements with the reference value.

(b) Prepare for the propane check as follows:

(1) If you use a reference mass of C_3H_8 instead of a reference flow rate, obtain a cylinder charged with C_3H_8. Determine the reference cylinder's mass of C_3H_8 within ±0.5% of the amount of C_3H_8 that you expect to use. You may substitute a C_3H_8 analytical gas mixture

(i.e., a prediluted tracer gas) for pure C_3H_8. This would be most appropriate for lower flow rates. The analytical gas mixture must meet the specifications in § 1065.750(a)(3).

(2) Select appropriate flow rates for the CVS and C_3H_8.

(3) Select a C_3H_8 injection port in the CVS. Select the port location to be as close as practical to the location where you introduce engine exhaust into the CVS, or at some point in the laboratory exhaust tubing upstream of this location. Connect the C_3H_8 cylinder to the injection system.

(4) Operate and stabilize the CVS.

(5) Preheat or pre-cool any heat exchangers in the sampling system.

(6) Allow heated and cooled components such as sample lines, filters, chillers, and pumps to stabilize at operating temperature.

(7) You may purge the HC sampling system during stabilization.

(8) If applicable, perform a vacuum side leak verification of the HC sampling system as described in § 1065.345.

(9) You may also conduct any other calibrations or verifications on equipment or analyzers.

(c) If you performed the vacuum-side leak verification of the HC sampling system as described in paragraph (b)(8) of this section, you may use the HC contamination procedure in § 1065.520(f) to verify HC contamination. Otherwise, zero, span, and verify contamination of the HC sampling system, as follows:

(1) Select the lowest HC analyzer range that can measure the C_3H_8 concentration expected for the CVS and C_3H_8 flow rates.

(2) Zero the HC analyzer using zero air introduced at the analyzer port.

(3) Span the HC analyzer using C_3H_8 span gas introduced at the analyzer port.

(4) Overflow zero air at the HC probe inlet or into a tee near the outlet of the probe.

(5) Measure the stable HC concentration of the HC sampling system as overflow zero air flows. For batch HC measurement, fill the batch container (such as a bag) and measure the HC overflow concentration.

(6) If the overflow HC concentration exceeds 2 μmol/mol, do not proceed until contamination is eliminated. Determine the source of the contamination and take corrective action, such as cleaning the system or replacing contaminated portions.

(7) When the overflow HC concentration does not exceed 2 μmol/mol, record this value as $x_{THCinit}$ and use it to correct for HC contamination as described in § 1065.660.

(d) Perform the propane check as follows:

(1) For batch HC sampling, connect clean storage media, such as evacuated bags.

(2) Operate HC measurement instruments according to the instrument manufacturer's instructions.

(3) If you will correct for dilution air background concentrations of HC, measure and record background HC in the dilution air.

(4) Zero any integrating devices.

(5) Begin sampling, and start any flow integrators.

(6) Release the contents of the C_3H_8 reference cylinder at the rate you selected. If you use a reference flow rate of C_3H_8, start integrating this flow rate.

(7) Continue to release the cylinder's contents until at least enough C_3H_8 has been released to ensure accurate quantification of the reference C_3H_8 and the measured C_3H_8.

(8) Shut off the C_3H_8 reference cylinder and continue sampling until you have accounted for time delays due to sample transport and analyzer response.

(9) Stop sampling and stop any integrators.

(e) Perform post-test procedure as follows:

(1) If you used batch sampling, analyze batch samples as soon as practical.

(2) After analyzing HC, correct for contamination and background.

(3) Calculate total C_3H_8 mass based on your CVS and HC data as described in § 1065.650 (40 CFR 1066.605 for vehicle testing) and § 1065.660, using the molar mass of C_3H_8, M_{C3H8}, instead the effective molar mass of HC, M_{HC}.

(4) If you use a reference mass, determine the cylinder's propane mass within ±0.5% and determine the C_3H_8 reference mass by subtracting the empty cylinder propane mass from the full cylinder propane mass.

(5) Subtract the reference C_3H_8 mass from the calculated mass. If this difference is within ±2% of the reference mass, the CVS passes this verification. If not, take corrective action as described in paragraph (f) of this section.

(f) A failed propane check might indicate one or more problems requiring corrective action, as follows:

TABLE 1 OF § 1065.341—TROUBLESHOOTING GUIDE FOR PROPANE CHECKS

Problem	Recommended corrective action
Incorrect analyzer calibration	Recalibrate, repair, or replace the FID analyzer.
Leaks	Inspect CVS tunnel, connections, fasteners, and HC sampling system. Repair or replace components.
Poor mixing	Perform the verification as described in this section while traversing a sampling probe across the tunnel's diameter, vertically and horizontally. If the analyzer response indicates any deviation exceeding ±2% of the mean measured concentration, consider operating the CVS at a higher flow rate or installing a mixing plate or orifice to improve mixing.
Hydrocarbon contamination in the sample system.	Perform the hydrocarbon-contamination verification as described in § 1065.520.
Change in CVS calibration	Perform a calibration of the CVS flow meter as described in § 1065.340.
Flow meter entrance effects	Inspect the CVS tunnel to determine whether the entrance effects from the piping configuration upstream of the flow meter adversely affect the flow measurement.
Other problems with the CVS or sampling verification hardware or software.	Inspect the CVS system and related verification hardware, and software for discrepancies.

(g) You may verify flow measurements in a PFD (usually dilution air and diluted exhaust streams) for determining the dilution ratio in the PFD using the following method:

(1) Configure the HC sampling system to extract a sample from the PFD's diluted exhaust stream (such as near a PM filter). If the absolute pressure at this location is too low to extract an HC sample, you may sample HC from the PFD's pump exhaust. Use caution when sampling from pump exhaust because

an otherwise acceptable pump leak downstream of a PFD diluted exhaust flow meter will cause a false failure of the propane check.

(2) Perform the propane check described in paragraphs (b), (c), and (d) of this section, but sample HC from the PFD's diluted exhaust stream. Inject the propane in the same exhaust stream that the PFD is sampling from (either CVS or raw exhaust stack).

(3) Calculate C_3H_8 mass, taking into account the dilution from the PFD.

(4) Subtract the reference C_3H_8 mass from the calculated mass. If this difference is within ±2% of the reference mass, all PFD flow measurements for determining PFD dilution ratio pass this verification. If not, take corrective action as described in paragraph (f) of this section. For PFDs sampling only for PM, the allowed difference is ±5%.

(h) Table 2 of § 1065.307 describes optional verification procedures you may perform instead of linearity verification for certain flow-measurement systems. Performing carbon balance error verification also replaces any required propane checks.

■ 334. Amend § 1065.342 by revising paragraph (d)(2) to read as follows:

§ 1065.342 Sample dryer verification.

* * * * *

(d) * * *

(2) Humidify room air, purified N_2, or purified air by bubbling it through distilled H_2O in a sealed vessel or use a device that injects distilled H_2O as vapor into a controlled gas flow to humidify the gas to the highest sample H_2O content that you estimate during emission sampling.

* * * * *

■ 335. Amend § 1065.350 by revising paragraph (d)(2) to read as follows:

§ 1065.350 H_2O interference verification for CO_2O NDIR analyzers.

* * * * *

(d) * * *

(2) Create a humidified test gas by bubbling zero gas that meets the specifications in § 1065.750 through distilled H_2O in a sealed vessel or use a device that introduces distilled H_2O as vapor into a controlled gas flow. If the sample does not pass through a dryer during emission testing, humidify your test gas to an H_2O level at or above the maximum expected during emission testing. If the sample passes through a dryer during emission testing, you must humidify your test gas to an H_2O level at or above the level determined in § 1065.145(e)(2) for that dryer.

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■ 336. Amend § 1065.355 by revising paragraph (d)(2) to read as follows:

§ 1065.355 H_2O and CO_2O interference verification for CO NDIR analyzers.

* * * * *

(d) * * *

(2) Create a humidified CO_2O test gas by bubbling a CO_2O span gas that meets the specifications in § 1065.750 through distilled H_2O in a sealed vessel or use a device that introduces distilled H_2O as vapor into a controlled gas flow. If the sample does not pass through a dryer during emission testing, humidify your test gas to an H_2O level at or above the maximum expected during emission testing. If the sample passes through a dryer during emission testing, you must humidify your test gas to an H_2O at or above the level determined in § 1065.145(e)(2) for that dryer. Use a CO_2O span gas concentration at least as high as the maximum expected during testing.

* * * * *

■ 337. Amend § 1065.360 by adding paragraphs (a)(4) and (d)(12) to read as follows:

§ 1065.360 FID optimization and verification.

(a) * * *

(4) For any gaseous-fueled engine, including dual-fuel and flexible-fuel engines, you may determine the methane (CH_4) and ethane (C_2H_6) response factors as a function of the molar water concentration in the raw or diluted exhaust. If you choose the option in this paragraph (a)(4), generate and verify the humidity level (or fraction) as described in § 1065.365(d)(11).

* * * * *

(d) * * *

(12) Determine the response factor as a function of molar water concentration and use this response factor to account for the CH_4 response for NMHC determination described in § 1065.660(b)(2)(iii). Humidify the CH_4 span gas as described in § 1065.365(d)(11) and repeat the steps in paragraphs (d)(7) through (9) of this section until measurements are complete for each setpoint in the selected range. Divide each mean measured CH_4 concentration by the recorded span concentration of the CH4 calibration gas, adjusted for water content, to determine the FID analyzer's CH_4 response factor, $RF_{CH4[THC-FID]}$. Use the CH_4 response factors at the different setpoints to create a functional relationship between response factor and molar water concentration, downstream of the last sample dryer if any sample dryers are present. Use this functional relationship to determine the response factor during an emission test.

* * * * *

■ 338. Amend § 1065.365 by revising paragraphs (a), (d), and (f)(9) and (14) to read as follows:

§ 1065.365 Nonmethane cutter penetration fractions.

(a) *Scope and frequency.* If you use a FID analyzer and a nonmethane cutter (NMC) to measure methane (CH_4), determine the nonmethane cutter's penetration fractions of methane, PF_{CH4}, and ethane, PF_{C2H6}. As detailed in this section, these penetration fractions may be determined as a combination of NMC penetration fractions and FID analyzer response factors, depending on your particular NMC and FID analyzer configuration. Perform this verification after installing the nonmethane cutter. Repeat this verification within 185 days of testing to verify that the catalytic activity of the cutter has not deteriorated. Note that because nonmethane cutters can deteriorate rapidly and without warning if they are operated outside of certain ranges of gas concentrations and outside of certain temperature ranges, good engineering judgment may dictate that you determine a nonmethane cutter's penetration fractions more frequently.

* * * * *

(d) Procedure for a FID calibrated with the NMC. The method described in this paragraph (d) is recommended over the procedures specified in paragraphs (e) and (f) of this section and required for any gaseous-fueled engine, including dual-fuel and flexible-fuel engines. If your FID arrangement is such that a FID is always calibrated to measure CH_4 with the NMC, then span that FID with the NMC using a CH_4 span gas, set the product of that FID's CH_4 response factor and CH_4 penetration fraction, $RFPF_{CH4[NMC-FID]}$, equal to 1.0 for all emission calculations, and determine its combined C_2H_6 response factor and C_2H_6 penetration fraction, $RFPF_{C2H6[NMC-FID]}$, as follows. For any gaseous-fueled engine, including dual-fuel and flexible-fuel engines, you must determine the CH_4 penetration fraction, $PF_{CH4[NMC-FID]}$, and C_2H_6 response factor and C_2H_6 penetration fraction, $RFPF_{C2H6[NMC-FID]}$, as a function of the molar water concentration in the raw or diluted exhaust as described in paragraphs (d)(10) and (12) of this section. Generate and verify the humidity generation as described in paragraph (d)(11) of this section. When using the option in this paragraph (d), note that the FID's CH_4 penetration fraction, $PF_{CH4[NMC-FID]}$, is set equal to

1.0 only for 0% molar water concentration. You are not required to meet the recommended lower limit for PF_{CH4} of greater than 0.85 for any of the penetration fractions generated as a function of molar water concentration.

(1) Select CH_4 and C_2H_6 analytical gas mixtures and ensure that both mixtures meet the specifications of § 1065.750. Select a CH_4 concentration that you would use for spanning the FID during emission testing and select a C_2H_6 concentration that is typical of the peak NMHC concentration expected at the hydrocarbon standard or equal to the THC analyzer's span value. For CH_4 analyzers with multiple ranges, perform this procedure on the highest range used for emission testing.

(2) Start, operate, and optimize the nonmethane cutter according to the manufacturer's instructions, including any temperature optimization.

(3) Confirm that the FID analyzer meets all the specifications of § 1065.360.

(4) Start and operate the FID analyzer according to the manufacturer's instructions.

(5) Zero and span the FID with the nonmethane cutter as you would during emission testing. Span the FID through the cutter by using CH_4 span gas.

(6) Introduce the C_2H_6 analytical gas mixture upstream of the nonmethane cutter. Use good engineering judgment to address the effect of hydrocarbon contamination if your point of introduction is vastly different from the point of zero/span gas introduction.

(7) Allow time for the analyzer response to stabilize. Stabilization time may include time to purge the nonmethane cutter and to account for the analyzer's response.

(8) While the analyzer measures a stable concentration, record 30 seconds of sampled data. Calculate the arithmetic mean of these data points.

(9) Divide the mean C_2H_6 concentration by the reference concentration of C_2H_6, converted to a C_1 basis. The result is the C_2H_6 combined response factor and penetration fraction, $RFPF_{C2H6[NMC–FID]}$. Use the CH_4 response factors at the different setpoints to create a functional relatFID]. Use this combined C_2H_6 response factor and C_2H_6 penetration fraction and the product of the CH_4 response factor and CH_4 penetration fraction, $RFPF_{CH4[NMC–FID]}$. Use the CH_4 response factors at the different setpoints to create a functional relatFID], set to 1.0 in emission calculations according to § 1065.660(b)(2)(i) or (d)(1)(i) or § 1065.665, as applicable.

(10) Determine the combined C_2H_6 response factor and C_2H_6 penetration fraction as a function of molar water concentration and use it to account for C_2H_6 response factor and C_2H_6 penetration fraction for NMHC determination as described in § 1065.660(b)(2)(iii) and for CH_4 determination in § 1065.660(d)(1)(iii). Humidify the C_2H_6 analytical gas mixture as described in paragraph (d)(11) of this section. Repeat the steps in paragraphs (d)(6) through (8) of this section until measurements are complete for each setpoint in the selected range. Divide each mean measured C_2H_6 concentration by the reference concentration of C_2H_6, converted to a C_1-basis and adjusted for water content to determine the FID analyzer's combined C_2H_6 response factor and C_2H_6 penetration fraction, $RFPF_{C2H6[NMC–FID]}$. Use the CH_4 response factors at the different setpoints to create a functional relatFID]. Use $RFPF_{C2H6[NMC–FID]}$. Use the CH_4 response factors at the different setpoints to create a functional relatFID] at the different setpoints to create a functional relationship between the combined response factor and penetration fraction and molar water concentration, downstream of the last sample dryer if any sample dryers are present. Use this functional relationship to determine the combined response factor and penetration fraction during the emission test.

(11) Create a humidified test gas by bubbling the analytical gas mixture that meets the specifications in § 1065.750 through distilled H_2O in a sealed vessel or use a device that introduces distilled H_2O as vapor into a controlled gas flow. If the sample does not pass through a dryer during emission testing, generate at least five different H_2O concentrations that cover the range from less than the minimum expected to greater than the maximum expected water concentration during testing. Use good engineering judgment to determine the target concentrations. For analyzers where the sample passes through a dryer during emission testing, humidify your test gas to an H_2O level at or above the level determined in § 1065.145(e)(2) for that dryer and determine a single wet analyzer response to the dehumidified sample. Heat all transfer lines from the water generation system to a temperature at least 5 °C higher than the highest dewpoint generated. Determine H_2O concentration as an average value over intervals of at least 30 seconds. Monitor the humidified sample stream with a dewpoint analyzer, relative humidity sensor, FTIR, NDIR, or other water analyzer during each test or, if the humidity generator achieves humidity levels with controlled flow rates, validate the instrument within 370 days before testing and after major maintenance using one of the following methods:

(i) Determine the linearity of each flow metering device. Use one or more reference flow meters to measure the humidity generator's flow rates and verify the H_2O level value based on the humidity generator manufacturer's recommendations and good engineering judgment. We recommend that you utilize at least 10 flow rates for each flow-metering device.

(ii) Perform validation testing based on monitoring the humidified stream with a dewpoint analyzer, relative humidity sensor, FTIR, NDIR, or other water analyzer as described in this paragraph (d)(11). Compare the measured humidity to the humidity generator's value. Verify overall linearity performance for the generated humidity as described in § 1065.307 using the criteria for other dewpoint measurements or confirm all measured values are within ±2% of the target mole fraction. In the case of dry gas, the measured value may not exceed 0.002 mole fraction.

(iii) Follow the performance requirements in § 1065.307(b) if the humidity generator does not meet validation criteria.

(12) Determine the CH_4 penetration fraction as a function of molar water concentration and use this penetration fraction for NMHC determination in § 1065.660(b)(2)(iii) and for CH_4 determination in § 1065.660(d)(1)(iii). Repeat the steps in paragraphs (d)(6) through (11) of this section, but with the CH_4 analytical gas mixture instead of C_2H_6. Use this functional relationship to determine the penetration fraction during the emission test.

* * * * *

(f) * * *

(9) Divide the mean C_2H_6 concentration by the reference concentration of C_2H_6, converted to a C_1 basis. The result is the combined C_2H_6 response factor and C_2H_6 penetration fraction, $RFPF_{C2H6[NMC-FID]}$. Use this combined C_2H_6 response factor and C_2H_6 penetration fraction according to § 1065.660(b)(2)(iii) or (d)(1)(iii) or § 1065.665, as applicable.

* * * * *

(14) Divide the mean CH_4 concentration measured through the nonmethane cutter by the mean CH_4 concentration measured after bypassing the nonmethane cutter. The result is the CH_4 penetration fraction, $PF_{CH4[NMC-FID]}$.

Use this CH_4 penetration fraction according to § 1065.660(b)(2)(iii) or (d)(1)(iii) or § 1065.665, as applicable.

■ 339. Amend § 1065.370 by revising paragraph (e)(5) to read as follows:

§ 1065.370 CLD CO2 and H_2O quench verification.

* * * * *

(e) * * *

(5) Create a humidified NO span gas by bubbling a NO gas that meets the specifications in § 1065.750 through distilled H_2O in a sealed vessel or use a device that introduces distilled H_2O as vapor into a controlled gas flow. If the sample does not pass through a dryer during emission testing, humidify your test gas to an H_2O level approximately equal to the maximum mole fraction of H_2O expected during emission testing. If the humidified NO span gas sample does not pass through a sample dryer, the quench verification calculations in § 1065.675 scale the measured H_2O quench to the highest mole fraction of H_2O expected during emission testing. If the sample passes through a dryer during emission testing, you must humidify your test gas to an H_2O level at or above the level determined in § 1065.145(e)(2) for that dryer. For this case, the quench verification calculations in § 1065.675 do not scale the measured H_2O quench.

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■ 340. Amend § 1065.375 by revising paragraph (d)(2) to read as follows:

§ 1065.375 Interference verification for N2O analyzers.

* * * * *

(d) * * *

(2) Create a humidified test gas by bubbling a multi component span gas that incorporates the target interference species and meets the specifications in § 1065.750 through distilled H_2O in a sealed vessel or use a device that introduces distilled H_2O as vapor into a controlled gas flow. If the sample does not pass through a dryer during emission testing, humidify your test gas to an H_2O level at or above the maximum expected during emission testing. If the sample passes through a dryer during emission testing, you must humidify your test gas to an H_2O level at or above the level determined in § 1065.145(e)(2) for that dryer. Use interference span gas concentrations that are at least as high as the maximum expected during testing.

* * * * *

■ 341. Amend § 1065.410 by revising paragraphs (c) and (d) to read as follows:

§ 1065.410 Maintenance limits for stabilized test engines.

* * * * *

(c) If you inspect an engine, keep a record of the inspection and update your application for certification to document any changes that result. You may use any kind of equipment, instrument, or tool that is available at dealerships and other service outlets to identify malfunctioning components or perform maintenance.

(d) You may repair defective parts from a test engine if they are unrelated to emission control. You must ask us to approve repairs that might affect the engine's emission controls. If we determine that a part failure, system malfunction, or associated repair makes the engine's emission controls unrepresentative of production engines, you may not use it as an emission-data engine. Also, if your test engine has a major mechanical failure that requires you to take it apart, you may no longer use it as an emission-data engine.

■ 342. Amend § 1065.510 by:

■ a. Revising paragraphs (a) introductory text and (b)(5)(i).

■ b. Adding paragraph (c)(5).

■ c. Revising paragraph (f)(4)(i)

The revisions and addition read as follows:

§ 1065.510 Engine mapping.

(a) *Applicability, scope, and frequency.* An engine map is a data set that consists of a series of paired data points that represent the maximum brake torque versus engine speed, measured at the engine's primary output shaft. Map your engine if the standard-setting part requires engine mapping to generate a duty cycle for your engine configuration. Map your engine while it is connected to a dynamometer or other device that can absorb work output from the engine's primary output shaft according to § 1065.110. Configure any auxiliary work inputs and outputs such as hybrid, turbo-compounding, or thermoelectric systems to represent their in-use configurations, and use the same configuration for emission testing. See Figure 1 of § 1065.210. This may involve configuring initial states of charge and rates and times of auxiliary-work inputs and outputs. We recommend that you contact the Designated Compliance Officer before testing to determine how you should configure any auxiliary-work inputs and outputs. Use the most recent engine map to transform a normalized duty cycle from the standard-setting part to a reference duty cycle specific to your engine. Normalized duty cycles are specified in the standard-setting part. You may update an engine map at any time by repeating the engine-mapping procedure. You must map or re-map an engine before a test if any of the following apply:

* * * * *

(b) * * *

(5) * * *

(i) For any engine subject only to steady-state duty cycles, you may perform an engine map by using discrete speeds. Select at least 20 evenly spaced setpoints from 95% of warm idle speed to the highest speed above maximum power at which 50% of maximum power occurs. We refer to this 50% speed as the check point speed as described in paragraph (b)(5)(iii) of this section. At each setpoint, stabilize speed and allow torque to stabilize. We recommend that you stabilize an engine for at least 15 seconds at each setpoint and record the mean feedback speed and torque of the last (4 to 6) seconds. Record the mean speed and torque at each setpoint. Use linear interpolation to determine intermediate speeds and torques. Use this series of speeds and torques to generate the power map as described in paragraph (e) of this section.

* * * * *

(c) * * *

(5) For engines with an electric hybrid system, map the negative torque required to motor the engine by repeating paragraph (b) of this section with minimum operator demand and a fully charged RESS or with the hybrid system disabled, such that it doesn't affect the motoring torque. You may start the negative torque map at either the minimum or maximum speed from paragraph (b) of this section.

* * * * *

(f) * * *

(4) * * *

(i) For variable-speed engines, declare a warm idle torque that is representative of in-use operation. For example, if your engine is typically connected to an automatic transmission or a hydrostatic transmission, declare the torque that occurs at the idle speed at which your engine operates when the transmission is engaged. Use this value for cycle generation. You may use multiple warm idle torques and associated idle speeds in cycle generation for representative testing. For example, for cycles that start the engine and begin with idle, you may start a cycle in idle with the transmission in neutral with zero torque and later switch to a different idle with the transmission in drive with the Curb-Idle Transmission Torque (CITT). For variable-speed engines intended primarily for propulsion of a vehicle with an automatic transmission where

that engine is subject to a transient duty cycle with idle operation, you must declare a CITT. We recommend that you specify CITT as a function of idle speed for engines with adjustable warm idle or enhanced-idle. You may specify a CITT based on typical applications at the mean of the range of idle speeds you specify at stabilized temperature conditions.

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■ 343. Amend § 1065.512 by revising paragraphs (b)(1) and (2) to read as follows:

§ 1065.512 Duty cycle generation.

* * * * *

(b) * * *

(1) *Engine speed for variable-speed engines.* For variable-speed engines, normalized speed may be expressed as a percentage between warm idle speed, f_{nidle}, and maximum test speed, f_{ntest}, or speed may be expressed by referring to a defined speed by name, such as ''warm idle,'' ''intermediate speed,'' or ''A,'' ''B,'' or ''C'' speed. Section 1065.610 describes how to transform these normalized values into a sequence of reference speeds, f_{nref}. Running duty cycles with negative or small normalized speed values near warm idle speed may cause low-speed idle governors to activate and the engine torque to exceed the reference torque even though the operator demand is at a minimum. In such cases, we recommend controlling the dynamometer so it gives priority to follow the reference torque instead of the reference speed and let the engine govern the speed. Note that the cycle-validation criteria in § 1065.514 allow an engine to govern itself. This allowance permits you to test engines with enhanced-idle devices and to simulate the effects of transmissions such as automatic transmissions. For example, an enhanced-idle device might be an idle speed value that is normally commanded only under cold-start conditions to quickly warm up the engine and aftertreatment devices. In this case, negative and very low normalized speeds will generate reference speeds below this higher enhanced-idle speed. You may do either of the following with when using enhanced-idle devices:

(i) Control the dynamometer so it gives priority to follow the reference torque, controlling the operator demand so it gives priority to follow reference speed and let the engine govern the speed when the operator demand is at minimum.

(ii) While running an engine where the electronic control module broadcasts an enhanced-idle speed that is above the denormalized speed, use the broadcast speed as the reference speed. Use these new reference points for duty-cycle validation. This does not affect how you determine denormalized reference torque in paragraph (b)(2) of this section.

(2) *Engine torque for variable-speed engines.* For variable-speed engines, normalized torque is expressed as a percentage of the mapped torque at the corresponding reference speed. Section 1065.610 describes how to transform normalized torques into a sequence of reference torques, T_{ref}. Section 1065.610 also describes special requirements for modifying transient duty cycles for variable-speed engines intended primarily for propulsion of a vehicle with an automatic transmission. Section 1065.610 also describes under what conditions you may command Tref greater than the reference torque you calculated from a normalized duty cycle, which permits you to command T_{ref} values that are limited by a declared minimum torque. For any negative torque commands, command minimum operator demand and use the dynamometer to control engine speed to the reference speed, but if reference speed is so low that the idle governor activates, we recommend using the dynamometer to control torque to zero, CITT, or a declared minimum torque as appropriate. Note that you may omit power and torque points during motoring from the cycle-validation criteria in § 1065.514. Also, use the maximum mapped torque at the minimum mapped speed as the maximum torque for any reference speed at or below the minimum mapped speed.

* * * * *

■ 344. Amend § 1065.514 by revising paragraphs (e) introductory text, (e)(3), and (f)(3) to read as follows:

§ 1065.514 Cycle-validation criteria for operation over specified duty cycles.

* * * * *

(e) *Statistical parameters.* Use the remaining points to calculate regression statistics for a floating intercept as described in § 1065.602. Round calculated regression statistics to the same number of significant digits as the criteria to which they are compared. Refer to Table 2 of this section for the default criteria and refer to the standard-setting part to determine if there are other criteria for your engine. Calculate the following regression statistics:

* * * * *

(3) Standard error of the estimate for feedback speed, SEEfn, feedback torque, SEET, and feedback power SEEP.

* * * * *

(f) * * *

(3) For discrete-mode steady-state testing, apply cycle-validation criteria by treating the sampling periods from the series of test modes as a continuous sampling period, analogous to ramped-modal testing and apply statistical criteria as described in paragraph (f)(1) or (2) of this section. Note that if the gaseous and particulate test intervals are different periods of time, separate validations are required for the gaseous and particulate test intervals. Table 2 follows:

TABLE 2 OF § 1065.514—DEFAULT STATISTICAL CRITERIA FOR VALIDATING DUTY CYCLES

Parameter	Speed	Torque	Power
Slope, a_1	$0.950 \le a_1 \le 1.030$	$0.830 \le a_1 \le 1.030$	$0.830 \le a_1 \le 1.030$.
Absolute value of intercept, $\lvert a_0 \rvert$	≤ 10% of warm idle	≤ 2% of maximum mapped torque	≤ 2% of maximum mapped power.
Standard error of the estimate, *SEE*	≤ 5% of maximum test speed	≤ 10% of maximum mapped torque.	≤ 10% of maximum mapped power.
Coefficient of determination, r_2	≥ 0.970	≥ 0.850	≥ 0.910.

■ 345. Amend § 1065.530 by revising paragraph (a)(2)(iii) and adding paragraph (g)(5) to read as follows:

§ 1065.530 Emission test sequence.

(a) * * *

(2) * * *

(iii) For testing that involves hot-stabilized emission measurements, bring the engine either to warm idle or the first operating point of the duty cycle. Start the test within 10 min of achieving temperature stability. Determine temperature stability as the point at

which the engine thermostat controls engine temperature or as the point at which measured operating temperature has stayed within ±2% of the mean value for at least 2 min based on the following parameters:

(A) Engine coolant or block or head absolute temperatures for water-cooled engines.

(B) Oil sump absolute temperature for air-cooled engines with an oil sump.

(C) Cylinder head absolute temperature or exhaust gas temperature for air-cooled engines with no oil sump.

* * * * *

(g) * * *

(5) If you perform carbon balance error verification, verify carbon balance error as specified in the standard-setting part and § 1065.543. Calculate and report the three carbon balance error quantities for each test interval; carbon mass absolute error for a test interval (ε_{aC}), carbon mass rate absolute error for a test interval (ε_{aCrate}), and carbon mass relative error for a test interval (ε_{rC}). For duty cycles with multiple test intervals, you may calculate and report the composite carbon mass relative error, ε_{rCcomp}, for the whole duty cycle. If you report ε_{rCcomp}, you must still calculate and report ε_{aC}, ε_{aCrate}, and ε_{rC} for each test interval.

* * * * *

■ 346. Add § 1065.543 to read as follows:

§ 1065.543 Carbon balance error verification.

(a) Carbon balance error verification compares independently calculated quantities of carbon flowing into and out of an engine system. The engine system includes aftertreatment devices as applicable. Calculating carbon intake considers carbon-carrying streams flowing into the system, including intake air, fuel, and optionally DEF or other fluids. Carbon flow out of the system comes from exhaust emission calculations. Note that this verification is not valid if you calculate exhaust molar flow rate using fuel rate and chemical balance as described in § 1065.655(f)(3) because carbon flows into and out of the system are not independent. Use good engineering judgment to ensure that carbon mass in and carbon mass out data signals align.

(b) Perform the carbon balance error verification after emission sampling is complete for a test interval or duty cycle as described in § 1065.530(g). Testing must include measured values as needed to determine intake air, fuel flow, and carbon-related gaseous exhaust emissions. You may optionally account for the flow of carbon-carrying fluids other than intake air and fuel into the system. Perform carbon balance error verification as follows:

(1) Calculate carbon balance error quantities as described in § 1065.643. The three quantities for individual test intervals are carbon mass absolute error, ε_{aC}, carbon mass rate absolute error, ε_{aCrate}, and carbon mass relative error, ε_{rC}. Determine ε_{aC}, ε_{aCrate}, and ε_{rC} for all test intervals. You may determine composite carbon mass relative error, εrCcomp, as a fourth quantity that optionally applies for duty cycles with multiple test intervals.

(2) You meet verification criteria for an individual test interval if the absolute values of carbon balance error quantities are at or below the following limit values:

(i) Calculate the carbon mass absolute error limit, $L\varepsilon_{aC}$, in grams to three decimal places for comparision to the absolute value of $\varepsilon_{\geqq aC}$, using the following equation:

$$L_{\epsilon aC} = c \cdot P_{max}$$

Eq. 1065.543-1

Where:

c = power-specific carbon mass absolute error coefficient = 0.007 g/kW.

P_{max} = maximum power from the engine map generated according to § 1065.510. If measured

P_{max} is not available, use a manufacturer-declared value for P_{max}.

Example:

c = 0.007 g/kW

P_{max} = 230.0 kW

$L_{òaC} = 0.007 \cdot 230.0 = 1.610$ g

(ii) Calculate the carbon mass rate absolute error limit, $L\varepsilon_{aCrate}$, in grams per hour to three decimal places for comparison to the absolute value of ε_{aCrate}, using the following equation:

$$L_{\epsilon aCrate} = d \cdot P_{max}$$

Eq. 1065.543-2

Where:

d = power-specific carbon mass rate absolute error coefficient = 0.31 g/(kW · hr).

P_{max} = maximum power from the engine map generated according to § 1065.510. If measured

P_{max} is not available, use a manufacturer-declared value for P_{max}.

Example:

d = 0.31 g/(kW·hr)

P_{max} = 230.0 kW

$L\varepsilon_{aCrate}$ = 71.300 g/hr

(iii) The carbon mass relative error limit,

$L\varepsilon_{rC}$, is 0.020 for comparision to the absolute value of ε_{rC}, and optionally the absolute value of ε_{rCcomp}.

(c) A failed carbon balance error verification might indicate one or more problems requiring corrective action, as follows:

TABLE 1 OF § 1065.543—TROUBLESHOOTING GUIDE FOR CARBON BALANCE ERROR VERIFICATION

Area of concern	Problem	Recommended corrective action
Gas analyzer system	Incorrect analyzer calibration	Calibrate NDIR and THC analyzers.
	Incorrect time alignment between flow and concentration data.	Determine transformation time, t_{50}, for continuous gas analyzers and time-align flow and concentration data as described in § 1065.650(c)(2)(i).
	Problems with the sample system	Inspect sample system components such as sample lines, filters, chillers, and pumps for leaks, operating temperature, and contamination.
Fuel flow measurement	Zero shift of fuel flow rate meter	Perform an in-situ zero adjustment.
	Change in fuel flow meter calibration.	Calibrate the fuel flow meter as described in § 1065.320.
	Incorrect time alignment of fuel flow data.	Verify alignment of carbon mass in and carbon mass out data streams.
	Short sampling periods	For test intervals with varying duration, such as discrete-mode steady-state duty cycles, make the test intervals longer to improve accuracy when measuring low fuel flow rates.

TABLE 1 OF § 1065.543—TROUBLESHOOTING GUIDE FOR CARBON BALANCE ERROR VERIFICATION—Continued

Area of concern	Problem	Recommended corrective action
	Fluctuations in the fuel conditioning system.	Improve stability of the fuel temperature and pressure conditioning system to improve accuracy when measuring low fuel flow rates.
Dilute testing using a CVS system ...	Leaks	Inspect exhaust system and CVS tunnel, connections, and fasteners. Repair or replace components as needed. A leak in the exhaust transfer tube to the CVS may result in negative values for carbon balance error.
	Poor mixing	Perform the verification related to mixing in § 1065.341(f).
	Change in CVS calibration	Calibrate the CVS flow meter as described in § 1065.340.
	Flow meter entrance effects	Inspect the CVS tunnel to determine whether entrance effects from the piping configuration upstream of the flow meter adversely affect flow measurement.
	Other problems with the CVS or sampling verification hardware or software.	Inspect hardware and software for the CVS system and CVS verification system for discrepancies.
Raw testing using intake air flow measurement or direct exhaust flow measurement.	Leaks	Inspect intake air and exhaust systems, connections, fasteners. Repair or replace components as needed.
	Zero shift of intake air flow rate meter.	Perform an in-situ zero adjustment.
	Change in intake air flow meter calibration.	Calibrate the intake air flow meter as described in § 1065.325.
	Zero shift of exhaust flow rate meter.	Perform an in-situ zero adjustment.
	Change in exhaust flow meter calibration.	Calibrate the exhaust flow meter as described in § 1065.330.
	Flow meter entrance effects	Inspect intake air and exhaust systems to determine whether entrance effects from the piping configuration upstream and downstream of the intake air flow meter or the exhaust flow meter adversely affect flow measurement.
	Other problems with the intake air flow and exhaust flow measurement hardware or software.	Look for discrepancies in the hardware and software for measuring intake air flow and exhaust flow.
	Poor mixing	Ensure that all streams are well mixed.
Accuracy of fluid properties	Inaccurate fluid properties	If defaults are used, use measured values. If measured values are used, verify fluid property determination.

■ 347. Amend § 1065.545 by revising paragraphs (a) and (b) introductory text to read as follows:

§ 1065.545 Verification of proportional flow control for batch sampling.

* * * * *

(a) For any pair of flow rates, use recorded sample and total flow rates. Total flow rate means the raw exhaust flow rate for raw exhaust sampling and the dilute exhaust flow rate for CVS sampling, or their 1 Hz means with the statistical calculations in § 1065.602 forcing the intercept through zero. Determine the standard error of the estimate, *SEE*, of the sample flow rate versus the total flow rate. For each test interval, demonstrate that *SEE* was less than or equal to 3.5% of the mean sample flow rate.

(b) For any pair of flow rates, use recorded sample and total flow rates. Total flow rate means the raw exhaust flow rate for raw exhaust sampling and the dilute exhaust flow rate for CVS sampling, or their 1 Hz means to demonstrate that each flow rate was constant within ±2.5% of its respective mean or target flow rate. You may use the following options instead of recording the respective flow rate of each type of meter:

* * * * *

■ 348. Revise § 1065.602 to read as follows:

§ 1065.602 Statistics.

(a) *Overview.* This section contains equations and example calculations for statistics that are specified in this part. In this section we use the letter ''y'' to denote a generic measured quantity, the superscript over-bar ''–'' to denote an arithmetic mean, and the subscript ''$_{ref}$'' to denote the reference quantity being measured.

(b) *Arithmetic mean.* Calculate an arithmetic mean, $\bar{y}$, as follows:

$$\bar{y} = \frac{\sum_{i=1}^{N} y_i}{N}$$

Eq. 1065.602-1

Example:

$N = 3$

$y_1 = 10.60$

$y_2 = 11.91$

$y_N = y_3 = 11.09$

$$\bar{y} = \frac{10.60 + 11.91 + 11.09}{3}$$

$\bar{y} = 11.20$

(c) *Standard deviation.* Calculate the standard deviation for a non-biased (*e.g.,* N–1) sample, σ, as follows:

$$\sigma_y = \sqrt{\frac{\sum_{i=1}^{N} (y_i - \bar{y})^2}{(N-1)}}$$

Eq. 1065.602-2

Example:

$N = 3$

$y_1 = 10.60$

$y_2 = 11.91$

$y_N = y_3 = 11.09$

$\bar{y} = 11.20$

$$\sigma_y = \sqrt{\frac{(10.60-11.2)^2+(11.91-11.2)^2+(11.09-11.2)^2}{2}}$$

$\sigma_y = 0.6619$

(d) *Root mean square.* Calculate a root mean square, rms_y, as follows:

$$rms_y = \sqrt{\frac{1}{N}\sum_{i=1}^{N} y_i^2}$$

Eq. 1065.602-3

Example:

$N = 3$
$y_1 = 10.60$
$y_2 = 11.91$
$y_N = y_3 = 11.09$

$$rms_y = \sqrt{\frac{10.60^2+11.91^2+11.09^2}{3}}$$

$rms_y = 11.21$

(e) *Accuracy.* Determine accuracy as described in this paragraph (e). Make multiple measurements of a standard quantity to create a set of observed values, y_i, and compare each observed value to the known value of the standard quantity. The standard quantity may have a single known value, such as a gas standard, or a set of known values of negligible range, such as a known applied pressure produced by a calibration device during repeated applications. The known value of the standard quantity is represented by y_{refi}. If you use a standard quantity with a single value, y_{refi} would be constant. Calculate an accuracy value as follows:

$$accuracy = \left|\frac{1}{N}\sum_{i=1}^{N}(y_i - y_{refi})\right|$$

Eq. 1065.602-4

Example:

$y_{ref} = 1800.0$
$N = 3$
$y_1 = 1806.4$
$y_2 = 1803.1$
$y_3 = 1798.9$

$$accuracy = \left|\frac{1}{3}((1806.4-1800.0)+(1803.1-1800.0)+(1798.9-1800.0))\right|$$

$$accuracy = \left|\frac{1}{3}((6.4)+(3.1)+(-1.1))\right|$$

accuracy = 2.8

(f) *t-test.* Determine if your data passes a *t*-test by using the following equations and tables: (1) For an unpaired *t*-test, calculate the *t* statistic and its number of degrees of freedom, *v*, as follows:

$$t = \frac{|\overline{y}_{ref} - \overline{y}|}{\sqrt{\frac{\sigma_{ref}^2}{N_{ref}} + \frac{\sigma_y^2}{N}}}$$

Eq. 1065.602-5

$$v = \frac{\left(\frac{\sigma_{ref}^2}{N_{ref}} + \frac{\sigma_y^2}{N}\right)^2}{\frac{\left(\frac{\sigma_{ref}^2}{N_{ref}}\right)^2}{N_{ref}-1} + \frac{\left(\frac{\sigma_y^2}{N}\right)^2}{N-1}}$$

Eq. 1065.602-6

Example:

$\bar{Y}_{ref} = 1205.3$
$\bar{Y} = 1123.8$
$\sigma_{ref} = 9.399$
$\sigma_y = 10.583$
$N_{ref} = 11$
$N = 7$

$$t = \frac{|1205.3-1123.8|}{\sqrt{\frac{9.399^2}{11} + \frac{10.583^2}{7}}}$$

$t = 16.63$
$\sigma_{ref} = 9.399$
$\sigma_y = 10.583$
$N_{ref} = 11$
$N = 7$

$$v = \frac{\left(\frac{9.399^2}{11} + \frac{10.583^2}{7}\right)^2}{\frac{\left(\frac{9.399^2}{11}\right)^2}{11-1} + \frac{\left(\frac{10.583^2}{7}\right)^2}{7-1}}$$

$v = 11.76$

(2) For a paired *t*-test, calculate the *t* statistic and its number of degrees of freedom, *v*, as follows, noting that the ε_i are the errors (*e.g.,* differences) between each pair of y_{refi} and y_i:

$$t = \frac{|\overline{\varepsilon}| \cdot \sqrt{N}}{\sigma_\varepsilon}$$

Eq. 1065.602-7

Example 1:

$\bar{\varepsilon} = -0.12580$
$N = 16$
$\sigma\varepsilon = 0.04837$

$$t = \frac{|-0.12580| \cdot \sqrt{16}}{0.04837}$$

$t = 10.403$
$v = N-1$

Example 2:

$N = 16$
$v = 16-1$
$v = 15$

(3) Use Table 1 of this section to compare *t* to the t_{crit} values tabulated versus the number of degrees of freedom. If *t* is less than t_{crit}, then *t* passes the *t*-test. The Microsoft Excel software has a TINV function that returns results equivalent results and may be used in place of Table 1, which follows:

TABLE 1 OF § 1065.602—CRITICAL *t* VALUES VERSUS NUMBER OF DEGREES OF FREEDOM, *v*[a]

v	Confidence	
	90%	95%
1	6.314	12.706
2	2.920	4.303

TABLE 1 OF § 1065.602—CRITICAL *t* VALUES VERSUS NUMBER OF DEGREES OF FREEDOM, *v*[a]—Continued

v	Confidence	
	90%	95%
3	2.353	3.182
4	2.132	2.776
5	2.015	2.571
6	1.943	2.447
7	1.895	2.365
8	1.860	2.306
9	1.833	2.262
10	1.812	2.228
11	1.796	2.201
12	1.782	2.179
13	1.771	2.160
14	1.761	2.145
15	1.753	2.131
16	1.746	2.120
18	1.734	2.101
20	1.725	2.086
22	1.717	2.074
24	1.711	2.064
26	1.706	2.056
28	1.701	2.048
30	1.697	2.042
35	1.690	2.030
40	1.684	2.021
50	1.676	2.009
70	1.667	1.994
100	1.660	1.984
1000+	1.645	1.960

[a] Use linear interpolation to establish values not shown here.

(g) *F-test.* Calculate the *F* statistic as follows:

$$F_{\mathrm{y}} = \frac{\sigma_{\mathrm{y}}^2}{\sigma_{\mathrm{ref}}^2}$$

Eq. 1065.602-8

Example:

$$\sigma_{\mathrm{y}} = \sqrt{\frac{\sum_{i=1}^{N}\left(y_i - \overline{y}\right)^2}{\left(N-1\right)}} = 10.583$$

$$\sigma_{\mathrm{ref}} = \sqrt{\frac{\sum_{i=1}^{N_{\mathrm{ref}}}\left(y_{\mathrm{ref}i} - \overline{y}_{\mathrm{ref}}\right)^2}{\left(N_{\mathrm{ref}}-1\right)}} = 9.399$$

$$F = \frac{10.583^2}{9.399^2}$$

$F = 1.268$

(1) For a 90% confidence *F*-test, use the following table to compare *F* to the F_{crit90} values tabulated versus $(N-1)$ and $(N_{\mathrm{ref}}-1)$. If *F* is less than F_{crit90}, then *F* passes the *F*-test at 90% confidence.

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TABLE 2 OF §1065.602–CRITICAL F VALUES, F_{crit90}, VERSUS N–1 AND N_{ref}–1 AT 90 % CONFIDENCE

N–1	1	2	3	4	5	6	7	8	9	10	12	15	20	24	30	40	60	120	1000+
N_{ref}–1																			
1	39.86	49.50	53.59	55.83	57.24	58.20	58.90	59.43	59.85	60.19	60.70	61.22	61.74	62.00	62.26	62.52	62.79	63.06	63.32
2	8.526	9.000	9.162	9.243	9.293	9.326	9.349	9.367	9.381	9.392	9.408	9.425	9.441	9.450	9.458	9.466	9.475	9.483	9.491
3	5.538	5.462	5.391	5.343	5.309	5.285	5.266	5.252	5.240	5.230	5.216	5.200	5.184	5.176	5.168	5.160	5.151	5.143	5.134
4	4.545	4.325	4.191	4.107	4.051	4.010	3.979	3.955	3.936	3.920	3.896	3.870	3.844	3.831	3.817	3.804	3.790	3.775	3.761
5	4.060	3.780	3.619	3.520	3.453	3.405	3.368	3.339	3.316	3.297	3.268	3.238	3.207	3.191	3.174	3.157	3.140	3.123	3.105
6	3.776	3.463	3.289	3.181	3.108	3.055	3.014	2.983	2.958	2.937	2.905	2.871	2.836	2.818	2.800	2.781	2.762	2.742	2.722
7	3.589	3.257	3.074	2.961	2.883	2.827	2.785	2.752	2.725	2.703	2.668	2.632	2.595	2.575	2.555	2.535	2.514	2.493	2.471
8	3.458	3.113	2.924	2.806	2.726	2.668	2.624	2.589	2.561	2.538	2.502	2.464	2.425	2.404	2.383	2.361	2.339	2.316	2.293
9	3.360	3.006	2.813	2.693	2.611	2.551	2.505	2.469	2.440	2.416	2.379	2.340	2.298	2.277	2.255	2.232	2.208	2.184	2.159
10	3.285	2.924	2.728	2.605	2.522	2.461	2.414	2.377	2.347	2.323	2.284	2.244	2.201	2.178	2.155	2.132	2.107	2.082	2.055
11	3.225	2.860	2.660	2.536	2.451	2.389	2.342	2.304	2.274	2.248	2.209	2.167	2.123	2.100	2.076	2.052	2.026	2.000	1.972
12	3.177	2.807	2.606	2.480	2.394	2.331	2.283	2.245	2.214	2.188	2.147	2.105	2.060	2.036	2.011	1.986	1.960	1.932	1.904
13	3.136	2.763	2.560	2.434	2.347	2.283	2.234	2.195	2.164	2.138	2.097	2.053	2.007	1.983	1.958	1.931	1.904	1.876	1.846
14	3.102	2.726	2.522	2.395	2.307	2.243	2.193	2.154	2.122	2.095	2.054	2.010	1.962	1.938	1.912	1.885	1.857	1.828	1.797
15	3.073	2.695	2.490	2.361	2.273	2.208	2.158	2.119	2.086	2.059	2.017	1.972	1.924	1.899	1.873	1.845	1.817	1.787	1.755
16	3.048	2.668	2.462	2.333	2.244	2.178	2.128	2.088	2.055	2.028	1.985	1.940	1.891	1.866	1.839	1.811	1.782	1.751	1.718
17	3.026	2.645	2.437	2.308	2.218	2.152	2.102	2.061	2.028	2.001	1.958	1.912	1.862	1.836	1.809	1.781	1.751	1.719	1.686
18	3.007	2.624	2.416	2.286	2.196	2.130	2.079	2.038	2.005	1.977	1.933	1.887	1.837	1.810	1.783	1.754	1.723	1.691	1.657
19	2.990	2.606	2.397	2.266	2.176	2.109	2.058	2.017	1.984	1.956	1.912	1.865	1.814	1.787	1.759	1.730	1.699	1.666	1.631
20	2.975	2.589	2.380	2.249	2.158	2.091	2.040	1.999	1.965	1.937	1.892	1.845	1.794	1.767	1.738	1.708	1.677	1.643	1.607
21	2.961	2.575	2.365	2.233	2.142	2.075	2.023	1.982	1.948	1.920	1.875	1.827	1.776	1.748	1.719	1.689	1.657	1.623	1.586
22	2.949	2.561	2.351	2.219	2.128	2.061	2.008	1.967	1.933	1.904	1.859	1.811	1.759	1.731	1.702	1.671	1.639	1.604	1.567
23	2.937	2.549	2.339	2.207	2.115	2.047	1.995	1.953	1.919	1.890	1.845	1.796	1.744	1.716	1.686	1.655	1.622	1.587	1.549
24	2.927	2.538	2.327	2.195	2.103	2.035	1.983	1.941	1.906	1.877	1.832	1.783	1.730	1.702	1.672	1.641	1.607	1.571	1.533
25	2.918	2.528	2.317	2.184	2.092	2.024	1.971	1.929	1.895	1.866	1.820	1.771	1.718	1.689	1.659	1.627	1.593	1.557	1.518
26	2.909	2.519	2.307	2.174	2.082	2.014	1.961	1.919	1.884	1.855	1.809	1.760	1.706	1.677	1.647	1.615	1.581	1.544	1.504
27	2.901	2.511	2.299	2.165	2.073	2.005	1.952	1.909	1.874	1.845	1.799	1.749	1.695	1.666	1.636	1.603	1.569	1.531	1.491
28	2.894	2.503	2.291	2.157	2.064	1.996	1.943	1.900	1.865	1.836	1.790	1.740	1.685	1.656	1.625	1.593	1.558	1.520	1.478
29	2.887	2.495	2.283	2.149	2.057	1.988	1.935	1.892	1.857	1.827	1.781	1.731	1.676	1.647	1.616	1.583	1.547	1.509	1.467
30	2.881	2.489	2.276	2.142	2.049	1.980	1.927	1.884	1.849	1.819	1.773	1.722	1.667	1.638	1.606	1.573	1.538	1.499	1.456
40	2.835	2.440	2.226	2.091	1.997	1.927	1.873	1.829	1.793	1.763	1.715	1.662	1.605	1.574	1.541	1.506	1.467	1.425	1.377
60	2.791	2.393	2.177	2.041	1.946	1.875	1.819	1.775	1.738	1.707	1.657	1.603	1.543	1.511	1.476	1.437	1.395	1.348	1.291
120	2.748	2.347	2.130	1.992	1.896	1.824	1.767	1.722	1.684	1.652	1.601	1.545	1.482	1.447	1.409	1.368	1.320	1.265	1.193
1000+	2.706	2.303	2.084	1.945	1.847	1.774	1.717	1.670	1.632	1.599	1.546	1.487	1.421	1.383	1.342	1.295	1.240	1.169	1.000

(2) For a 95% confidence F-test, use the following table to compare F to the F_{crit90} values tabulated versus ($N-1$) and ($N_{ref}-1$). If F is less than F_{crit95}, then F passes the F-test at 95% confidence.

TABLE 3 OF §1065.602–CRITICAL *F* VALUES, F_{crit95}, VERSUS N–1 AND N_{ref}–1 AT 95 % CONFIDENCE

N–1	1	2	3	4	5	6	7	8	9	10	12	15	20	24	30	40	60	120	1000+
N_{ref}–1																			
1	161.4	199.5	215.7	224.5	230.1	233.9	236.7	238.8	240.5	241.8	243.9	245.9	248.0	249.0	250.1	251.1	252.2	253.2	254.3
2	18.51	19.00	19.16	19.24	19.29	19.33	19.35	19.37	19.38	19.39	19.41	19.42	19.44	19.45	19.46	19.47	19.47	19.48	19.49
3	10.12	9.552	9.277	9.117	9.014	8.941	8.887	8.845	8.812	8.786	8.745	8.703	8.660	8.639	8.617	8.594	8.572	8.549	8.526
4	7.709	6.944	6.591	6.388	6.256	6.163	6.094	6.041	5.999	5.964	5.912	5.858	5.803	5.774	5.746	5.717	5.688	5.658	5.628
5	6.608	5.786	5.410	5.192	5.050	4.950	4.876	4.818	4.773	4.735	4.678	4.619	4.558	4.527	4.496	4.464	4.431	4.399	4.365
6	5.987	5.143	4.757	4.534	4.387	4.284	4.207	4.147	4.099	4.060	4.000	3.938	3.874	3.842	3.808	3.774	3.740	3.705	3.669
7	5.591	4.737	4.347	4.120	3.972	3.866	3.787	3.726	3.677	3.637	3.575	3.511	3.445	3.411	3.376	3.340	3.304	3.267	3.230
8	5.318	4.459	4.066	3.838	3.688	3.581	3.501	3.438	3.388	3.347	3.284	3.218	3.150	3.115	3.079	3.043	3.005	2.967	2.928
9	5.117	4.257	3.863	3.633	3.482	3.374	3.293	3.230	3.179	3.137	3.073	3.006	2.937	2.901	2.864	2.826	2.787	2.748	2.707
10	4.965	4.103	3.708	3.478	3.326	3.217	3.136	3.072	3.020	2.978	2.913	2.845	2.774	2.737	2.700	2.661	2.621	2.580	2.538
11	4.844	3.982	3.587	3.357	3.204	3.095	3.012	2.948	2.896	2.854	2.788	2.719	2.646	2.609	2.571	2.531	2.490	2.448	2.405
12	4.747	3.885	3.490	3.259	3.106	2.996	2.913	2.849	2.796	2.753	2.687	2.617	2.544	2.506	2.466	2.426	2.384	2.341	2.296
13	4.667	3.806	3.411	3.179	3.025	2.915	2.832	2.767	2.714	2.671	2.604	2.533	2.459	2.420	2.380	2.339	2.297	2.252	2.206
14	4.600	3.739	3.344	3.112	2.958	2.848	2.764	2.699	2.646	2.602	2.534	2.463	2.388	2.349	2.308	2.266	2.223	2.178	2.131
15	4.543	3.682	3.287	3.056	2.901	2.791	2.707	2.641	2.588	2.544	2.475	2.403	2.328	2.288	2.247	2.204	2.160	2.114	2.066
16	4.494	3.634	3.239	3.007	2.852	2.741	2.657	2.591	2.538	2.494	2.425	2.352	2.276	2.235	2.194	2.151	2.106	2.059	2.010
17	4.451	3.592	3.197	2.965	2.810	2.699	2.614	2.548	2.494	2.450	2.381	2.308	2.230	2.190	2.148	2.104	2.058	2.011	1.960
18	4.414	3.555	3.160	2.928	2.773	2.661	2.577	2.510	2.456	2.412	2.342	2.269	2.191	2.150	2.107	2.063	2.017	1.968	1.917
19	4.381	3.522	3.127	2.895	2.740	2.628	2.544	2.477	2.423	2.378	2.308	2.234	2.156	2.114	2.071	2.026	1.980	1.930	1.878
20	4.351	3.493	3.098	2.866	2.711	2.599	2.514	2.447	2.393	2.348	2.278	2.203	2.124	2.083	2.039	1.994	1.946	1.896	1.843
21	4.325	3.467	3.073	2.840	2.685	2.573	2.488	2.421	2.366	2.321	2.250	2.176	2.096	2.054	2.010	1.965	1.917	1.866	1.812
22	4.301	3.443	3.049	2.817	2.661	2.549	2.464	2.397	2.342	2.297	2.226	2.151	2.071	2.028	1.984	1.938	1.889	1.838	1.783
23	4.279	3.422	3.028	2.796	2.640	2.528	2.442	2.375	2.320	2.275	2.204	2.128	2.048	2.005	1.961	1.914	1.865	1.813	1.757
24	4.260	3.403	3.009	2.776	2.621	2.508	2.423	2.355	2.300	2.255	2.183	2.108	2.027	1.984	1.939	1.892	1.842	1.790	1.733
25	4.242	3.385	2.991	2.759	2.603	2.490	2.405	2.337	2.282	2.237	2.165	2.089	2.008	1.964	1.919	1.872	1.822	1.768	1.711
26	4.225	3.369	2.975	2.743	2.587	2.474	2.388	2.321	2.266	2.220	2.148	2.072	1.990	1.946	1.901	1.853	1.803	1.749	1.691
27	4.210	3.354	2.960	2.728	2.572	2.459	2.373	2.305	2.250	2.204	2.132	2.056	1.974	1.930	1.884	1.836	1.785	1.731	1.672
28	4.196	3.340	2.947	2.714	2.558	2.445	2.359	2.291	2.236	2.190	2.118	2.041	1.959	1.915	1.869	1.820	1.769	1.714	1.654
29	4.183	3.328	2.934	2.701	2.545	2.432	2.346	2.278	2.223	2.177	2.105	2.028	1.945	1.901	1.854	1.806	1.754	1.698	1.638
30	4.171	3.316	2.922	2.690	2.534	2.421	2.334	2.266	2.211	2.165	2.092	2.015	1.932	1.887	1.841	1.792	1.740	1.684	1.622
40	4.085	3.232	2.839	2.606	2.450	2.336	2.249	2.180	2.124	2.077	2.004	1.925	1.839	1.793	1.744	1.693	1.637	1.577	1.509
60	4.001	3.150	2.758	2.525	2.368	2.254	2.167	2.097	2.040	1.993	1.917	1.836	1.748	1.700	1.649	1.594	1.534	1.467	1.389
120	3.920	3.072	2.680	2.447	2.290	2.175	2.087	2.016	1.959	1.911	1.834	1.751	1.659	1.608	1.554	1.495	1.429	1.352	1.254
1000+	3.842	2.996	2.605	2.372	2.214	2.099	2.010	1.938	1.880	1.831	1.752	1.666	1.571	1.517	1.459	1.394	1.318	1.221	1.000

(h) *Slope.* Calculate a least-squares regression slope, a_{1y}, using one of the following two methods:

(1) If the intercept floats, *i.e.,* is not forced through zero:

$$a_{1y} = \frac{\sum_{i=1}^{N} (y_i - \bar{y}) \cdot (y_{refi} - \bar{y}_{ref})}{\sum_{i=1}^{N} (y_{refi} - \bar{y}_{ref})^2}$$

Eq. 1065.602-9

Example:

$N = 6000$
$y_1 = 2045.8$
$\bar{y} = 1050.1$
$y_{ref1} = 2045.0$
$\bar{y}_{ref} = 1055.3$

$$a_{1y} = \frac{(2045.8 - 1050.1) \cdot (2045.0 - 1055.3) + \ldots + (y_{6000} - 1050.1) \cdot (y_{ref6000} - 1055.3)}{(2045.0 - 1055.3)^2 + \ldots + (y_{ref6000} - 1055.3)^2}$$

$a_{1y} = 1.0110$

(2) If the intercept is forced through zero, such as for verifying proportional sampling:

$$a_{1y} = \frac{\sum_{i=1}^{N} y_i \cdot y_{refi}}{\sum_{i=1}^{N} y_{refi}^2}$$

Eq. 1065.602-10

Example:

$N = 6000$
$y_1 = 2045.8$
$y_{ref1} = 2045.0$

$$a_{1y} = \frac{2045.8 \cdot 2045.0 + \ldots + y_{6000} \cdot y_{ref\,6000}}{2045.0^2 + \ldots + y_{ref\,6000}^2}$$

$a_{1y} = 1.0110$

(i) *Intercept.* For a floating intercept, calculate a least-squares regression intercept, a_{0y}, as follows:

$$a_{0y} = \bar{y} - (a_{1y} \cdot \bar{y}_{ref})$$

Eq. 1065.602-11

Example:

$\bar{y} = 1050.1$
$a_{1y} = 1.0110$
$\bar{y}_{ref} = 1055.3$
$a_{0y} = 1050.1 - (1.0110 \cdot 1055.3)$
$a_{0y} = -16.8083$

(j) *Standard error of the estimate.* Calculate a standard error of the estimate, *SEE*, using one of the following two methods:

(1) For a floating intercept:

$$SEE_y = \sqrt{\frac{\sum_{i=1}^{N} \left(y_i - a_{0y} - (a_{1y} \cdot y_{refi})\right)^2}{N - 2}}$$

Eq. 1065.602-12

Example:

$N = 6000$
$y_1 = 2045.8$
$a_{0y} = -16.8083$
$a_{1y} = 1.0110$
$y_{ref1} = 2045.0$

$$SEE_y = \sqrt{\frac{(2045.8 - (-16.8083) - (1.0110 \cdot 2045.0))^2 + \ldots (y_{6000} - (-16.8083) - (1.0110 \cdot y_{ref\,6000}))^2}{6000 - 2}}$$

$SEE_y = 5.348$

(2) If the intercept is forced through zero, such as for verifying proportional sampling:

$$SEE_y = \sqrt{\frac{\sum_{i=1}^{N} \left(y_i - a_{1y} \cdot y_{refi}\right)^2}{N - 1}}$$

Eq. 1065.602-13

Example:

$N = 6000$
$y_1 = 2045.8$
$a_{1y} = 1.0110$
$y_{ref1} = 2045.0$

$$SEE_y = \sqrt{\frac{(2045.8 - 1.0110 \cdot 2045.0)^2 + \ldots + (y_{6000} - 1.0110 \cdot y_{ref\,6000})^2}{6000 - 1}}$$

$SEE_y = 5.347$

(k) *Coefficient of determination.* Calculate a coefficient of determination, r_y^2, as follows:

$$r_y^2 = 1 - \frac{\sum_{i=1}^{N} \left(y_i - a_{0y} - (a_{1y} \cdot y_{refi}) \right)^2}{\sum_{i=1}^{N} \left(y_i - \bar{y} \right)^2}$$

Eq. 1065.602-14

Example:

$N = 6000$
$y_1 = 2045.8$
$a_{0y} = -16.8083$
$a_{1y} = 1.0110$
$y_{ref1} = 2045.0$
$\bar{y} = 1480.5$

$$r_y^2 = 1 - \frac{\left(2045.8 - (-16.8083) - (1.0110 \times 2045.0)\right)^2 + \ldots \left(y_{6000} - (-16.8083) - (1.0110 \cdot y_{ref6000}) \right)^2}{\left(2045.8 - 1480.5\right)^2 + \ldots \left(y_{6000} - 1480.5 \right)^2}$$

$$r_y^2 = 0.9859$$

(l) *Flow-weighted mean concentration.* In some sections of this part, you may need to calculate a flow-weighted mean concentration to determine the applicability of certain provisions. A flow-weighted mean is the mean of a quantity after it is weighted proportional to a corresponding flow rate. For example, if a gas concentration is measured continuously from the raw exhaust of an engine, its flow-weighted mean concentration is the sum of the products of each recorded concentration times its respective exhaust molar flow rate, divided by the sum of the recorded flow rate values. As another example, the bag concentration from a CVS system is the same as the flow-weighted mean concentration because the CVS system itself flow-weights the bag concentration. You might already expect a certain flow-weighted mean concentration of an emission at its standard based on previous testing with similar engines or testing with similar equipment and instruments. If you need to estimate your expected flow-weighted mean concentration of an emission at its standard, we recommend using the following examples as a guide for how to estimate the flow-weighted mean concentration expected at the standard. Note that these examples are not exact and that they contain assumptions that are not always valid. Use good engineering judgment to determine if you can use similar assumptions.

(1) To estimate the flow-weighted mean raw exhaust NO_X concentration from a turbocharged heavy-duty compression-ignition engine at a NO_X standard of 2.5 g/(kW·hr), you may do the following:

(i) Based on your engine design, approximate a map of maximum torque versus speed and use it with the applicable normalized duty cycle in the standard-setting part to generate a reference duty cycle as described in § 1065.610. Calculate the total reference work, W_{ref}, as described in § 1065.650. Divide the reference work by the duty cycle's time interval, $\Delta t_{dutycycle}$, to determine mean reference power, $\bar{p}_{ref}$.

(ii) Based on your engine design, estimate maximum power, P_{max}, the design speed at maximum power, f_{nmax}, the design maximum intake manifold boost pressure, P_{inmax}, and temperature, T_{inmax}. Also, estimate a mean fraction of power that is lost due to friction and pumping, $\bar{P}$. Use this information along with the engine displacement volume, V_{disp}, an approximate volumetric efficiency, η_V, and the number of engine strokes per power stroke (two-stroke or four-stroke), N_{stroke}, to estimate the maximum raw exhaust molar flow rate, $\dot{n}_{exhmax}$.

(iii) Use your estimated values as described in the following example calculation:

$$\overline{x}_{exp} = \frac{e_{std} \cdot W_{ref}}{M \cdot \dot{n}_{exhmax} \cdot \Delta t_{duty\ cycle} \cdot \left(\frac{\overline{P}_{ref} + \left(\overline{P}_{frict} \cdot P_{max} \right)}{P_{max}} \right)}$$

Eq. 1065.602-15

$$\dot{n}_{exhmax} = \frac{p_{max} \cdot V_{disp} \cdot f_{nmax} \cdot \frac{2}{N_{stroke}} \cdot \eta_V}{R \cdot T_{max}}$$

Eq. 1065.602-16

Example:

$e_{NOX} = 2.5$ g/(kW·hr)
$W_{ref} = 11.883$ kW·hr
$M_{NOX} = 46.0055$ g/mol $= 46.0055 \cdot 10^{-6}$ g/µmol
$\Delta t_{dutycycle} = 20$ min $= 1200$ s
$\bar{P}_{ref} = 35.65$ kW
$\bar{P}_{frict} = 15\%$
$P_{max} = 125$ kW

p_{max} = 300 kPa = 300000 Pa
V_{disp} = 3.0 l = 0.0030 m³/r
f_{nmax} = 2800 r/min = 46.67 r/s
N_{stroke} = 4
η_V = 0.9
R = 8.314472 J/(mol·K)
T_{max} = 348.15 K

$$\dot{n}_{exhmax} = \frac{300000 \cdot 0.0030 \cdot 46.67 \cdot \frac{2}{4} \cdot 0.9}{8.314472 \cdot 348.15}$$

$$\dot{n}_{exhmax} = 6.53 \text{ mol/s}$$

$$\overline{x}_{exp} = \frac{2.5 \cdot 11.883}{46.0055 \cdot 10^{-6} \cdot 6.53 \cdot 1200 \cdot \left(\frac{35.65 + (0.15 \cdot 125)}{125} \right)}$$

$$\overline{x}_{exp} = 189.4 \text{ µmol/mol}$$

(2) To estimate the flow-weighted mean NMHC concentration in a CVS from a naturally aspirated nonroad spark-ignition engine at an NMHC standard of 0.5 g/(kW·hr), you may do the following:

(i) Based on your engine design, approximate a map of maximum torque versus speed and use it with the applicable normalized duty cycle in the standard-setting part to generate a reference duty cycle as described in § 1065.610. Calculate the total reference work, W_{ref}, as described in § 1065.650.

(ii) Multiply your CVS total molar flow rate by the time interval of the duty cycle, $\Delta t_{dutycycle}$. The result is the total diluted exhaust flow of the n_{dexh}.

(iii) Use your estimated values as described in the following example calculation:

$$\overline{x}_{NMHC} = \frac{e_{std} \cdot W_{ref}}{M \cdot \dot{n}_{dexh} \cdot \Delta t_{duty\ cycle}}$$

Eq. 1065.602-17

Example:

e_{NMHC} = 1.5 g/(kW·hr)
W_{ref} = 5.389 kW·hr
M_{NMHC} = 13.875389 g/mol = $13.875389 \cdot 10^{-6}$ g/µmol
$\dot{n}_{dexh}$ = 6.021 mol/s
$\Delta t_{dutycycle}$ = 30 min = 1800 s

$$\overline{x}_{NMHC} = \frac{1.5 \cdot 5.389}{13.875389 \cdot 10^{-6} \cdot 6.021 \cdot 1800}$$

$\bar{X}_{NMHC}$ = 53.8 µmol/mol

■ 349. Amend § 1065.610 by revising paragraphs (a)(1)(iv), (a)(2) introductory text, and (d)(3) introductory text to read as follows:

§ 1065.610 Duty cycle generation.

* * * * *

(a) * * *

(1) * * *

(iv) Transform the map into a normalized power-versus-speed map by dividing power terms by P_{max} and dividing speed terms by f_{nPmax}. Use the following equation to calculate a quantity representing the sum of squares from the normalized map:

$$\text{Sum of squares} = f_{nnorm\,i}^2 + P_{norm\,i}^2$$

Eq. 1065.610-1

Where:

i = an indexing variable that represents one recorded value of an engine map.
$f_{nnorm\,i}$ = an engine speed normalized by dividing it by f_{nPmax}.
$P_{norm\,i}$ = an engine power normalized by dividing it by P_{max}.

* * * * *

(2) For engines with a high-speed governor that will be subject to a reference duty cycle that specifies normalized speeds greater than 100%, calculate an alternate maximum test speed, $f_{ntest,alt}$, as specified in this paragraph (a)(2). If $f_{ntest,alt}$ is less than the measured maximum test speed, $f_{ntest,}$ determined in paragraph (a)(1) of this section, replace f_{ntest} with $f_{ntest,alt}$. In this case, $f_{ntest,alt}$ becomes the ''maximum test speed'' for that engine for all duty cycles. Note that § 1065.510 allows you to apply an optional declared maximum test speed to the final measured maximum test speed determined as an outcome of the comparison between $f_{ntest,}$ and $f_{ntest,alt}$ in this paragraph (a)(2). Determine $f_{ntest,alt}$ as follows:

* * * * *

(d) * * *

(3) *Required deviations.* We require the following deviations for variable-speed engines intended primarily for propulsion of a vehicle with an automatic transmission where that engine is subject to a transient duty cycle with idle operation. These deviations are intended to produce a more representative transient duty cycle for these applications. For steady-state duty cycles or transient duty cycles with no idle operation, the requirements in this paragraph (d)(3) do not apply. Idle points for steady-state duty cycles of such engines are to be run at conditions simulating neutral or park on the transmission. You may develop

different procedures for adjusting CITT as a function of speed, consistent with good engineering judgment.

* * * * *

■ 350. Amend § 1065.640 by revising paragraph (a), (b)(3), and (d)(1) and (3) to read as follows:

§ 1065.640 Flow meter calibration calculations.

* * * * *

(a) *Reference meter conversions.* The calibration equations in this section use molar flow rate, $\dot{n}_{ref}$, as a reference quantity. If your reference meter outputs a flow rate in a different quantity, such as standard volume rate, $\dot{V}_{stdref}$, actual volume rate, $\dot{V}_{actref}$, or mass rate, $\dot{m}_{ref}$, convert your reference meter output to a molar flow rate using the following equations, noting that while values for volume rate, mass rate, pressure, temperature, and molar mass may change during an emission test, you should ensure that they are as constant as practical for each individual set point during a flow meter calibration:

$$\dot{n}_{ref} = \frac{\dot{V}_{stdref} \cdot p_{std}}{T_{std} \cdot R} = \frac{\dot{V}_{actref} \cdot p_{act}}{T_{act} \cdot R} = \frac{\dot{m}_{ref}}{M_{mix}}$$

Eq. 1065.640-1

Where:

$\dot{n}_{ref}$ = reference molar flow rate.
$\dot{V}_{stdref}$ = reference volume flow rate corrected to a standard pressure and a standard temperature.
$\dot{V}_{actref}$ = reference volume flow rate at the actual pressure and temperature of the flow rate.
$\dot{m}_{ref}$ = reference mass flow.
p_{std} = standard pressure.
p_{act} = actual pressure of the flow rate.
T_{std} = standard temperature.
T_{act} = actual temperature of the flow rate.
R = molar gas constant.
M_{mix} = molar mass of the flow rate.

Example 1:

$\dot{V}_{stdref}$ = 1000.00 ft³/min = 0.471948 m³/s
p_{std} = 29.9213 in Hg @ 32 °F = 101.325 kPa = 101325 Pa = 101325 kg/(m·s²)
T_{std} = 68.0 °F = 293.15 K
R = 8.314472 J/(mol·K) = 8.314472 (m²·kg)/(s²·mol·K)

$$\dot{n}_{ref} = \frac{0.471948 \cdot 101325}{293.15 \cdot 8.314472}$$

$\dot{n}_{ref}$ = 19.619 mol/s

Example 2:

$\dot{m}_{ref}$ = 17.2683 kg/min = 287.805 g/s
M_{mix} = 28.7805 g/mol

$$\dot{n}_{ref} = \frac{287.805}{28.7805}$$

$\dot{n}_{ref}$ = 10.0000 mol/s

(b) * *

(3) Perform a least-squares regression of V_{rev}, versus K_s, by calculating slope, a_1, and intercept, a_0, as described for a floating intercept in § 1065.602.

* * * * *

(d) * * *

(1) Calculate the Reynolds number, $Re^{\#}$, for each reference molar flow rate, $\dot{n}_{ref}$, using the throat diameter of the venturi, d_t. Because the dynamic viscosity, μ, is needed to compute $Re^{\#}$, you may use your own fluid viscosity model to determine μ for your calibration gas (usually air), using good engineering judgment. Alternatively, you may use the Sutherland three-coefficient viscosity model to approximate μ, as shown in the following sample calculation for $Re^{\#}$:

$$Re^{\#} = \frac{4 \cdot M_{mix} \cdot \dot{n}_{ref}}{\pi \cdot d_t \cdot \mu}$$

Eq. 1065.640-10

Where, using the Sutherland three-coefficient viscosity model as captured in Table 4 of this section:

$$\mu = \mu_0 \cdot \left(\frac{T_{in}}{T_0}\right)^{\frac{3}{2}} \cdot \left(\frac{T_0 + S}{T_{in} + S}\right)$$

Eq. 1065.640-11

Where:

μ_0 = Sutherland reference viscosity.
T_0 = Sutherland reference temperature.
S = Sutherland constant.

TABLE 4 OF § 1065.640—SUTHERLAND THREE-COEFFICIENT VISCOSITY MODEL PARAMETERS

Gas[a]	μ_0 (kg/(m·s))	T_0 (K)	S (K)	Temperature range within ±2% error[b] (K)	Pressure limit[b] (kPa)
Air	$1.716 \cdot 10^{-5}$	273	111	170 to 1900	≤1800
CO_2	$1.370 \cdot 10^{-5}$	273	222	190 to 1700	≤3600
H_2O	$1.12 \cdot 10^{-5}$	350	1064	360 to 1500	≤10000
O_2	$1.919 \cdot 10^{-5}$	273	139	190 to 2000	≤2500
N_2	$1.663 \cdot 10^{-5}$	273	107	100 to 1500	≤1600

[a] Use tabulated parameters only for the pure gases, as listed. Do not combine parameters in calculations to calculate viscosities of gas mixtures.
[b] The model results are valid only for ambient conditions in the specified ranges.

Example:

$\mu_0 = 1.716 \cdot 10^{-5}$ kg/(m·s)
T_0 = 273 K
S = 111 K

$$\mu = 1.716 \cdot 10^{-5} \cdot \left(\frac{298.15}{273}\right)^{\frac{3}{2}} \cdot \left(\frac{273+111}{298.15+111}\right)$$

$\mu = 1.838 \cdot 10^{-5}$ kg/(m·s)
M_{mix} = 28.7805 g/mol = 0.0287805 kg/mol
$\dot{n}_{ref}$ = 57.625 mol/s
d_t = 152.4 mm = 0.1524 m
T_{in} = 298.15 K

$$Re^{\#} = \frac{4 \cdot 0.0287805 \cdot 57.625}{3.14159 \cdot 0.1524 \cdot 1.838 \cdot 10^{-5}}$$

$Re^{\#} = 7.538 \cdot 10^5$

* * * * *

(3) Perform a least-squares regression analysis to determine the best-fit coefficients for the equation and calculate *SEE* as described in § 1065.602. When using Eq. 1065.640–12, treat C_d as *y* and the radical term as y_{ref} and use Eq. 1065.602–12 to calculate *SEE*. When using another mathematical expression, use the same approach to substitute that expression into the numerator of Eq. 1065.602–12 and replace the 2 in the denominator with the number of coefficients in the mathematical expression.

* * * * *

■ 351. Amend § 1065.642 by revising paragraphs (b) and (c)(1) to read as follows:

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

* * * * *

(b) *SSV molar flow rate.* Calculate SSV molar flow rate, $\dot{n}$, as follows:

$$\dot{n} = C_d \cdot C_f \cdot \frac{A_t \cdot p_{in}}{\sqrt{Z \cdot M_{mix} \cdot R \cdot T_{in}}}$$

Eq. 1065.642-3

Where:
C_d = discharge coefficient, as determined based on the C_d versus $Re^{\#}$ equation in § 1065.640(d)(2).
C_f = flow coefficient, as determined in § 1065.640(c)(3)(ii).
A_t = venturi throat cross-sectional area.
p_{in} = static absolute pressure at the venturi inlet.
Z = compressibility factor.
M_{mix} = molar mass of gas mixture.
R = molar gas constant.
T_{in} = absolute temperature at the venturi inlet.

Example:

A_t = 0.01824 m²
p_{in} = 99.132 kPa = 99132 Pa = 99132 kg/(m·s²)
Z = 1
M_{mix} = 28.7805 g/mol = 0.0287805 kg/mol
R = 8.314472 J/(mol·K) = 8.314472 (m²·kg)/(s²·mol·K)
T_{in} = 298.15 K
$Re^{\#} = 7.232 \cdot 10^5$
γ = 1.399
β = 0.8
Δp = 2.312 kPa

Using Eq. 1065.640–7:

r_{ssv} = 0.997

Using Eq. 1065.640–6:

C_f = 0.274

Using Eq. 1065.640–5:

C_d = 0.990

$$\dot{n} = 0.990 \cdot 0.274 \cdot \frac{0.01824 \cdot 99132}{\sqrt{1 \cdot 0.0287805 \cdot 8.314472 \cdot 298.15}}$$

$\dot{n}$ = 58.173 mol/s

(c) * * *

(1) To calculate $\dot{n}$ through one venturi or one combination of venturis, use its respective mean C_d and other constants you determined according to § 1065.640 and calculate $\dot{n}$ as follows:

$$\dot{n} = C_d \cdot C_f \cdot \frac{A_t \cdot p_{in}}{\sqrt{Z \cdot M_{mix} \cdot R \cdot T_{in}}}$$

Eq. 1065.642-4

Where:
C_f = flow coefficient, as determined in § 1065.640(c)(3).

Example:

C_d = 0.985
C_f = 0.7219
A_t = 0.00456 m²
p_{in} = 98.836 kPa = 98836 Pa = 98836 kg/(m·s²)
Z = 1
M_{mix} = 28.7805 g/mol = 0.0287805 kg/mol
R = 8.314472 J/(mol·K) = 8.314472 (m²·kg)/(s²·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

* * * * *

■ 352. Add § 1065.643 to read as follows:

§ 1065.643 Carbon balance error verification calculations.

This section describes how to calculate quantities used in the carbon balance error verification described in § 1065.543. Paragraphs (a) through (c) of this section describe how to calculate the mass of carbon for a test interval from carbon-carrying fluid streams, intake air into the system, and exhaust emissions, respectively. Paragraph (d) of this section describes how to use these carbon masses to calculate four different quantities for evaluating carbon balance error. Use rectangular or trapezoidal integration methods to calculate masses and amounts over a test interval from continuously measured or calculated mass and molar flow rates.

(a) *Fuel and other fluids.* Determine the mass of fuel, DEF, and other carbon-carrying fluid streams, other than intake air, flowing into the system, m_{fluidj}, for each test interval. Note that § 1065.543 allows you to omit all flows other than fuel. You may determine the mass of DEF based on ECM signals for DEF flow rate. You may determine fuel mass during field testing based on ECM signals for fuel flow rate. Calculate the mass of carbon from the combined

carbon-carrying fluid streams flowing into the system as follows:

$$m_{Cfluid} = \sum_{j=1}^{N} \left(w_{Cj} \cdot m_{fluidj} \right)$$

Eq. 1065.643-1

Where:

j = an indexing variable that represents one carbon-carrying fluid stream.

N = total number of carbon-carrying fluid streams into the system over the test interval.

w_C = carbon mass fraction of the carbon-carrying fluid stream as determined in § 1065.655(d).

m_{fluid} = the mass of the carbon-carrying fluid stream determined over the test interval.

Example:

N = 2

w_{Cfuel} = 0.869

w_{CDEF} = 0.065

m_{fuel} = 1119.6 g

m_{DEF} = 36.8 g

m_{Cfluid} = 0.869·1119.6 + 0.065·36.8 = 975.3 g

(b) *Intake air.* Calculate the mass of carbon in the intake air, m_{Cair}, for each test interval using one of the methods in this paragraph (b). The methods are listed in order of preference. Use the first method where all the inputs are available for your test configuration. For methods that calculate m_{Cair} based on the amount of CO_2 per mole of intake air, we recommend measuring intake air concentration, but you may calculate x_{CO2int} using Eq. 1065.655–10 and letting $x_{CO2intdry}$ = 375 μmol/mol.

(1) Calculate m_{Cair}, using the following equation if you measure intake air flow:

$$m_{Cair} = M_C \cdot n_{int} \cdot x_{CO2int}$$

Eq. 1065.643-2

Where:

M_C = molar mass of carbon.

n_{int} = measured amount of intake air over the test interval.

x_{CO2int} = amount of intake air CO_2 per mole of intake air.

Example:

M_C = 12.0107 g/mol

n_{int} = 62862 mol

x_{CO2int} = 369 μmol/mol = 0.000369 mol/mol

m_{Cair} = 12.0107·62862·0.000369 = 278.6 g

(2) Calculate m_{Cair}, using the following equation if you measure or calculate raw exhaust flow and you calculate chemical balance terms:

$$m_{Cair} = M_C \cdot n_{exh} \cdot \left(1 - x_{H2Oexh}\right) \cdot x_{CO2int} \cdot \left(x_{dil/exhdry} + x_{int/exhdry} \right)$$

Eq. 1065.643-3

Where:

M_C = molar mass of carbon.

n_{exh} = calculated or measured amount of raw exhaust over the test interval.

x_{H2Oexh} = amount of H_2O in exhaust per mole of exhaust.

x_{CO2int} = amount of intake air CO_2 per mole of intake air.

$x_{dil/exhdry}$ = amount of excess air per mole of dry exhaust. Note that excess air and intake air have the same composition, so $x_{CO2dil} = x_{CO2int}$ and $x_{H2Odil} = x_{H2Oint}$ for the chemical balance calculation for raw exhaust.

$x_{int/exhdry}$ = amount of intake air required to produce actual combustion products per mole of dry exhaust.

Example:

M_C = 12.0107 g/mol

n_{exh} = 62862 mol

x_{H2Oexh} = 0.034 mol/mol

x_{CO2int} = 369 μmol/mol = 0.000369 mol/mol

$x_{dil/exhdry}$ = 0.570 mol/mol

$x_{int/exhdry}$ = 0.465 mol/mol

m_{Cair} = 12.0107·62862·(1 − 0.034)·0.000369·(0.570 + 0.465) = 278.6 g

(3) Calculate m_{Cair}, using the following equation if you measure raw exhaust flow:

$$m_{Cair} = M_C \cdot n_{exh} \cdot x_{CO2int}$$

Eq. 1065.643-4

Where:

M_C = molar mass of carbon.

n_{exh} = measured amount of raw exhaust over the test interval.

x_{CO2int} = amount of intake air CO_2 per mole of intake air.

Example:

M_C = 12.0107 g/mol

n_{exh} = 62862 mol

x_{CO2int} = 369 μmol/mol = 0.000369 mol/mol

m_{Cair} = 12.0107·62862·0.000369 = 278.6 g

(4) Calculate m_{Cair}, using the following equation if you measure diluted exhaust flow and dilution air flow:

$$m_{Cair} = M_C \cdot \left(n_{dexh} - n_{dil} \right) \cdot x_{CO2int}$$

Eq. 1065.643-5

Where:

M_C = molar mass of carbon.

n_{dexh} = measured amount of diluted exhaust over the test interval as determined in § 1065.642.

n_{dil} = measured amount of dilution air over the test interval as determined in § 1065.667(b).

x_{CO2int} = amount of intake air CO_2 per mole of intake air.

Example:

M_C = 12.0107 g/mol

n_{dexh} = 942930 mol

n_{dil} = 880068 mol

x_{CO2int} = 369 μmol/mol = 0.000369 mol/mol

m_{Cair} = 12.0107·(942930 − 880068)·0.000369 = 278.6 g

(5) Determined m_{Cair} based on ECM signals for intake air flow as described in paragraph (b)(1) of this section.

(6) If you measure diluted exhaust, determine m_{Cair} as described in paragraph (b)(4) of this section using a calculated amount of dilution air over the test interval as determined in § 1065.667(d) instead of the measured amount of dilution air.

(c) *Exhaust emissions.* Calculate the mass of carbon in exhaust emissions, m_{Cexh}, for each test interval as follows:

$$m_{Cexh} = M_C \cdot \left(\frac{m_{CO2}}{M_{CO2}} + \frac{m_{CO}}{M_{CO}} + \frac{m_{THC}}{M_{THC}} \right)$$

Eq. 1065.643-6

Where:

M_C = molar mass of carbon.

m_{CO2} = mass of CO_2 over the test interval as determined in § 1065.650(c).

M_{CO2} = molar mass of carbon dioxide.

m_{CO} = mass of CO over the test interval as determined in § 1065.650(c).

M_{CO} = molar mass of carbon monoxide.

m_{THC} = mass of THC over the test interval as determined in § 1065.650(c).

M_{THC} = effective C_1 molar mass of total hydrocarbon as defined in § 1065.1005(f)(2).

Example:

M_C = 12.0107 g/mol

m_{CO2} = 4567 g

M_{CO2} = 44.0095 g/mol

m_{CO} = 0.803 g

M_{CO} = 28.0101 g/mol

m_{THC} = 0.537 g

M_{THC} = 13.875389 g/mol

$$m_{Cexh} = 12.0107 \cdot \left(\frac{4567}{44.0095} + \frac{0.803}{28.0101} + \frac{0.537}{13.875389} \right) = 1247.2 \text{ g}$$

(d) *Carbon balance error quantities.* Calculate carbon balance error quantities as follows:

(1) Calculate carbon mass absolute error, ε_{aC}, for a test interval as follows:

$$\epsilon_{aC} = m_{Cexh} - m_{Cfluid} - m_{Cair}$$

Eq. 1065.643-7

Where:

m_{Cexh} = mass of carbon in exhaust emissions over the test interval as determined in paragraph (d) of this section.

m_{Cfluid} = mass of carbon in all the carbon-carrying fluid streams flowing into the system over the test interval as determined in paragraph (a) of this section.

m_{Cair} = mass of carbon in the intake air flowing into the system over the test interval as determined in paragraph (b) of this section.

Example:

m_{Cexh} = 1247.2 g

m_{Cfluid} = 975.3 g

m_{Cair} = 278.6 g

$\grave{O}_{aC}$ = 1247.2 − 975.3 − 278.6 = −6.7 g

(2) Calculate carbon mass rate absolute error, $\in_{aCrate}$, for a test interval as follows:

$$\epsilon_{aCrate} = \frac{\epsilon_{aC}}{t}$$

Eq. 1065.643-8

Where:

t = duration of the test interval.

Example:

$\in_{aC}$ = −6.7 g

t = 1202.2 s = 0.3339 hr

$$\epsilon_{aCrate} = \frac{-6.7}{0.3339} = -20.065 \text{ g/hr}$$

(3) Calculate carbon mass relative error, $\in_{rC}$, for a test interval as follows:

$$\epsilon_{rC} = \frac{\epsilon_{aC}}{m_{Cfluid} + m_{Cair}}$$

Eq. 1065.643-9

Example:

$\in_{aC}$ = −6.7 g

m_{Cfliud} = 975.3 g

m_{Cair} = 278.6 g

$$\epsilon_{rC} = \frac{-6.7}{975.3 + 278.6} = -0.0053$$

(4) Calculate composite carbon mass relative error, $\in_{rCcomp}$, for a duty cycle with multiple test intervals as follows:

(i) Calculate $\in_{rCcomp}$ using the following equation:

$$\epsilon_{\mathrm{rCcomp}} = \frac{\sum_{i=1}^{N} WF_i \cdot \frac{\left(m_{\mathrm{Cexh}i} - m_{\mathrm{Cfluid}i} - m_{\mathrm{Cair}i}\right)}{t_i}}{\sum_{i=1}^{N} WF_i \cdot \frac{\left(m_{\mathrm{Cfluid}i} + m_{\mathrm{Cair}i}\right)}{t_i}}$$

Eq. 1065.643-10

Where:

i = an indexing variable that represents one test interval.

N = number of test intervals.

WF = weighting factor for the test interval as defined in the standard-setting part.

m_{Cexh} = mass of carbon in exhaust emissions over the test interval as determined in paragraph (c) of this section.

m_{Cfluid} = mass of carbon in all the carbon-carrying fluid streams that flowed into the system over the test interval as determined in paragraph (a) of this section.

m_{Cair} = mass of carbon in the intake air that flowed into the system over the test interval as determined in paragraph (b) of this section.

t = duration of the test interval. For duty cycles with multiple test intervals of a prescribed duration, such as cold-start and hot-start transient cycles, set $t = 1$ for all test intervals. For discrete-mode steady-state duty cycles with multiple test intervals of varying duration, set *t* equal to the actual duration of each test interval.

(ii) The following example illustrates calculation of $\epsilon_{\mathrm{rCcomp}}$, for cold-start and hot-start transient cycles:

$N = 2$
$WF_1 = 1/7$
$WF_2 = 6/7$
$m_{\mathrm{Cexh1}} = 1255.3$ g
$m_{\mathrm{Cexh2}} = 1247.2$ g
$m_{\mathrm{Cfluid1}} = 977.8$ g
$m_{\mathrm{Cfluid2}} = 975.3$ g
$m_{\mathrm{Cair1}} = 280.2$ g
$m_{\mathrm{Cair2}} = 278.6$ g

$$\epsilon_{\mathrm{rCcomp}} = \frac{\frac{1}{7} \cdot \frac{\left(1255.3 - 977.8 - 280.2\right)}{1} + \frac{6}{7} \cdot \frac{\left(1247.2 - 975.3 - 278.6\right)}{1}}{\frac{1}{7} \cdot \frac{\left(977.8 + 280.2\right)}{1} + \frac{6}{7} \cdot \frac{\left(975.3 + 278.6\right)}{1}} = -0.0049$$

(iii) The following example illustrates calculation of $\epsilon_{\mathrm{rCcomp}}$ for multiple test intervals with varying duration, such as discrete-mode steady-state duty cycles:

$N = 2$
$WF_1 = 0.85$
$WF_2 = 0.15$
$m_{\mathrm{Cexh1}} = 2.873$ g
$m_{\mathrm{Cexh2}} = 0.125$ g
$m_{\mathrm{Cfluid1}} = 2.864$ g
$m_{\mathrm{Cfluid2}} = 0.095$ g
$m_{\mathrm{Cair1}} = 0.023$ g
$m_{\mathrm{Cair2}} = 0.024$ g
$t_1 = 123$ s
$t_2 = 306$ s

$$\epsilon_{\mathrm{rCcomp}} = \frac{0.85 \cdot \left(\frac{2.873 - 2.864 - 0.023}{123}\right) + 0.15 \cdot \left(\frac{0.125 - 0.095 - 0.024}{306}\right)}{0.85 \cdot \left(\frac{2.864 + 0.023}{123}\right) + 0.15 \cdot \left(\frac{0.095 + 0.024}{306}\right)} = -0.0047$$

■ 353. Amend § 1065.650 by revising paragraphs (b)(3) introductory text, (c)(1), (c)(2)(i) introductory text, (c)(3), (d) introductory text, (d)(7), (f)(2) introductory text, and (g) to read as follows:

§ 1065.650 Emission calculations.

* * * * *

(b) * * *

(3) For field testing, you may calculate the ratio of total mass to total work, where these individual values are determined as described in paragraph (f) of this section. You may also use this approach for laboratory testing, consistent with good engineering judgment. Good engineering judgment dictates that this method not be used if there are any work flow paths described in § 1065.210 that cross the system boundary, other than the primary output shaft (crankshaft). This is a special case in which you use a signal linearly proportional to raw exhaust molar flow rate to determine a value proportional to total emissions. You then use the same linearly proportional signal to determine total work using a chemical balance of fuel, DEF, intake air, and exhaust as described in § 1065.655, plus information about your engine's brake-specific fuel consumption. Under this method, flow meters need not meet accuracy specifications, but they must meet the applicable linearity and repeatability specifications in subpart D or J of this part. The result is a brake-specific emission value calculated as follows:

* * * * *

(c) * * *

(1) *Concentration corrections.* Perform the following sequence of preliminary calculations on recorded concentrations:

(i) Use good engineering judgment to time-align flow and concentration data to match transformation time, t_{50}, to within ±1 s.

(ii) Correct all gaseous emission analyzer concentration readings, including continuous readings, sample bag readings, and dilution air background readings, for drift as described in § 1065.672. Note that you must omit this step where brake-specific emissions are calculated without the drift correction for performing the drift

validation according to § 1065.550(b). When applying the initial THC and CH_4 contamination readings according to § 1065.520(f), use the same values for both sets of calculations. You may also use as-measured values in the initial set of calculations and corrected values in the drift-corrected set of calculations as described in § 1065.520(f)(7).

(iii) Correct all THC and CH_4 concentrations for initial contamination as described in § 1065.660(a), including continuous readings, sample bags readings, and dilution air background readings.

(iv) Correct all concentrations measured on a ''dry'' basis to a ''wet'' basis, including dilution air background concentrations, as described in § 1065.659.

(v) Calculate all NMHC and CH_4 concentrations, including dilution air background concentrations, as described in § 1065.660.

(vi) For emission testing with an oxygenated fuel, calculate any HC concentrations, including dilution air background concentrations, as described in § 1065.665. See subpart I of this part for testing with oxygenated fuels.

(vii) Correct all the NO_X concentrations, including dilution air background concentrations, for intake-air humidity as described in § 1065.670.

(2) * * *

(i) *Varying flow rate.* If you continuously sample from a changing exhaust flow rate, time align and then multiply concentration measurements by the flow rate from which you extracted it. We consider the following to be examples of changing flows that require a continuous multiplication of concentration times molar flow rate: Raw exhaust, exhaust diluted with a constant flow rate of dilution air, and CVS dilution with a CVS flow meter that does not have an upstream heat exchanger or electronic flow control. This multiplication results in the flow rate of the emission itself. Integrate the emission flow rate over a test interval to determine the total emission. If the total emission is a molar quantity, convert this quantity to a mass by multiplying it by its molar mass, *M*. The result is the mass of the emission, *m*. Calculate *m* for continuous sampling with variable flow using the following equations:

* * * * *

(3) *Batch sampling.* For batch sampling, the concentration is a single value from a proportionally extracted batch sample (such as a bag, filter, impinger, or cartridge). In this case, multiply the mean concentration of the batch sample by the total flow from which the sample was extracted. You may calculate total flow by integrating a changing flow rate or by determining the mean of a constant flow rate, as follows:

(i) *Varying flow rate.* If you collect a batch sample from a changing exhaust flow rate, extract a sample proportional to the changing exhaust flow rate. We consider the following to be examples of changing flows that require proportional sampling: Raw exhaust, exhaust diluted with a constant flow rate of dilution air, and CVS dilution with a CVS flow meter that does not have an upstream heat exchanger or electronic flow control. Integrate the flow rate over a test interval to determine the total flow from which you extracted the proportional sample. Multiply the mean concentration of the batch sample by the total flow from which the sample was extracted. If the total emission is a molar quantity, convert this quantity to a mass by multiplying it by its molar mass, *M*. The result is the mass of the emission, *m*. In the case of PM emissions, where the mean PM concentration is already in units of mass per mole of sample, $\bar{M}_{PM}$, simply multiply it by the total flow. The result is the total mass of PM, m_{PM}. Calculate *m* for batch sampling with variable flow using the following equation:

$$m = M \cdot \overline{x} \cdot \sum_{i=1}^{N} \dot{n}_i \cdot \Delta t$$

Eq. 1065.650-6

Example:

M_{NO_X} = 46.0055 g/mol
N = 9000
$\bar{X}_{NO_X}$ = 85.6 μmol/mol = 85.6·10^{-6} mol/mol
$\dot{n}_{dexh1}$ = 25.534 mol/s
$\dot{n}_{dexh2}$ = 26.950 mol/s
f_{record} = 5 Hz

Using Eq. 1065.650–5:

Δt = 1/5 = 0.2
m_{NOx} = 46.0055·85.6·10^{-6}·(25.534 + 26.950 +...+ $\dot{n}_{exh9000}$)·0.2
m_{NOx} = 4.201 g

(ii) *Constant flow rate.* If you batch sample from a constant exhaust flow rate, extract a sample at a proportional or constant flow rate. We consider the following to be examples of constant exhaust flows: CVS diluted exhaust with a CVS flow meter that has either an upstream heat exchanger, electronic flow control, or both. Determine the mean molar flow rate from which you extracted the constant flow rate sample. Multiply the mean concentration of the batch sample by the mean molar flow rate of the exhaust from which the sample was extracted, and multiply the result by the time of the test interval. If the total emission is a molar quantity, convert this quantity to a mass by multiplying it by its molar mass, *M*. The result is the mass of the emission, *m*. In the case of PM emissions, where the mean PM concentration is already in units of mass per mole of sample, $\bar{M}_{PM}$, simply multiply it by the total flow, and the result is the total mass of PM, m_{PM}.

(A) Calculate *m* for sampling with constant flow using the following equation:

$$m = M \cdot \overline{x} \cdot \overline{\dot{n}} \cdot \Delta t$$

Eq. 1065.650-7

(B) Calculate $\bar{M}$ for PM or any other analysis of a batch sample that yields a mass per mole of sample using the following equation:

$$\overline{M} = M \cdot \overline{x}$$

Eq. 1065.650-8

(C) The following example illustrates a calculation of m_{PM}:

$\bar{M}_{PM}$ = 144.0 μg/mol = 144.0·10^{-6} g/mol
$\overline{n\&}_{dexh}$ = 57.692 mol/s
Δt = 1200 s
m_{PM} = 144.0·10^{-6}·57.692·1200
m_{PM} = 9.9692 g

* * * * *

(d) *Total work over a test interval.* To calculate the total work from the engine over a test interval, add the total work from all the work paths described in § 1065.210 that cross the system boundary including electrical energy/work, mechanical shaft work, and fluid pumping work. For all work paths, except the engine's primary output shaft (crankshaft), the total work for the path over the test interval is the integration of the net work flow rate (power) out of the system boundary. When energy/work flows into the system boundary, this work flow rate signal becomes negative; in this case, include these negative work rate values in the integration to calculate total work from that work path. Some work paths may result in a negative total work. Include negative total work values from any work path in the calculated total work from the engine rather than setting the values to zero. The rest of this paragraph (d) describes how to calculate total work from the engine's primary output shaft over a test interval. Before integrating power on the engine's primary output shaft, adjust the speed and torque data for the time alignment used in § 1065.514(c). Any advance or delay used on the feedback signals for cycle validation must also be used for

calculating work. Account for work of accessories according to § 1065.110. Exclude any work during cranking and starting. Exclude work during actual motoring operation (negative feedback torques), unless the engine was connected to one or more energy storage devices. Examples of such energy storage devices include hybrid powertrain batteries and hydraulic accumulators, like the ones illustrated in Figure 1 of § 1065.210. Exclude any work during reference zero-load idle periods (0% speed or idle speed with 0 N·m reference torque). Note, that there must be two consecutive reference zero load idle points to establish a period where the zero-load exclusion applies. Include work during idle points with simulated minimum torque such as Curb Idle Transmissions Torque (CITT) for automatic transmissions in ''drive''. The work calculation method described in paragraphs (d)(1) though (7) of this section meets the requirements of this paragraph (d) using rectangular integration. You may use other logic that gives equivalent results. For example, you may use a trapezoidal integration method as described in paragraph (d)(8) of this section.

* * * * *

(7) Integrate the resulting values for power over the test interval. Calculate total work as follows:

$$W = \sum_{i=1}^{N} P_i \cdot \Delta t$$

Eq. 1065.650-10

Where:

W = total work from the primary output shaft.
P_i = instantaneous power from the primary output shaft over an interval i.

$$P_i = f_{ni} \cdot T_i$$

Eq. 1065.650-11

Example:

N = 9000
f_{n1} = 1800.2 r/min
f_{n2} = 1805.8 r/min
T_1 = 177.23 N·m
T_2 = 175.00 N·m
C_{rev} = 2·π rad/r
C_{t1} = 60 s/min
C_p = 1000 (N·m·rad/s)/kW
f_{record} = 5 Hz
C_{t2} = 3600 s/hr

$$P_1 = \frac{1800.2 \cdot 177.23 \cdot 2 \cdot 3.14159}{60 \cdot 1000}$$

P_1 = 33.41 kW

P_2 = 33.09 kW

Using Eq. 1065.650–5:

Δt = 1/5 = 0.2 s

$$W = \frac{(33.41 + 33.09 + ... + P_{9000}) \cdot 0.2}{3600}$$

W = 16.875 kW·hr

* * * * *

(f) * * *

(2) *Total work.* To calculate a value proportional to total work over a test interval, integrate a value that is proportional to power. Use information about the brake-specific fuel consumption of your engine, e_{fuel}, to convert a signal proportional to fuel flow rate to a signal proportional to power. To determine a signal proportional to fuel flow rate, divide a signal that is proportional to the mass rate of carbon products by the fraction of carbon in your fuel, w_C. You may use a measured w_C or you may use default values for a given fuel as described in § 1065.655(e). Calculate the mass rate of carbon from the amount of carbon and water in the exhaust, which you determine with a chemical balance of fuel, DEF, intake air, and exhaust as described in § 1065.655. In the chemical balance, you must use concentrations from the flow that generated the signal proportional to molar flow rate, $\tilde{n}$, in paragraph (e)(1) of this section. Calculate a value proportional to total work as follows:

* * * * *

(g) *Brake-specific emissions over a duty cycle with multiple test intervals.* The standard-setting part may specify a duty cycle with multiple test intervals, such as with discrete-mode steady-state testing. Unless we specify otherwise, calculate composite brake-specific emissions over the duty cycle as described in this paragraph (g). If a measured mass (or mass rate) is negative, set it to zero for calculating composite brake-specific emissions, but leave it unchanged for drift validation. In the case of calculating composite brake-specific emissions relative to a combined emission standard (such as a NO_X + NMHC standard), change any negative mass (or mass rate) values to zero for a particular pollutant before combining the values for the different pollutants.

(1) Use the following equation to calculate composite brake-specific emissions for duty cycles with multiple test intervals all with prescribed durations, such as cold-start and hot-start transient cycles:

$$e_{comp} = \frac{\sum_{i=1}^{N} WF_i \cdot m_i}{\sum_{i=1}^{N} WF_i \cdot W_i}$$

Eq. 1065.650-17

Where:

i = test interval number.
N = number of test intervals.
WF = weighting factor for the test interval as defined in the standard-setting part.
m = mass of emissions over the test interval as determined in paragraph (c) of this section.
W = total work from the engine over the test interval as determined in paragraph (d) of this section.

Example:

N = 2
WF_1 = 0.1428
WF_2 = 0.8572
m_1 = 70.125 g
m_2 = 64.975 g
W_1 = 25.783 kW·hr
W_2 = 25.783 kW·hr

$$e_{NO_x comp} = \frac{(0.1428 \cdot 70.125) + (0.8572 \cdot 64.975)}{(0.1428 \cdot 25.783) + (0.8572 \cdot 25.783)}$$

$e_{NO_X comp}$ = 2.548 g/kW·hr

(2) Calculate composite brake-specific emissions for duty cycles with multiple test intervals that allow use of varying duration, such as discrete-mode steady-state duty cycles, as follows:

(i) Use the following equation if you calculate brake-specific emissions over test intervals based on total mass and total work as described in paragraph (b)(1) of this section:

$$e_{comp} = \frac{\sum_{i=1}^{N} WF_i \cdot \frac{m_i}{t_i}}{\sum_{i=1}^{N} WF_i \cdot \frac{W_i}{t_i}}$$

Eq. 1065.650-18

Where:

i = test interval number.
N = number of test intervals.
WF = weighting factor for the test interval as defined in the standard-setting part.
m = mass of emissions over the test interval as determined in paragraph (c) of this section.
W = total work from the engine over the test interval as determined in paragraph (d) of this section.
t = duration of the test interval.

Example:

N = 2
WF_1 = 0.85
WF_2 = 0.15
m_1 = 1.3753 g

m_2 = 0.4135 g
t_1 = 120 s
t_2 = 200 s
W_1 = 2.8375 kW·hr
W_2 = 0.0 kW·hr

$$e_{NO_x comp} = \frac{\left(0.85 \cdot \frac{1.3753}{120}\right) + \left(0.15 \cdot \frac{0.4135}{200}\right)}{\left(0.85 \cdot \frac{2.8375}{120}\right) + \left(0.15 \cdot \frac{0.0}{200}\right)}$$

$e_{NO_x comp}$ = 0.5001 g/kW·hr

(ii) Use the following equation if you calculate brake-specific emissions over test intervals based on the ratio of mass rate to power as described in paragraph (b)(2) of this section:

$$e_{comp} = \frac{\sum_{i=1}^{N} WF_i \cdot \dot{\overline{m}}_i}{\sum_{i=1}^{N} WF_i \cdot \overline{P}_i}$$

Eq. 1065.650-19

Where:

i = test interval number.
N = number of test intervals.
WF = weighting factor for the test interval as defined in the standard-setting part.
$\dot{\overline{m}}$ = mean steady-state mass rate of emissions over the test interval as determined in paragraph (e) of this section.
= mean steady-state power over the test interval as described in paragraph (e) of this section.

Example:

N = 2
WF_1 = 0.85
WF_2 = 0.15
$\dot{\overline{m}}_1$ = 2.25842 g/hr
$\dot{\overline{m}}_2$ = 0.063443 g/hr
$\overline{P}_1$ = 4.5383 kW
$\overline{P}_2$ = 0.0 kW

$$e_{NO_x comp} = \frac{(0.85 \cdot 2.25842) + (0.15 \cdot 0.063443)}{(0.85 \cdot 4.5383) + (0.15 \cdot 0.0)}$$

$e_{NO_x comp}$ = 0.5001 g/kW·hr

* * * * *

■ 354. Amend § 1065.655 by revising the section heading and paragraphs (a), (c) introductory text, (c)(3), (d) introductory text, (e), and (f)(3) to read as follows:

§ 1065.655 Chemical balances of fuel, DEF, intake air, and exhaust.

(a) *General.* Chemical balances of fuel, intake air, and exhaust may be used to calculate flows, the amount of water in their flows, and the wet concentration of constituents in their flows. With one flow rate of either fuel, intake air, or exhaust, you may use chemical balances to determine the flows of the other two. For example, you may use chemical balances along with either intake air or fuel flow to determine raw exhaust flow. Note that chemical balance calculations allow measured values for the flow rate of diesel exhaust fluid for engines with urea-based selective catalytic reduction.

* * * * *

(c) *Chemical balance procedure.* The calculations for a chemical balance involve a system of equations that require iteration. We recommend using a computer to solve this system of equations. You must guess the initial values of up to three quantities: The amount of water in the measured flow, x_{H2Oexh}, fraction of dilution air in diluted exhaust, $x_{dil/exh}$, and the amount of products on a C_1 basis per dry mole of dry measured flow, $x_{Ccombdry}$. You may use time-weighted mean values of combustion air humidity and dilution air humidity in the chemical balance; as long as your combustion air and dilution air humidities remain within tolerances of ±0.0025 mol/mol of their respective mean values over the test interval. For each emission concentration, x, and amount of water, x_{H2Oexh}, you must determine their completely dry concentrations, x_{dry} and $x_{H2Oexhdry}$. You must also use your fuel mixture's atomic hydrogen-to-carbon ratio, α, oxygen-to-carbon ratio, β, sulfur-to-carbon ratio, γ, and nitrogen-to-carbon ratio, δ; you may optionally account for diesel exhaust fluid (or other fluids injected into the exhaust), if applicable. You may calculate α, β, γ, and δ based on measured fuel composition or based on measured fuel and diesel exhaust fluid (or other fluids injected into the exhaust) composition together, as described in paragraph (e) of this section. You may alternatively use any combination of default values and measured values as described in paragraph (e) of this section. Use the following steps to complete a chemical balance:

* * * * *

(3) Use the following symbols and subscripts in the equations for performing the chemical balance calculations in this paragraph (c):

TABLE 1 OF § 1065.655—SYMBOLS AND SUBSCRIPTS FOR CHEMICAL BALANCE EQUATIONS

$x_{dil/exh}$	Amount of dilution gas or excess air per mole of exhaust
x_{H2Oexh}	amount of H_2O in exhaust per mole of exhaust
$x_{Ccombdry}$	amount of carbon from fuel and any injected fluids in the exhaust per mole of dry exhaust
x_{H2dry}	amount of H_2 in exhaust per amount of dry exhaust
K_{H2Ogas}	water-gas reaction equilibrium coefficient; you may use 3.5 or calculate your own value using good engineering judgment
$x_{H2Oexhdry}$	amount of H_2O in exhaust per dry mole of dry exhaust
$x_{prod/intdry}$	amount of dry stoichiometric products per dry mole of intake air
$x_{dil/exhdry}$	amount of dilution gas and/or excess air per mole of dry exhaust
$x_{int/exhdry}$	amount of intake air required to produce actual combustion products per mole of dry (raw or diluted) exhaust
$x_{raw/exhdry}$	amount of undiluted exhaust, without excess air, per mole of dry (raw or diluted) exhaust
x_{O2int}	amount of intake air O_2 per mole of intake air
$x_{CO2intdry}$	amount of intake air CO_2 per mole of dry intake air; you may use $x_{CO2intdry}$ = 375 μmol/mol, but we recommend measuring the actual concentration in the intake air
$x_{H2Ointdry}$	amount of intake air H_2O per mole of dry intake air
x_{CO2int}	amount of intake air CO_2 per mole of intake air
x_{CO2dil}	amount of dilution gas CO2 per mole of dilution gas
$x_{CO2dildry}$	amount of dilution gas CO_2 per mole of dry dilution gas; if you use air as diluent, you may use $x_{CO2dildry}$ = 375 μmol/mol, but we recommend measuring the actual concentration in the intake air
$x_{H2Odildry}$	amount of dilution gas H_2O per mole of dry dilution gas
x_{H2Odil}	amount of dilution gas H_2O per mole of dilution gas
$x_{[emission]meas}$	amount of measured emission in the sample at the respective gas analyzer
$x_{[emission]dry}$	amount of emission per dry mole of dry sample
$x_{H2O[emission]meas}$	amount of H_2O in sample at emission-detection location; measure or estimate these values according to § 1065.145(e)(2)
x_{H2Oint}	amount of H_2O in the intake air, based on a humidity measurement of intake air
α	atomic hydrogen-to-carbon ratio of the fuel (or mixture of test fuels) and any injected fluids

TABLE 1 OF § 1065.655—SYMBOLS AND SUBSCRIPTS FOR CHEMICAL BALANCE EQUATIONS—Continued

$x_{dil/exh}$	Amount of dilution gas or excess air per mole of exhaust
β	atomic oxygen-to-carbon ratio of the fuel (or mixture of test fuels) and any injected fluids
γ	atomic sulfur-to-carbon ratio of the fuel (or mixture of test fuels) and any injected fluids
δ	atomic nitrogen-to-carbon ratio of the fuel (or mixture of test fuels) and any injected fluids

* * * * *

(d) *Carbon mass fraction of fuel.* Determine carbon mass fraction of fuel, w_C, based on the fuel properties as determined in paragraph (e) of this section, optionally accounting for diesel exhaust fluid's contribution to α, β, γ, and δ, or other fluids injected into the exhaust, if applicable (for example, the engine is equipped with an emission control system that utilizes DEF). Calculate w_C using the following equation:

* * * * *

(e) *Fuel and diesel exhaust fluid composition.* Determine fuel and diesel exhaust fluid composition represented by α, β, γ, and δ as described in this paragraph (e). When using measured fuel or diesel exhaust fluid properties, you must determine values for α and β in all cases. If you determine compositions based on measured values and the default value listed in Table 2 of this section is zero, you may set γ and δ to zero; otherwise determine γ and δ (along with α and β) based on measured values. Determine elemental mass fractions and values for α, β, γ, and δ as follows:

(1) For liquid fuels, use the default values for α, β, γ, and δ in Table 2 of this section or determine mass fractions of liquid fuels for calculation of α, β, γ, and δ as follows:

(i) Determine the carbon and hydrogen mass fractions according to ASTM D5291 (incorporated by reference in § 1065.1010). When using ASTM D5291 to determine carbon and hydrogen mass fractions of gasoline (with or without blended ethanol), use good engineering judgment to adapt the method as appropriate. This may include consulting with the instrument manufacturer on how to test high-volatility fuels. Allow the weight of volatile fuel samples to stabilize for 20 minutes before starting the analysis; if the weight still drifts after 20 minutes, prepare a new sample). Retest the sample if the carbon, hydrogen, oxygen, sulfur, and nitrogen mass fractions do not add up to a total mass of 100 ± 0.5%; if you do not measure oxygen, you may assume it has a zero concentration for this specification. You may also assume that sulfur and nitrogen have a zero concentration for all fuels except residual fuel blends.

(ii) Determine oxygen mass fraction of gasoline (with or without blended ethanol) according to ASTM D5599 (incorporated by reference in § 1065.1010). For all other liquid fuels, determine the oxygen mass fraction using good engineering judgment.

(iii) Determine the nitrogen mass fraction according to ASTM D4629 or ASTM D5762 (incorporated by reference in § 1065.1010) for all liquid fuels. Select the correct method based on the expected nitrogen content.

(iv) Determine the sulfur mass fraction according to subpart H of this part.

(2) For gaseous fuels and diesel exhaust fluid, use the default values for α, β, γ, and δ in Table 2 of this section, or use good engineering judgment to determine those values based on measurement.

(3) For nonconstant fuel mixtures, you must account for the varying proportions of the different fuels. This paragraph (e)(3) generally applies for dual-fuel and flexible-fuel engines, but it also applies if diesel exhaust fluid is injected in a way that is not strictly proportional to fuel flow. Account for these varying concentrations either with a batch measurement that provides averaged values to represent the test interval, or by analyzing data from continuous mass rate measurements. Application of average values from a batch measurement generally applies to situations where one fluid is a minor component of the total fuel mixture, for example dual-fuel and flexible-fuel engines with diesel pilot injection, where the diesel pilot fuel mass is less than 5% of the total fuel mass and diesel exhaust fluid injection; consistent with good engineering judgment.

(4) Calculate α, β, γ, and δ using the following equations:

$$\alpha = \frac{M_C}{M_H} \cdot \frac{\sum_{j=1}^{N} \dot{m}_j \cdot w_{Hj}}{\sum_{j=1}^{N} \dot{m}_j \cdot w_{Cj}}$$

Eq. 1065.655-20

$$\beta = \frac{M_C}{M_O} \cdot \frac{\sum_{j=1}^{N} \dot{m}_j \cdot w_{Oj}}{\sum_{j=1}^{N} \dot{m}_j \cdot w_{Cj}}$$

Eq. 1065.655-21

$$\gamma = \frac{M_C}{M_S} \cdot \frac{\sum_{j=1}^{N} \dot{m}_j \cdot w_{Sj}}{\sum_{j=1}^{N} \dot{m}_j \cdot w_{Cj}}$$

Eq. 1065.655-22

$$\delta = \frac{M_C}{M_N} \cdot \frac{\sum_{j=1}^{N} \dot{m}_j \cdot w_{Nj}}{\sum_{j=1}^{N} \dot{m}_j \cdot w_{Cj}}$$

Eq. 1065.655-23

Where:

N = total number of fuels and injected fluids over the duty cycle.

j = an indexing variable that represents one fuel or injected fluid, starting with $j = 1$.

$\dot{m}_j$ = the mass flow rate of the fuel or any injected fluid j. For applications using a single fuel and no DEF fluid, set this value to 1. For batch measurements, divide the total mass of fuel over the test interval duration to determine a mass rate.

w_{Hj} = hydrogen mass fraction of fuel or any injected fluid j.

w_{Cj} = carbon mass fraction of fuel or any injected fluid j.

w_{Oj} = oxygen mass fraction of fuel or any injected fluid j.

w_{Sj} = sulfur mass fraction of fuel or any injected fluid j.

w_{Nj} = nitrogen mass fraction of fuel or any injected fluid j.

Example:

$N = 1$
$j = 1$
$\dot{m}_1 = 1$
$w_{H1} = 0.1239$
$w_{C1} = 0.8206$
$w_{O1} = 0.0547$
$w_{S1} = 0.00066$
$w_{N1} = 0.000095$
$M_C = 12.0107$

M_H = 1.00794
M_O = 15.9994
M_S = 32.065
M_N = 14.0067

$$\alpha = \frac{12.0107 \cdot 1 \cdot 0.1239}{1.00794 \cdot 1 \cdot 0.8206}$$

$$\beta = \frac{12.0107 \cdot 1 \cdot 0.0547}{15.9994 \cdot 1 \cdot 0.8206}$$

$$\gamma = \frac{12.0107 \cdot 1 \cdot 0.00066}{32.065 \cdot 1 \cdot 0.8206}$$

$$\delta = \frac{12.0107 \cdot 1 \cdot 0.000095}{14.0067 \cdot 1 \cdot 0.8206}$$

α = 1.799
β = 0.05004
γ = 0.0003012
δ = 0.0001003

(5) Table 2 follows:

TABLE 2 OF §1065.655–DEFAULT VALUES OF α, β, γ, δ, AND w_C

Fuel or injected fluid	Atomic hydrogen, oxygen, sulfur, and nitrogen-to-carbon ratios $CH_\alpha O_\beta S_\gamma N_\delta$	Carbon mass fraction, w_C g/g
Gasoline	$CH_{1.85}O_0S_0N_0$	0.866
E10 Gasoline	$CH_{1.92}O_{0.03}S_0N_0$	0.833
E15 Gasoline	$CH_{1.95}O_{0.05}S_0N_0$	0.817
E85 Gasoline	$CH_{2.73}O_{0.38}S_0N_0$	0.576
E100 Ethanol	$CH_3O_{0.5}S_0N_0$	0.521
M100 Methanol	$CH_4O_1S_0N_0$	0.375
#1 Diesel	$CH_{1.93}O_0S_0N_0$	0.861
#2 Diesel	$CH_{1.80}O_0S_0N_0$	0.869
Liquefied petroleum gas	$CH_{2.64}O_0S_0N_0$	0.819
Natural gas	$CH_{3.78}O_{0.016}S_0N_0$	0.747
Residual fuel blends	Must be determined by measured fuel properties as described in paragraph (e)(1) of this section.	
Diesel exhaust fluid	$CH_{17.85}O_{7.92}S_0N_2$	0.065

(f) * * *

(3) *Fluid mass flow rate calculation.* This calculation may be used only for steady-state laboratory testing. You may not use this calculation if the standard-setting part requires carbon balance error verification as described in § 1065.543. See § 1065.915(d)(5)(iv) for application to field testing. Calculate $\dot{n}_{exh}$ based on $\dot{m}_j$ using the following equation:

$$\dot{n}_{exh} = \sum_{j=1}^{N} \dot{m}_j \cdot \frac{w_{C_j} \cdot \left(1 + x_{H2Oexhdry\,j}\right)}{M_C \cdot x_{Ccombdry_j}}$$

Eq. 1065.655-25

Where:

$\dot{n}_{exh}$ = raw exhaust molar flow rate from which you measured emissions.
j = an indexing variable that represents one fuel or injected fluid, starting with j = 1.
N = total number of fuels and injected fluids over the duty cycle.
$\dot{m}_j$ = the mass flow rate of the fuel or any injected fluid j.
w_{Cj} = carbon mass fraction of the fuel and any injected fluid j.

Example:

N = 1
j = 1
$\dot{m}_1$ = 7.559 g/s
w_{C1} = 0.869 g/g
M_C = 12.0107 g/mol
$\chi_{Ccombdry1}$ = 99.87 mmol/mol = 0.09987 mol/mol
$\chi_{H2Oexhdry1}$ = 107.64 mmol/mol = 0.10764 mol/mol

$$\dot{n}_{exh} = 7.559 \cdot \frac{0.869 \cdot (1 + 0.10764)}{12.0107 \cdot 0.09987}$$

$\dot{n}_{exh}$ = 6.066 mol/s

* * * * *

■ 355. Amend § 1065.659 by revising paragraph (c)(2) and (3) to read as follows:

§ 1065.659 Removed water correction.

* * * * *

(c) * * *

(2) If the measurement comes from raw exhaust, you may determine the amount of water based on intake-air humidity, plus a chemical balance of fuel, DEF, intake air, and exhaust as described in § 1065.655.

(3) If the measurement comes from diluted exhaust, you may determine the amount of water based on intake-air humidity, dilution air humidity, and a chemical balance of fuel, DEF, intake air, and exhaust as described in § 1065.655.

* * * * *

■ 356. Amend § 1065.660 by adding paragraphs (a)(5) and (6) and revising paragraphs (b)(2) introductory text, (b)(2)(ii) introductory text, (b)(2)(iii) introductory text, (b)(3) introductory text, (b)(4), (c)(2), (d) introductory text, (d)(1) introductory text, (d)(1)(ii) introductory text, (d)(1)(iii) introductory text, (d)(2), and (e) to read as follows:

§ 1065.660 THC, NMHC, NMNEHC, CH_4, and C_2H_6 determination.

(a) * * *

(5) You may calculate THC as the sum of NMHC and CH_4 if you determine CH_4 with an FTIR as described in paragraph (d)(2) of this section and NMHC with an FTIR using the additive method from paragraph (b)(4) of this section.

(6) You may calculate THC as the sum of NMNEHC, C_2H_6, and CH_4 if you determine CH_4 with an FTIR as described in paragraph (d)(2) of this section, C_2H_6 with an FTIR as described in paragraph (e) of this section, and NMNEHC with an FTIR using the additive method from paragraph (c)(3) of this section.

(b) * * *

(2) For nonmethane cutters, calculate χ_{NMHC} using the nonmethane cutter's methane penetration fraction, $PF_{CH4[NMC\text{-}FID]}$, and the ethane response factor penetration fraction, $RFPF_{C2H6[NMC\text{-}FID]}$, from § 1065.365, the THC FID's methane response factor, $RF_{CH4[THC\text{-}FID]}$, from § 1065.360, the initial THC contamination and dry-to-wet corrected THC concentration, $\chi_{THC[THC\text{-}FID]cor}$, as determined in paragraph (a) of this section, and the dry-to-wet corrected methane concentration, $\chi_{THC[NMC\text{-}FID]cor}$, optionally corrected for initial THC contamination as determined in paragraph (a) of this section.

* * * * *

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

* * * * *

(iii) Use the following equation for penetration fractions determined using an NMC configuration as outlined in § 1065.365(f) or for penetration fractions determined as a function of molar water concentration using an NMC configuration as outlined in § 1065.365(d):

* * * * *

(3) For a GC-FID or FTIR, calculate χ_{NMHC} using the THC analyzer's methane response factor, $RF_{CH4[THC\text{-}FID]}$, from § 1065.360, and the initial THC contamination and dry-to-wet corrected THC concentration, $\chi_{THC[THC\text{-}FID]cor}$, as determined in paragraph (a) of this section as follows:

* * * * *

(4) For an FTIR, calculate χ_{NMHC} by summing the hydrocarbon species listed in § 1065.266(c) as follows:

$$x_{NMHC} = \sum_{i=1}^{N} \left(x_{HCi} - x_{HCi\text{-}init} \right)$$

Eq. 1065.660-6

Where:

χ_{NMHC} = concentration of NMHC.

χ_{HCi} = the C_1-equivalent concentration of hydrocarbon species *i* as measured by the FTIR, not corrected for initial contamination.

$\chi_{HCi\text{-}init}$ = the C_1-equivalent concentration of the initial system contamination (optional) of hydrocarbon species *i*, dry-to-wet corrected, as measured by the FTIR.

Example:

χ_{C2H6} = 4.9 µmol/mol
χ_{C2H4} = 0.9 µmol/mol
χ_{C2H2} = 0.8 µmol/mol
χ_{C3H8} = 0.4 µmol/mol
χ_{C3H6} = 0.5 µmol/mol
χ_{C4H10} = 0.3 µmol/mol
χ_{CH2O} = 0.8 µmol/mol
χ_{C2H4O} = 0.3 µmol/mol
χ_{CH2O2} = 0.1 µmol/mol
χ_{CH4O} = 0.1 µmol/mol
χ_{NMHC} = 4.9 + 0.9 + 0.8 + 0.4 + 0.5 + 0.3 + 0.8 + 0.3 + 0.1 + 0.1
$\chi_{NMH}C$ = 9.1 µmol/mol

(c) * * *

(2) For a GC-FID, NMC FID, or FTIR, calculate χ_{NMNEHC} using the THC analyzer's methane response factor, $RF_{CH4[THC\text{-}FID]}$, and ethane response factor, $RF_{C2H6[THC\text{-}FID]}$, from § 1065.360, the initial contamination and dry-to-wet corrected THC concentration, $\chi_{THC[THC\text{-}FID]cor}$, as determined in paragraph (a) of this section, the dry-to-wet corrected methane concentration, χ_{CH4}, as determined in paragraph (d) of this section, and the dry-to-wet corrected ethane concentration, χ_{C2H6}, as determined in paragraph (e) of this section as follows:

$$x_{NMNEHC} = x_{THC[THC\text{-}FID]cor} - RF_{CH4[THC\text{-}FID]} \cdot x_{CH4} - RF_{C2H6[THC\text{-}FID]} \cdot x_{C2H6}$$

Eq. 1065.660-7

Where:

χ_{NMNEHC} = concentration of NMNEHC.

$\chi_{THC[THC\text{-}FID]cor}$ = concentration of THC, initial THC contamination and dry-to-wet corrected, as measured by the THC FID.

$RF_{CH4[THC\text{-}FID]}$ = response factor of THC-FID to CH_4.

χ_{CH4} = concentration of CH_4, dry-to-wet corrected, as measured by the GC-FID, NMC FID, or FTIR.

$RF_{C2H6[THC\text{-}FID]}$ = response factor of THC-FID to C_2H_6.

χ_{C2H6} = the C_1-equivalent concentration of C_2H_6, dry-to-wet corrected, as measured by the GC-FID or FTIR.

Example:

$\chi_{THC[THC\text{-}FID]cor}$ = 145.6 µmol/mol
$RF_{CH4[THC\text{-}FID]}$ = 0.970
χ_{CH4} = 18.9 µmol/mol
$RF_{C2H6[THC\text{-}FID]}$ = 1.02
χ_{C2H6} = 10.6 µmol/mol

χ_{NMNEHC} = 145.6 − 0.970 · 18.9 − 1.02 · 10.6
χ_{NMNEHC} = 116.5 µmol/mol

* * * * *

(d) *CH_4 determination.* Use one of the following methods to determine methane concentration, χ_{CH4}:

(1) For nonmethane cutters, calculate χ_{CH4} using the nonmethane cutter's methane penetration fraction, $PF_{CH4[NMC\text{-}FID]}$, and the ethane response

factor penetration fraction, $RFPF_{C2H6[NMC\text{-}FID}$, from § 1065.365, the THC FID's methane response factor, $RF_{CH4[THC\text{-}FID]}$, from § 1065.360, the initial THC contamination and dry-to-wet corrected THC concentration, $\chi_{THC[THC\text{-}FID]cor}$, as determined in paragraph (a) of this section, and the dry-to-wet corrected methane concentration, $\chi_{THC[NMC\text{-}FID]cor}$, optionally corrected for initial THC contamination as determined in paragraph (a) of this section.

* * * * *

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

* * * * *

(iii) Use the following equation for penetration fractions determined using an NMC configuration as outlined in § 1065.365(f) or for penetration fractions determined as a function of molar water concentration using an NMC configuration as outlined in § 1065.365(d):

* * * * *

(2) For a GC-FID or FTIR, χ_{CH4} is the actual dry-to-wet corrected methane concentration as measured by the analyzer.

(e) *C_2H_6 determination.* For a GC-FID or FTIR, χ_{C2H6} is the C_1-equivalent, dry-to-wet corrected ethane concentration as measured by the analyzer.

■ 357. Amend § 1065.665 by revising paragraph (a) to read as follows:

§ 1065.665 THCE and NMHCE determination.

(a) If you measured an oxygenated hydrocarbon's mass concentration, first calculate its molar concentration in the exhaust sample stream from which the sample was taken (raw or diluted exhaust), and convert this into a C_1-equivalent molar concentration. Add these C_1-equivalent molar concentrations to the molar concentration of non-oxygenated total hydrocarbon (NOTHC). The result is the molar concentration of total hydrocarbon equivalent (THCE). Calculate THCE concentration using the following equations, noting that Eq. 1065.665–3 is required only if you need to convert your oxygenated hydrocarbon (OHC) concentration from mass to moles:

$$x_{THCE} = x_{NOTHC} + \sum_{i=1}^{N}\left(x_{OHCi} - x_{OHCi\text{-}init}\right)$$

Eq. 1065.665-1

$$x_{NOTHC} = x_{THC[THC\text{-}FID]cor} - \sum_{i=1}^{N}\left(\left(x_{OHCi} - x_{OHCi\text{-}init}\right)\cdot RF_{OHCi[THC\text{-}FID]}\right)$$

Eq. 1065.665-2

$$x_{OHCi} = \frac{\frac{m_{dexhOHCi}}{M_{OHCi}}}{\frac{m_{dexh}}{M_{dexh}}} = \frac{n_{dexhOHCi}}{n_{dexh}}$$

Eq. 1065.665-3

Where:

χ_{THCE} = the sum of the C_1-equivalent concentrations of non-oxygenated hydrocarbon, alcohols, and aldehydes.

χ_{NOTHC} = the sum of the C_1-equivalent concentrations of NOTHC.

χOHCi = the C_1-equivalent concentration of oxygenated species *i* in diluted exhaust, not corrected for initial contamination.

$\chi_{OHCi\text{-}init}$ = the C_1-equivalent concentration of the initial system contamination (optional) of oxygenated species *i*, dry-to-wet corrected.

$\chi_{THC[THC\text{-}FID]cor}$ = the C_1-equivalent response to NOTHC and all OHC in diluted exhaust, HC contamination and dry-to-wet corrected, as measured by the THC-FID.

$RF_{OHCi[THC\text{-}FID]}$ = the response factor of the FID to species *i* relative to propane on a C_1-equivalent basis.

M_{dexh} = the molar mass of diluted exhaust as determine in § 1065.340.

$m_{dexhOHCi}$ = the mass of oxygenated species *i* in dilute exhaust.

M_{OHCi} = the C_1-equivalent molecular weight of oxygenated species *i*.

m_{dexh} = the mass of diluted exhaust.

$n_{dexhOHCi}$ = the number of moles of oxygenated species *i* in total diluted exhaust flow.

n_{dexh} = the total diluted exhaust flow.

* * * * *

■ 358. Amend § 1065.667 by revising paragraph (d) to read as follows:

§ 1065.667 Dilution air background emission correction.

* * * * *

(d) You may determine the total flow of dilution air from the measured dilute exhaust flow and a chemical balance of the fuel, DEF, intake air, and dilute exhaust as described in § 1065.655. For this paragraph (d), the molar flow of dilution air is calculated by multiplying the dilute exhaust flow by the mole fraction of dilution gas to dilute exhaust, $\chi_{dil/ex}$, from the dilute chemical balance. This may be done by totaling continuous calculations or by using batch results. For example, to use batch results, the total flow of dilution air is calculated by multiplying the total flow of diluted exhaust, n_{dexh}, by the flow-weighted mean mole fraction of dilution air in diluted exhaust, $\bar{\chi}_{dil/exh}$. Calculate $\bar{\chi}_{dil/exh}$ using flow-weighted mean concentrations of emissions in the chemical balance, as described in § 1065.655. The chemical balance in § 1065.655 assumes that your engine operates stoichiometrically, even if it is a lean-burn engine, such as a compression-ignition engine. Note that for lean-burn engines this assumption could result in an error in emission calculations. This error could occur because the chemical balance in § 1065.655 treats excess air passing through a lean-burn engine as if it was dilution air. If an emission concentration expected at the standard is about 100 times its dilution air background concentration, this error is negligible. However, if an emission concentration expected at the standard is similar to its background concentration, this error could be significant. If this error might affect your ability to show that your engines comply with applicable standards in this chapter, we recommend that you either determine the total flow of

dilution air using one of the more accurate methods in paragraph (b) or (c) of this section, or remove background emissions from dilution air by HEPA filtration, chemical adsorption, or catalytic scrubbing. You might also consider using a partial-flow dilution technique such as a bag mini-diluter, which uses purified air as the dilution air.

* * * * *

■ 359. Amend § 1065.675 by revising paragraph (d) to read as follows:

§ 1065.675 CLD quench verification calculations.

* * * * *

(d) Calculate quench as follows:

$$quench = \left(\left(\frac{x_{NOwet}}{\frac{1 - x_{H2Omeas}}{x_{NOdry}} - 1} \right) \cdot \frac{x_{H2Oexp}}{x_{H2Omeas}} + \left(\frac{x_{NOmeas}}{x_{NOact}} - 1 \right) \cdot \frac{x_{CO2exp}}{x_{CO2act}} \right) \cdot 100\ \%$$

Eq. 1065.675-1

Where:

quench = amount of CLD quench.

χ_{NOdry} = concentration of NO upstream of a humidity generator, according to § 1065.370(e)(4).

χ_{NOwet} = measured concentration of NO downstream of a humidity generator, according to § 1065.370(e)(9).

χ_{H2Oexp} = maximum expected mole fraction of water during emission testing, according to paragraph (b) of this section.

$\chi_{H2Omeas}$ = measured mole fraction of water during the quench verification, according to § 1065.370(e)(7).

χ_{NOmeas} = measured concentration of NO when NO span gas is blended with CO_2 span gas, according to § 1065.370(d)(10).

χ_{NOact} = actual concentration of NO when NO span gas is blended with CO_2 span gas, according to § 1065.370(d)(11) and calculated according to Eq. 1065.675–2.

χ_{CO2exp} = maximum expected concentration of CO_2 during emission testing, according to paragraph (c) of this section.

χ_{CO2act} = actual concentration of CO_2 when NO span gas is blended with CO_2 span gas, according to § 1065.370(d)(9).

$$x_{NOact} = \left(1 - \frac{x_{CO2act}}{x_{CO2span}} \right) \cdot x_{NOspan}$$

Eq. 1065.675-2

Where:

χ_{NOspan} = the NO span gas concentration input to the gas divider, according to § 1065.370(d)(5).

$\chi_{CO2span}$ = the CO_2 span gas concentration input to the gas divider, according to § 1065.370(d)(4).

Example:

χ_{NOdry} = 1800.0 µmol/mol
χ_{NOwet} = 1739.6 µmol/mol
χ_{H2Oexp} = 0.030 mol/mol
$\chi_{H2Omeas}$ = 0.030 mol/mol
χ_{NOmeas} = 1515.2 µmol/mol
χ_{NOspan} = 3001.6 µmol/mol
χ_{CO2exp} = 3.2%
$\chi_{CO2span}$ = 6.1%
χ_{CO2act} = 2.98%

$$x_{NOact} = \left(1 - \frac{2.98}{6.1} \right) \cdot 3001.6 = 1535.24459\ \mu mol/mol$$

$$quench = \left(\left(\frac{1739.6}{\frac{1 - 0.030}{1800.0} - 1} \right) \cdot \frac{0.030}{0.030} + \left(\frac{1515.2}{1535.24459} - 1 \right) \cdot \frac{3.2}{2.98} \right) \cdot 100\ \%$$

quench = (−0.0036655 − 0.014020171) · 100% = −1.7685671%

■ 360. Amend § 1065.695 by adding paragraph (c)(8)(v) to read as follows:

§ 1065.695 Data requirements.

* * * * *

(c) * * *

(8) * * *

(v) Carbon balance error verification, if performed.

* * * * *

■ 361. Amend § 1065.701 by revising paragarphs (b) and (f) to read as follows:

§ 1065.701 General requirements for test fuels.

* * * * *

(b) *Fuels meeting alternate specifications.* We may allow you to use a different test fuel (such as California LEV III gasoline) if it does not affect your ability to show that your engines would comply with all applicable emission standards in this chapter using the test fuel specified in this subpart.

* * * * *

(f) *Service accumulation and field testing fuels.* If we do not specify a service-accumulation or field-testing fuel in the standard-setting part, use an appropriate commercially available fuel such as those meeting minimum specifications from the following table:

TABLE 1 OF § 1065.701—EXAMPLES OF SERVICE-ACCUMULATION AND FIELD-TESTING FUELS

Fuel category	Subcategory	Reference procedure [a]
Diesel	Light distillate and light blends with residual	ASTM D975.

TABLE 1 OF § 1065.701—EXAMPLES OF SERVICE-ACCUMULATION AND FIELD-TESTING FUELS—Continued

Fuel category	Subcategory	Reference procedure [a]
	Middle distillate	ASTM D6985.
	Biodiesel (B100)	ASTM D6751.
Intermediate and residual fuel	All	See § 1065.705.
Gasoline	Automotive gasoline	ASTM D4814.
	Automotive gasoline with ethanol concentration up to 10 volume %	ASTM D4814.
Alcohol	Ethanol (E51-83)	ASTM D5798.
	Methanol (M70-M85)	ASTM D5797.
Aviation fuel	Aviation gasoline	ASTM D910.
	Gas turbine	ASTM D1655.
	Jet B wide cut	ASTM D6615.
Gas turbine fuel	General	ASTM D2880.

[a] Incorporated by reference; see § 1065.1010.

■ 362. Amend § 1065.703 by revising paragraph (b) to read as follows:

§ 1065.703 Distillate diesel fuel.

* * * * *

(b) There are three grades of #2 diesel fuel specified for use as a test fuel. See the standard-setting part to determine which grade to use. If the standard-setting part does not specify which grade to use, use good engineering judgment to select the grade that represents the fuel on which the engines will operate in use. The three grades are specified in Table 1 of this section.

TABLE 1 OF § 1065.703—TEST FUEL SPECIFICATIONS FOR DISTILLATE DIESEL FUEL

Property	Unit	Ultra low sulfur	Low sulfur	High sulfur	Reference procedure [a]
Cetane Number		40–50	40–50	40–50	ASTM D613.
Distillation range:					
Initial boiling point	°C	171–204	171–204	171–204	ASTM D86.
10 pct. point		204–238	204–238	204–238	
50 pct. point		243–282	243–282	243–282	
90 pct. point		293–332	293–332	293–332	
Endpoint		321–366	321–366	321–366	
Gravity	°API	32–37	32–37	32–37	ASTM D4052.
Total sulfur	mg/kg	7–15	300–500	800–2500	ASTM D2622, ASTM D5453, or ASTM D7039.
Aromatics, min. (Remainder shall be paraffins, naphthenes, and olefins).	g/kg	100	100	100	ASTM D5186.
Flashpoint, min.	°C	54	54	54	ASTM D93.
Kinematic Viscosity	mm^2/s	2.0–3.2	2.0–3.2	2.0–3.2	ASTM D445.

[a] Incorporated by reference, see § 1065.1010. See § 1065.701(d) for other allowed procedures.

* * * * *

■ 363. Amend § 1065.705 by revising paragraph (c) to read as follows:

§ 1065.705 Residual and intermediate residual fuel.

* * * * *

(c) The fuel must meet the specifications for one of the categories in the following table:

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TABLE 1 OF §1065.705–SERVICE ACCUMULATION AND TEST FUEL SPECIFICATIONS FOR RESIDUAL FUEL

Property	Unit	Category ISO-F-									Reference Procedure[a]
		RMA 30	RMB 30	RMD 80	RME 180	RMF 180	RMG 380	RMH 380	RMK 380	RMH 700	RMK 700	
Density at 15 °C, max.	kg/m^3	960.0	975.0	980.0	991.0		991.0		1010.0	991.0	1010.0	ISO 3675 or ISO 12185 (see also ISO 8217)
Kinematic viscosity at 50 °C, max.	mm^2/s	30.0		80.0	180.0		380.0		700.0			ISO 3104
Flash point, min.	°C	60		60	60		60		60			ISO 2719 (see also ISO 8217)
Pour point (upper) Winter quality, max. Summer quality, max.	°C	0 6	24 24	30 30	30 30		30 30		30 30			ISO 3016
Carbon residue, max.	(kg/kg) %	10		14	15	20	18	22	22			ISO 10370
Ash, max.	(kg/kg) %	0.10		0.10	0.10	0.15	0.15		0.15			ISO 6245
Water, max.	(m^3/m^3) %	0.5		0.5	0.5		0.5		0.5			ISO 3733
Sulfur, max.	(kg/kg) %	3.50		4.00	4.50		4.50		4.50			ISO 8754 or ISO 14596 (see also ISO 8217)
Vanadium, max.	mg/kg	150		350	200	500	300	600	600			ISO 14597 or IP-501 or IP-470 (see also ISO 8217)
Total sediment potential, max.	(kg/kg) %	0.10		0.10	0.10		0.10		0.10			ISO 10307-2 (see also ISO 8217)
Aluminium plus silicon, max.	mg/kg	80		80	80		80		80			ISO 10478 or IP 501 or IP 470 (see also ISO 8217)

[a]Incorporated by reference; see §1065.1010. See §1065.701(d) for other allowed procedures.

■ 364. Amend § 1065.710 by revising paragraphs (b)(2) and (c) to read as follows:

§ 1065.710 Gasoline.

* * * * *

(b) * * *

(2) Table 1 of this section identifies limit values consistent with the units in the reference procedure for each fuel property. These values are generally specified in international units. Values presented in parentheses are for information only. Table 1 follows:

TABLE 1 OF §1065.710–TEST FUEL SPECIFICATIONS FOR A LOW-LEVEL ETHANOL-GASOLINE BLEND

Property	Unit	SPECIFICATION			Reference Procedure[a]
		General Testing	Low-Temperature Testing	High Altitude Testing	
Antiknock Index (R+M)/2	-	87.0-88.4[b]		Minimum, 87.0	ASTM D2699 and ASTM D2700
Sensitivity (R-M)	-	Minimum, 7.5			ASTM D2699 and ASTM D2700
Dry Vapor Pressure Equivalent (*DVPE*)[c,d]	kPa (psi)	60.0-63.4 (8.7-9.2)	77.2-81.4 (11.2-11.8)	52.4-55.2 (7.6-8.0)	ASTM D5191
Distillation[d] 10 % evaporated	°C (°F)	49-60 (120-140)	43-54 (110-130)	49-60 (120-140)	ASTM D86
50 % evaporated	°C (°F)	88-99 (190-210)			
90 % evaporated	°C (°F)	157-168 (315-335)			
Evaporated final boiling point	°C (°F)	193-216 (380-420)			
Residue	milliliter	Maximum, 2.0			
Total Aromatic Hydrocarbons	volume %	21.0-25.0			ASTM D5769
C6 Aromatics (benzene)	volume %	0.5-0.7			
C7 Aromatics (toluene)	volume %	5.2-6.4			
C8 Aromatics	volume %	5.2-6.4			
C9 Aromatics	volume %	5.2-6.4			
C10+ Aromatics	volume %	4.4-5.6			
Olefins[e]	volume %	4.0-10.0			ASTM D6550
Ethanol blended	volume %	9.6-10.0			See paragraph (b)(3) of this section.
Ethanol confirmatory[f]	volume %	9.4-10.2			ASTM D4815 or ASTM D5599
Total Content of Oxygenates Other than Ethanol[f]	volume %	Maximum, 0.1			ASTM D4815 or ASTM D5599
Sulfur	mg/kg	8.0-11.0			ASTM D2622, ASTM D5453 or ASTM D7039
Lead	g/liter	Maximum, 0.0026			ASTM D3237
Phosphorus	g/liter	Maximum, 0.0013			ASTM D3231
Copper Corrosion	-	Maximum, No. 1			ASTM D130
Solvent-Washed Gum Content	mg/100 milliliter	Maximum, 3.0			ASTM D381
Oxidation Stability	minute	Minimum, 1000			ASTM D525

[a] Incorporated by reference; see §1065.1010. See §1065.701(d) for other allowed procedures.
[b] Octane specifications apply only for testing related to exhaust emissions. For engines or vehicles that require the use of premium fuel, as described in paragraph (d) of this section, the adjusted specification for antiknock index is a minimum value of 91.0; no maximum value applies. All other specifications apply for this high-octane fuel.
[c] Calculate dry vapor pressure equivalent, *DVPE*, based on the measured total vapor pressure, p_T, using the following equation: *DVPE* (kPa) = 0.956·p_T – 2.39 or *DVPE* (psi) = 0.956·p_T – 0.347. *DVPE* is intended to be equivalent to Reid Vapor Pressure using a different test method.
[d] Parenthetical values are shown for informational purposes only.
[e] ASTM D6550 prescribes measurement of olefin concentration in mass %. Multiply this result by 0.857 and round to the first decimal place to determine the olefin concentration in volume %.
[f] ASTM D5599 prescribes concentration measurements for ethanol and other oxygenates in mass %. Convert results to volume % as specified in Section 14.3 of ASTM D4815.

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(c) The specifications of this paragraph (c) apply for testing with neat gasoline. This is sometimes called indolene or E0 test fuel. Gasoline for

testing must have octane values that represent commercially available fuels for the appropriate application. Test fuel specifications apply as follows:

TABLE 2 OF § 1065.710—TEST FUEL SPECIFICATIONS FOR NEAT (E0) GASOLINE

Property	Unit	Specification		Reference procedure [a]
		General testing	Low-temperature testing	
Distillation Range:				
Evaporated initial boiling point	°C	24–35 [b]	24–36	ASTM D86.
10% evaporated	°C	49–57	37–48.	
50% evaporated	°C	93–110	82–101.	
90% evaporated	°C	149–163	158–174.	
Evaporated final boiling point	°C	Maximum, 213	Maximum, 212.	
Total Aromatic Hydrocarbons	volume %	Maximum, 35	Maximum, 30.4	ASTM D1319 or ASTM D5769.
Olefins [c]	volume %	Maximum, 10	Maximum, 17.5	ASTM D1319 or ASTM D6550.
Lead	g/liter	Maximum, 0.013	Maximum, 0.013	ASTM D3237.
Phosphorous	g/liter	Maximum, 0.0013	Maximum, 0.005	ASTM D3231.
Total sulfur	mg/kg	Maximum, 80	Maximum, 80	ASTM D2622.
Dry vapor pressure equivalent [d]	kPa	60.0–63.4 [b e]	77.2–81.4	ASTM D5191.

[a] Incorporated by reference; see § 1065.1010. See § 1065.701(d) for other allowed procedures.
[b] For testing at altitudes above 1219 m, the specified initial boiling point range is (23.9 to 40.6) °C and the specified volatility range is (52.0 to 55.2) kPa.
[c] ASTM D6550 prescribes measurement of olefin concentration in mass %. Multiply this result by 0.857 and round to the first decimal place to determine the olefin concentration in volume %.
[d] Calculate dry vapor pressure equivalent, *DVPE*, based on the measured total vapor pressure, p_T, in kPa using the following equation: $DVPE(\text{kPa}) = 0.956 \cdot p_T - 2.39$ or $DVPE(\text{psi}) = 0.956 \cdot p_T - 0.347$. *DVPE* is intended to be equivalent to Reid Vapor Pressure using a different test method.
[e] For testing unrelated to evaporative emissions, the specified range is (55.2 to 63.4) kPa.

* * * * *

■ 365. Amend § 1065.715 by revising paragraph (a) to read as follows:

§ 1065.715 Natural gas.

(a) Except as specified in paragraph (b) of this section, natural gas for testing must meet the specifications in the following table:

TABLE 1 OF § 1065.715—TEST FUEL SPECIFICATIONS FOR NATURAL GAS

Property	Value [a]
Methane, CH_4	Minimum, 0.87 mol/mol.
Ethane, C_2H_6	Maximum, 0.055 mol/mol.
Propane, C_3H_8	Maximum, 0.012 mol/mol.
Butane, C_4H_{10}	Maximum, 0.0035 mol/mol.
Pentane, C_5H_{12}	Maximum, 0.0013 mol/mol.
C_6 and higher	Maximum, 0.001 mol/mol.
Oxygen	Maximum, 0.001 mol/mol.
Inert gases (sum of CO_2 and N_2)	Maximum, 0.051 mol/mol.

[a] Demonstrate compliance with fuel specifications based on the reference procedures in ASTM D1945 (incorporated by reference in § 1065.1010), or on other measurement procedures using good engineering judgment. See § 1065.701(d) for other allowed procedures.

* * * * *

■ 366. Amend § 1065.720 by revising paragraph (a) to read as follows:

§ 1065.720 Liquefied petroleum gas.

(a) Except as specified in paragraph (b) of this section, liquefied petroleum gas for testing must meet the specifications in the following table:

TABLE 1 OF § 1065.720(a)—TEST FUEL SPECIFICATIONS FOR LIQUEFIED PETROLEUM GAS

Property	Value	Reference procedure [a]
Propane, C_3H_8	Minimum, 0.85 m^3/m^3	ASTM D2163.
Vapor pressure at 38 °C	Maximum, 1400 kPa	ASTM D1267 or [b] ASTM D2598.
Volatility residue (evaporated temperature, 35 °C)	Maximum, −38 °C	ASTM D1837.
Butanes	Maximum, 0.05 m^3/m^3	ASTM D2163.
Butenes	Maximum, 0.02 m^3/m^3	ASTM D2163.
Pentenes and heavier	Maximum, 0.005 m^3/m^3	ASTM D2163.
Propene	Maximum, 0.1 m^3/m^3	ASTM D2163.
Residual matter (residue on evaporation of 100 ml oil stain observation)	Maximum, 0.05 ml pass [c]	ASTM D2158.
Corrosion, copper strip	Maximum, No. 1	ASTM D1838.
Sulfur	Maximum, 80 mg/kg	ASTM D6667.

TABLE 1 OF § 1065.720(a)—TEST FUEL SPECIFICATIONS FOR LIQUEFIED PETROLEUM GAS—Continued

Property	Value	Reference procedure [a]
Moisture content	pass	ASTM D2713.

[a] Incorporated by reference; see § 1065.1010. See § 1065.701(d) for other allowed procedures.
[b] If these two test methods yield different results, use the results from ASTM D1267.
[c] The test fuel must not yield a persistent oil ring when you add 0.3 ml of solvent residue mixture to a filter paper in 0.1 ml increments and examine it in daylight after two minutes.

* * * * *

■ 367. Amend § 1065.750 by revising paragraph (a)(1)(ii) to read as follows:

§ 1065.750 Analytical gases.

* * * * *

(a) * * *

(1) * * *

(ii) Contamination as specified in the following table:

TABLE 1 OF § 1065.750—GENERAL SPECIFICATIONS FOR PURIFIED GASES [a]

Constituent	Purified air	Purified N_2
THC (C_1-equivalent)	≤0.05 μmol/mol	≤0.05 μmol/mol.
CO	≤1 μmol/mol	≤1 μmol/mol.
CO_2	≤10 μmol/mol	≤10 μmol/mol.
O_2	0.205 to 0.215 mol/mol	≤2 μmol/mol.
NO_X	≤0.02 μmol/mol	≤0.02 μmol/mol.
N_2O [b]	≤0.02 μmol/mol	≤0.02 μmol/mol.

[a] We do not require these levels of purity to be NIST-traceable.
[b] The N_2O limit applies only if the standard-setting part requires you to report N_2O or certify to an N_2O standard.

* * * * *

■ 368. Amend § 1065.790 by revising paragraph (b) to read as follows:

§ 1065.790 Mass standards.

* * * * *

(b) *Dynamometer, fuel mass scale, and DEF mass scale calibration weights.* Use dynamometer and mass scale calibration weights that are certified as NIST-traceable within 0.1% uncertainty. Calibration weights may be certified by any calibration lab that maintains NIST-traceability.

■ 369. Amend § 1065.905 by revising paragraph (f) to read as follows:

§ 1065.905 General provisions.

* * * * *

(f) *Summary.* The following table summarizes the requirements of paragraphs (d) and (e) of this section:

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

Subpart	Applicability for field testing [a]	Applicability for laboratory or similar testing with PEMS without restriction [a]	Applicability for laboratory or similar testing with PEMS with restrictions [a]
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 of this part, except §§ 1065.140(e)(1) and (4), 1065.170(c)(1)(vi), and 1065.195(c). Section 1065.910 specifies equipment specific to field testing.	Use all	Use all. Section 1065.910 specifies equipment specific to laboratory testing with PEMS.
C: Measurement instruments.	Use all Section 1065.915 allows deviations.	Use all except § 1065.295(c).	Use all except § 1065.295(c). Section1065.915 allows deviations.
D: Calibrations and verifications.	Use all except §§ 1065.308 and 1065.309. Section 1065.920 allows deviations, but also has additional specifications.	Use all	Use all. Section 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 Section 1065.940 has additional calculation instructions.	Use all	Use all. Section 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.

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

Subpart	Applicability for field testing [a]	Applicability for laboratory or similar testing with PEMS without restriction [a]	Applicability for laboratory or similar testing with PEMS with restrictions [a]
K: Definitions and reference materials.	Use all	Use all	Use all.

[a] Refer to paragraphs (d) and (e) of this section for complete specifications.

■ 370. Amend § 1065.910 by revising paragraph (a)(2) to read as follows:

§ 1065.910 PEMS auxiliary equipment for field testing.

* * * * *

(a) * * *

(2) *Tubing.* We recommend using rigid 300 series stainless steel tubing to connect between flexible connectors. Tubing may be straight or bent to accommodate vehicle geometry. You may use ''T'' or ''Y'' fittings to join multiple connections, or you may cap or plug redundant flow paths if the engine manufacturer recommends it.

* * * * *

■ 371. Amend § 1065.915 by revising paragraph (a) 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 [a]	Repeatability [a]	Noise [a]
Engine speed transducer	f_n	1 s	1 Hz means	5% of pt. or 1% of max.	2% of pt. or 1% 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% of pt. or 5% of max.	2% of pt. or 1% of max.	1% of max.
General pressure transducer (not a part of another instrument).	p	5 s	1 Hz	5% of pt. or 5% of max.	2% of pt. or 0.5% of max.	1% of max.
Atmospheric pressure meter	p_{atmos}	50 s	0.1 Hz	250 Pa	200 Pa	100 Pa.
General temperature sensor (not a part of another instrument).	T	5 s	1 Hz	1% 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% of pt. or 3% of max.	2% of pt	2% 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% of max.
Continuous gas analyzer	x	5 s	1 Hz	4% of pt. or 4% of meas.	2% of pt. or 2% of meas.	1% of max.
Gravimetric PM balance	m_{PM}			See § 1065.790	0.5 µg.	
Inertial PM balance	m_{PM}			4% of pt. or 4% of meas.	2% of pt. or 2% of meas.	1% of max.

[a] 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.

* * * * *

■ 372. Amend § 1065.1001 by adding a definition for ''Enhanced-idle'' in alphabetical order and revising the definition for ''Test interval'' to read as follows:

§ 1065.1001 Definitions.

* * * * *

Enhanced-idle means a mode of engine idle operation where idle speed is elevated above warm idle speed as determined by the electronic control module, for example during engine warm-up or to increase exhaust temperature.

* * * * *

Test interval means a duration of time over which you determine mass of emissions. For example, the standard-setting part may specify a complete laboratory duty cycle as a cold-start test interval, plus a hot-start test interval. As another example, a standard-setting part may specify a field-test interval, such as a ''not-to-exceed'' (NTE) event, as a duration of time over which an engine operates within a certain range of speed and torque. In cases where multiple test intervals occur over a duty cycle, the standard-setting part may specify additional calculations that weight and combine results to arrive at composite values for comparison against the applicable standards in this chapter.

* * * * *

■ 373. Amend § 1065.1005 by revising paragraphs (a), (c), (d), (e), (f)(2), and (g) to read as follows:

§ 1065.1005 Symbols, abbreviations, acronyms, and units of measure.

* * * * *

(a) *Symbols for quantities.* This part uses the following symbols and units of measure for various quantities:

TABLE 1 OF § 1065.1005—SYMBOLS FOR QUANTITIES

Symbol	Quantity	Unit	Unit symbol	Units in terms of SI base units
a	atomic hydrogen-to-carbon ratio.	mole per mole	mol/mol	1.
A	area	square meter	m^2	m^2.
a_0	intercept of least squares regression.			
a_1	slope of least squares regression.			
a_g	acceleration of Earth's gravity.	meter per square second.	m/s^2	$m \cdot s^{-2}$.
β	ratio of diameters	meter per meter	m/m	1.
β	atomic oxygen-to-carbon ratio.	mole per mole	mol/mol	1.
$C_\#$	number of carbon atoms in a molecule.			
c	power-specific carbon mass error coefficient.	gram per kilowatt-hour	g/(kW·hr)	$3.6^{-1} \cdot 10^{-9} \cdot m^{-2} \cdot s^2$.
C_d	discharge coefficient.			
C_f	flow coefficient.			
δ	atomic nitrogen-to-carbon ratio.	mole per mole	mol/mol	1.
d	diameter	meter	m	m.
d	power-specific carbon mass rate absolute error coefficent.	gram per kilowatt-hour	g/(kW·hr)	$3.6^{-1} \cdot 10^{-9} \cdot m^{-2} \cdot s^2$.
DR	dilution ratio	mole per mole	mol/mol	1.
ε	error between a quantity and its reference.			
$\in$	difference or error quantity.			
e	brake-specific emission or fuel consumption.	gram per kilowatt hour	g/(kW·hr)	$3.6^{-1} \cdot 10^{-9} \cdot m^{-2} \cdot s^2$.
F	F-test statistic.			
f	frequency	hertz	Hz	s^{-1}.
f_n	angular speed (shaft)	revolutions per minute	r/min	$\pi \cdot 30^{-1} \cdot s^{-1}$.
γ	ratio of specific heats	(joule per kilogram kelvin) per (joule per kilogram kelvin).	(J/(kg·K))/(J/(kg·K))	1.
γ	atomic sulfur-to-carbon ratio.	mole per mole	mol/mol	1.
K	correction factor			1.
K_v	calibration coefficient		$m^4 \cdot s \cdot K^{0.5}/kg$	$m^4 \cdot kg^{-1} \cdot s \cdot K^{0.5}$.
l	length	meter	m	m.
L	limit.			
μ	viscosity, dynamic	pascal second	Pa·s	$m^{-1} \cdot kg \cdot s^{-1}$.
M	molar mass [1]	gram per mole	g/mol	$10^{-3} \cdot kg \cdot mol^{-1}$.
m	mass	kilogram	kg	kg.
$\dot{m}$	mass rate	kilogram per second	kg/s	$kg \cdot s^{-1}$.
v	viscosity, kinematic	meter squared per second.	m^2/s	$m^2 \cdot s^{-1}$.
N	total number in series.			
n	amount of substance	mole	mol	mol.
$\dot{n}$	amount of substance rate.	mole per second	mol/s	$mol \cdot s^{-1}$.
P	power	kilowatt	kW	$10^3 \cdot m^2 \cdot kg \cdot s^{-3}$.
PF	penetration fraction.			
p	pressure	pascal	Pa	$m^{-1} \cdot kg \cdot s^{-2}$.
ρ	mass density	kilogram per cubic meter.	kg/m^3	$m^{-3} \cdot kg$.
Δp	differential static pressure.	pascal	Pa	$m^{-1} \cdot kg \cdot s^{-2}$.
r	ratio of pressures	pascal per pascal	Pa/Pa	1.
r^2	coefficient of determination.			
Ra	average surface roughness.	micrometer	µm	$10^{-6} \cdot m$.
$Re_\#$	Reynolds number.			
RF	response factor.			
RH	relative humidity.			
σ	non-biased standard deviation.			
S	Sutherland constant	kelvin	K	K.

TABLE 1 OF § 1065.1005—SYMBOLS FOR QUANTITIES—Continued

Symbol	Quantity	Unit	Unit symbol	Units in terms of SI base units
SEE	standard error of the estimate.			
T	absolute temperature	kelvin	K	K.
T	Celsius temperature	degree Celsius	°C	K − 273.15.
T	torque (moment of force).	newton meter	N·m	$m^2 \cdot kg \cdot s^{-2}$.
θ	plane angle	degrees	°	rad.
t	time	second	s	s.
Δ*t*	time interval, period, 1/frequency.	second	s	s.
V	volume	cubic meter	m^3	m^3.
$\dot{V}$	volume rate	cubic meter per second	m^3/s	$m^3 \cdot s^{-1}$.
W	work	kilowatt-hour	kW·hr	$3.6 \cdot 10^6 \cdot m^2 \cdot kg \cdot s^{-2}$.
w_C	carbon mass fraction	gram per gram	g/g	1.
x	amount of substance mole fraction.[2]	mole per mole	mol/mol	1.
$\bar{X}$	flow-weighted mean concentration.	mole per mole	mol/mol	1.
y	generic variable.			
Z	compressibility factor.			

[1] See paragraph (f)(2) of this section for the values to use for molar masses. Note that in the cases of NO_X and HC, the regulations specify effective molar masses based on assumed speciation rather than actual speciation.
[2] Note that mole fractions for THC, THCE, NMHC, NMHCE, and NOTHC are expressed on a C_1-equivalent basis.

* * * * *

(c) *Prefixes.* This part uses the following prefixes for units and unit symbols:

TABLE 3 OF § 1065.1005—PREFIXES

Symbol	Prefix name	Factor
μ	micro	10^{-6}
m	milli	10^{-3}
c	centi	10^{-2}
k	kilo	10^3
M	mega	10^6

(d) *Superscripts.* This part uses the following superscripts for modifying quantity symbols:

TABLE 4 OF § 1065.1005—SUPERSCRIPTS

Superscript	Meaning
overbar (such as $\bar{y}$)	arithmetic mean.
overdot (such as $\dot{y}$)	quantity per unit time.

(e) *Subscripts.* This part uses the following subscripts for modifying quantity symbols:

TABLE 5 OF § 1065.1005—SUBSCRIPTS

Subscript	Meaning
a	absolute (*e.g.*, absolute difference or error).
abs	absolute quantity.
act	actual condition.
air	air, dry.
amb	ambient.
atmos	atmospheric.
bkgnd	background.
C	carbon mass.
cal	calibration quantity.
CFV	critical flow venturi.
comb	combined.
comp	composite value.
cor	corrected quantity.
dil	dilution air.
dew	dewpoint.
dexh	diluted exhaust.
dry	dry condition.
dutycycle	duty cycle.
∈	related to a difference or error quantity.
exh	raw exhaust.
exp	expected quantity.
fluid	fluid stream.
fn	feedback speed.
frict	friction.
fuel	fuel consumption.
hi,idle	condition at high-idle.
i	an individual of a series.
idle	condition at idle.
in	quantity in.

TABLE 5 OF § 1065.1005—SUBSCRIPTS—Continued

Subscript	Meaning
init	initial quantity, typically before an emission test.
int	intake air.
j	an individual of a series.
mapped	conditions over which an engine can operate.
max	the maximum (*i.e.*, peak) value expected at the standard over a test interval; not the maximum of an instrument range.
meas	measured quantity.
media	PM sample media.
mix	mixture of diluted exhaust and air.
norm	normalized.
out	quantity out.
P	power.
part	partial quantity.
PDP	positive-displacement pump.
post	after the test interval.
pre	before the test interval.
prod	stoichiometric product.
r	relative (*e.g.*, relative difference or error).
rate	rate (divided by time).
record	record rate.
ref	reference quantity.
rev	revolution.
sat	saturated condition.
s	slip.
span	span quantity.
SSV	subsonic venturi.
std	standard condition.
stroke	engine strokes per power stroke.
T	torque.
test	test quantity.
test,alt	alternate test quantity.
uncor	uncorrected quantity.
vac	vacuum side of the sampling system.
weight	calibration weight.
zero	zero quantity

(f) * * *

(2) This part uses the following molar masses or effective molar masses of chemical species:

TABLE 7 OF § 1065.1005—MOLAR MASSES

Symbol	Quantity	g/mol (10^{-3}·kg·mol^{-1})
M_{air}	molar mass of dry air [1]	28.96559
M_{Ar}	molar mass of argon	39.948
M_{C}	molar mass of carbon	12.0107
M_{CH3OH}	molar mass of methanol	32.04186
M_{C2H5OH}	molar mass of ethanol	46.06844
M_{C2H4O}	molar mass of acetaldehyde	44.05256
M_{CH4N2O}	molar mass of urea	60.05526
M_{C2H6}	molar mass of ethane	30.06904
M_{C3H8}	molar mass of propane	44.09562
M_{C3H7OH}	molar mass of propanol	60.09502
M_{CO}	molar mass of carbon monoxide	28.0101
M_{CH4}	molar mass of methane	16.0425
M_{CO2}	molar mass of carbon dioxide	44.0095
M_{H}	molar mass of atomic hydrogen	1.00794
M_{H2}	molar mass of molecular hydrogen	2.01588
M_{H2O}	molar mass of water	18.01528
M_{CH2O}	molar mass of formaldehyde	30.02598
M_{He}	molar mass of helium	4.002602
M_{N}	molar mass of atomic nitrogen	14.0067
M_{N2}	molar mass of molecular nitrogen	28.0134
M_{NH3}	molar mass of ammonia	17.03052
M_{NMHC}	effective C1 molar mass of nonmethane hydrocarbon [2]	13.875389
M_{NMHCE}	effective C1 molar mass of nonmethane hydrocarbon equivalent [2]	13.875389
M_{NMNEHC}	effective C1 molar mass of nonmethane-nonethane hydrocarbon [2]	13.875389
M_{NOx}	effective molar mass of oxides of nitrogen [3]	46.0055

TABLE 7 OF § 1065.1005—MOLAR MASSES—Continued

Symbol	Quantity	g/mol (10^{-3}·kg·mol^{-1})
M_{N2O}	molar mass of nitrous oxide	44.0128
M_O	molar mass of atomic oxygen	15.9994
M_{O2}	molar mass of molecular oxygen	31.9988
M_S	molar mass of sulfur	32.065
M_{THC}	effective C_1 molar mass of total hydrocarbon [2]	13.875389
M_{THCE}	effective C_1 molar mass of total hydrocarbon equivalent [2]	13.875389

[1] See paragraph (f)(1) of this section for the composition of dry air.
[2] The effective molar masses of THC, THCE, NMHC, NMHCE, and NMNEHC are defined on a C_1 basis and are based on an atomic hydrogen-to-carbon ratio, α, of 1.85 (with β, γ, and δ equal to zero).
[3] The effective molar mass of NO_X is defined by the molar mass of nitrogen dioxide, NO_2.

* * * * *

(g) *Other acronyms and abbreviations.* This part uses the following additional abbreviations and acronyms:

TABLE 10 OF § 1065.1005—OTHER ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
ABS	acrylonitrile-butadiene-styrene.
ASTM	ASTM International.
BMD	bag mini-diluter.
BSFC	brake-specific fuel consumption.
CARB	California Air Resources Board.
CFR	Code of Federal Regulations.
CFV	critical-flow venturi.
CI	compression-ignition.
CITT	Curb Idle Transmission Torque.
CLD	chemiluminescent detector.
CVS	constant-volume sampler.
DEF	diesel exhaust fluid.
DF	deterioration factor.
ECM	electronic control module.
EFC	electronic flow control.
e.g.	exempli gratia, for example.
EGR	exhaust gas recirculation.
EPA	Environmental Protection Agency.
FEL	Family Emission Limit.
FID	flame-ionization detector.
FTIR	Fourier transform infrared.
GC	gas chromatograph.
GC–ECD.	gas chromatograph with an electron-capture detector.
GC–FID	gas chromatograph with a flame ionization detector.
HEPA	high-efficiency particulate air.
IBP	initial boiling point.
IBR	incorporated by reference.
i.e.	id est, in other words.
ISO	International Organization for Standardization.
LPG	liquefied petroleum gas.
MPD	magnetopneumatic detection.
NDIR	nondispersive infrared.
NDUV	nondispersive ultraviolet.
NIST	National Institute for Standards and Technology.
NMC	nonmethane cutter.
PDP	positive-displacement pump.
PEMS	portable emission measurement system.
PFD	partial-flow dilution.
PLOT	porous layer open tubular.
PMD	paramagnetic detection.
PMP	Polymethylpentene.
pt.	a single point at the mean value expected at the standard.
psi	pounds per square inch.
PTFE	polytetrafluoroethylene (commonly known as Teflon™).
RE	rounding error.
RESS	rechargeable energy storage system.
RFPF	response factor penetration fraction.
RMC	ramped-modal cycle.
rms	root-mean square.
RTD	resistive temperature detector.
SAW	surface acoustic wave.
SEE	standard error of the estimate.
SSV	subsonic venturi.
SI	spark-ignition.
THC–FID.	total hydrocarbon flame ionization detector.
TINV	inverse student *t*-test function in Microsoft Excel.
UCL	upper confidence limit.
UFM	ultrasonic flow meter.
U.S.C.	United States Code

■ 374. Amend § 1065.1010 by revising paragraph (b) to read as follows:

§ 1065.1010 Incorporation by reference.

* * * * *

(b) *ASTM material.* The following standards are available from ASTM International, 100 Barr Harbor Dr., P.O. Box C700, West Conshohocken, PA 19428–2959, (877) 909–ASTM, or *http://www.astm.org:*

(1) ASTM D86–12, Standard Test Method for Distillation of Petroleum Products at Atmospheric Pressure, approved December 1, 2012 (''ASTM D86''), IBR approved for §§ 1065.703(b) and 1065.710(b) and (c).

(2) ASTM D93–13, Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester, approved July 15, 2013 (''ASTM D93''), IBR approved for § 1065.703(b).

(3) ASTM D130–12, Standard Test Method for Corrosiveness to Copper from Petroleum Products by Copper Strip Test, approved November 1, 2012 (''ASTM D130''), IBR approved for § 1065.710(b).

(4) ASTM D381–12, Standard Test Method for Gum Content in Fuels by Jet Evaporation, approved April 15, 2012 (''ASTM D381''), IBR approved for § 1065.710(b).

(5) ASTM D445–12, Standard Test Method for Kinematic Viscosity of Transparent and Opaque Liquids (and Calculation of Dynamic Viscosity), approved April 15, 2012 (''ASTM D445''), IBR approved for § 1065.703(b).

(6) ASTM D525–12a, Standard Test Method for Oxidation Stability of Gasoline (Induction Period Method), approved September 1, 2012 (''ASTM D525''), IBR approved for § 1065.710(b).

(7) ASTM D613–13, Standard Test Method for Cetane Number of Diesel Fuel Oil, approved December 1, 2013 (''ASTM D613''), IBR approved for § 1065.703(b).

(8) ASTM D910–13a, Standard Specification for Aviation Gasolines, approved December 1, 2013 (''ASTM D910''), IBR approved for § 1065.701(f).

(9) ASTM D975–13a, Standard Specification for Diesel Fuel Oils, approved December 1, 2013 (''ASTM D975''), IBR approved for § 1065.701(f).

(10) ASTM D1267–12, Standard Test Method for Gage Vapor Pressure of Liquefied Petroleum (LP) Gases (LP-Gas Method), approved November 1, 2012 (''ASTM D1267''), IBR approved for § 1065.720(a).

(11) ASTM D1319–13, Standard Test Method for Hydrocarbon Types in Liquid Petroleum Products by Fluorescent Indicator Adsorption, approved May 1, 2013 (''ASTM D1319''), IBR approved for § 1065.710(c).

(12) ASTM D1655–13a, Standard Specification for Aviation Turbine Fuels, approved December 1, 2013 (''ASTM D1655''), IBR approved for § 1065.701(f).

(13) ASTM D1837–11, Standard Test Method for Volatility of Liquefied Petroleum (LP) Gases, approved October

1, 2011 (''ASTM D1837''), IBR approved for § 1065.720(a).

(14) ASTM D1838–12a, Standard Test Method for Copper Strip Corrosion by Liquefied Petroleum (LP) Gases, approved December 1, 2012 (''ASTM D1838''), IBR approved for § 1065.720(a).

(15) ASTM D1945–03 (Reapproved 2010), Standard Test Method for Analysis of Natural Gas by Gas Chromatography, approved January 1, 2010 (''ASTM D1945''), IBR approved for § 1065.715(a).

(16) ASTM D2158–11, Standard Test Method for Residues in Liquefied Petroleum (LP) Gases, approved January 1, 2011 (''ASTM D2158''), IBR approved for § 1065.720(a).

(17) ASTM D2163–07, Standard Test Method for Determination of Hydrocarbons in Liquefied Petroleum (LP) Gases and Propane/Propene Mixtures by Gas Chromatography, approved December 1, 2007 (''ASTM D2163''), IBR approved for § 1065.720(a).

(18) ASTM D2598–12, Standard Practice for Calculation of Certain Physical Properties of Liquefied Petroleum (LP) Gases from Compositional Analysis, approved November 1, 2012 (''ASTM D2598''), IBR approved for § 1065.720(a).

(19) ASTM D2622–16, Standard Test Method for Sulfur in Petroleum Products by Wavelength Dispersive X-ray Fluorescence Spectrometry, approved January 1, 2016 (''ASTM D2622''), IBR approved for §§ 1065.703(b) and 1065.710(b) and (c).

(20) ASTM D2699–13b, Standard Test Method for Research Octane Number of Spark-Ignition Engine Fuel, approved October 1, 2013 (''ASTM D2699''), IBR approved for § 1065.710(b).

(21) ASTM D2700–13b, Standard Test Method for Motor Octane Number of Spark-Ignition Engine Fuel, approved October 1, 2013 (''ASTM D2700''), IBR approved for § 1065.710(b).

(22) ASTM D2713–13, Standard Test Method for Dryness of Propane (Valve Freeze Method), approved October 1, 2013 (''ASTM D2713''), IBR approved for § 1065.720(a).

(23) ASTM D2880–13b, Standard Specification for Gas Turbine Fuel Oils, approved November 15, 2013 (''ASTM D2880''), IBR approved for § 1065.701(f).

(24) ASTM D2986–95a, Standard Practice for Evaluation of Air Assay Media by the Monodisperse DOP (Dioctyl Phthalate) Smoke Test, approved September 10, 1995 (''ASTM D2986''), IBR approved for § 1065.170(c). (*Note:* This standard was withdrawn by ASTM.)

(25) ASTM D3231–13, Standard Test Method for Phosphorus in Gasoline, approved June 15, 2013 (''ASTM D3231''), IBR approved for § 1065.710(b) and (c).

(26) ASTM D3237–12, Standard Test Method for Lead in Gasoline By Atomic Absorption Spectroscopy, approved June 1, 2012 (''ASTM D3237''), IBR approved for § 1065.710(b) and (c).

(27) ASTM D4052–11, Standard Test Method for Density, Relative Density, and API Gravity of Liquids by Digital Density Meter, approved October 15, 2011 (''ASTM D4052''), IBR approved for § 1065.703(b).

(28) ASTM D4629–12, Standard Test Method for Trace Nitrogen in Liquid Petroleum Hydrocarbons by Syringe/Inlet Oxidative Combustion and Chemiluminescence Detection, approved April 15, 2012 (''ASTM D4629''), IBR approved for § 1065.655(e).

(29) ASTM D4814–13b, Standard Specification for Automotive Spark-Ignition Engine Fuel, approved December 1, 2013 (''ASTM D4814''), IBR approved for § 1065.701(f).

(30) ASTM D4815–13, Standard Test Method for Determination of MTBE, ETBE, TAME, DIPE, tertiary-Amyl Alcohol and C1 to C4 Alcohols in Gasoline by Gas Chromatography, approved October 1, 2013 (''ASTM D4815''), IBR approved for § 1065.710(b).

(31) ASTM D5186–03 (Reapproved 2009), Standard Test Method for Determination of the Aromatic Content and Polynuclear Aromatic Content of Diesel Fuels and Aviation Turbine Fuels By Supercritical Fluid Chromatography, approved April 15, 2009 (''ASTM D5186''), IBR approved for § 1065.703(b).

(32) ASTM D5191–13, Standard Test Method for Vapor Pressure of Petroleum Products (Mini Method), approved December 1, 2013 (''ASTM D5191''), IBR approved for § 1065.710(b) and (c).

(33) ASTM D5291–10, Standard Test Methods for Instrumental Determination of Carbon, Hydrogen, and Nitrogen in Petroleum Products and Lubricants, approved May 1, 2010 (''ASTM D5291''), IBR approved for § 1065.655(e).

(34) ASTM D5453–19a, Standard Test Method for Determination of Total Sulfur in Light Hydrocarbons, Spark Ignition Engine Fuel, Diesel Engine Fuel, and Engine Oil by Ultraviolet Fluorescence, approved July 1, 2019 (''ASTM D5453''), IBR approved for §§ 1065.703(b) and 1065.710(b).

(35) ASTM D5599–00 (Reapproved 2010), Standard Test Method for Determination of Oxygenates in Gasoline by Gas Chromatography and Oxygen Selective Flame Ionization Detection, approved October 1, 2010 (''ASTM D5599''), IBR approved for §§ 1065.655(e) and 1065.710(b).

(36) ASTM D5762–12 Standard Test Method for Nitrogen in Petroleum and Petroleum Products by Boat-Inlet Chemiluminescence, approved April 15, 2012 (''ASTM D5762''), IBR approved for § 1065.655(e).

(37) ASTM D5769–10, Standard Test Method for Determination of Benzene, Toluene, and Total Aromatics in Finished Gasolines by Gas Chromatography/Mass Spectrometry, approved May 1, 2010 (''ASTM D5769''), IBR approved for § 1065.710(b).

(38) ASTM D5797–13, Standard Specification for Fuel Methanol (M70-M85) for Automotive Spark-Ignition Engines, approved June 15, 2013 (''ASTM D5797''), IBR approved for § 1065.701(f).

(39) ASTM D5798–13a, Standard Specification for Ethanol Fuel Blends for Flexible Fuel Automotive Spark-Ignition Engines, approved June 15, 2013 (''ASTM D5798''), IBR approved for § 1065.701(f).

(40) ASTM D6348–12$^{\varepsilon 1}$, Standard Test Method for Determination of Gaseous Compounds by Extractive Direct Interface Fourier Transform Infrared (FTIR) Spectroscopy, approved February 1, 2012 (''ASTM D6348''), IBR approved for §§ 1065.266(b) and 1065.275(b).

(41) ASTM D6550–10, Standard Test Method for Determination of Olefin Content of Gasolines by Supercritical-Fluid Chromatography, approved October 1, 2010 (''ASTM D6550''), IBR approved for § 1065.710(b).

(42) ASTM D6615–11a, Standard Specification for Jet B Wide-Cut Aviation Turbine Fuel, approved October 1, 2011 (''ASTM D6615''), IBR approved for § 1065.701(f).

(43) ASTM D6667–14 (Reapproved 2019), Standard Test Method for Determination of Total Volatile Sulfur in Gaseous Hydrocarbons and Liquefied Petroleum Gases by Ultraviolet Fluorescence, approved May 1, 2019 (''ASTM D6667''), IBR approved for § 1065.720(a).

(44) ASTM D6751–12, Standard Specification for Biodiesel Fuel Blend Stock (B100) for Middle Distillate Fuels, approved August 1, 2012 (''ASTM D6751''), IBR approved for § 1065.701(f).

(45) ASTM D6985–04a, Standard Specification for Middle Distillate Fuel Oil—Military Marine Applications, approved November 1, 2004 (''ASTM D6985''), IBR approved for § 1065.701(f). (Note: This standard was withdrawn by ASTM.)

(46) ASTM D7039–15a (Reapproved 2020), Standard Test Method for Sulfur in Gasoline, Diesel Fuel, Jet Fuel, Kerosine, Biodiesel, Biodiesel Blends, and Gasoline-Ethanol Blends by Monochromatic Wavelength Dispersive X-ray Fluorescence Spectrometry, approved May 1, 2020 (''ASTM D7039''), IBR approved for §§ 1065.703(b) and 1065.710(b).

(47) ASTM F1471–09, Standard Test Method for Air Cleaning Performance of a High- Efficiency Particulate Air Filter System, approved March 1, 2009 (''ASTM F1471''), IBR approved for § 1065.1001.

* * * * *

PART 1066—VEHICLE-TESTING PROCEDURES

■ 375. The authority citation for part 1066 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

■ 376. Amend § 1066.1 by revising paragraph (g) to read as follows:

§ 1066.1 Applicability.

* * * * *

(g) For additional information regarding the test procedures in this part, visit our website at *www.epa.gov*, and in particular *https://www.epa.gov/vehicle-and-fuel-emissions-testing/vehicle-testing-regulations.*

■ 377. Amend § 1066.135 by revising paragraph (a)(1) to read as follows:

§ 1066.135 Linearity verification.

* * * * *

(a) * * *

(1) Use instrument manufacturer recommendations and good engineering judgment to select at least ten reference values, y_{refi}, that cover the range of values that you expect during testing (to prevent extrapolation beyond the verified range during emission testing). We recommend selecting zero as one of your reference values. For each range calibrated, if the deviation from a least-squares best-fit straight line is 2% or less of the value at each data point, concentration values may be calculated by use of a straight-line curve fit for that range. If the deviation exceeds 2% at any point, use the best-fit nonlinear equation that represents the data to within 2% of each test point to determine concentration. If you use a gas divider to blend calibration gases, you may verify that the calibration curve produced names a calibration gas within 2% of its certified concentration. Perform this verification between 10 and 60% of the full-scale analyzer range.

* * * * *

■ 378. Amend § 1066.210 by revising paragraph (d)(3) to read as follows:

§ 1066.210 Dynamometers.

* * * * *

(d) * * *

(3) The load applied by the dynamometer simulates forces acting on the vehicle during normal driving according to the following equation:

$$FR_i = A \cdot \cos\left(\operatorname{atan}\left(G_{i-1}\right)\right) + B \cdot v_i + C \cdot v_i^2 + M_e \cdot \frac{v_i - v_{i-1}}{t_i - t_{i-1}} + M \cdot a_g \cdot \sin\left(\operatorname{atan}\left(G_{i-1}\right)\right)$$

Eq. 1066.210-1

Where:

FR = total road-load force to be applied at the surface of the roll. The total force is the sum of the individual tractive forces applied at each roll surface.

i = a counter to indicate a point in time over the driving schedule. For a dynamometer operating at 10-Hz intervals over a 600-second driving schedule, the maximum value of i should be 6,000.

A = a vehicle-specific constant value representing the vehicle's frictional load in lbf or newtons. See subpart D of this part.

G_i = instantaneous road grade, in percent. If your duty cycle is not subject to road grade, set this value to 0.

B = a vehicle-specific coefficient representing load from drag and rolling resistance, which are a function of vehicle speed, in lbf/(mi/hr) or N·s/m. See subpart D of this part.

v = instantaneous linear speed at the roll surfaces as measured by the dynamometer, in mi/hr or m/s. Let $v_{i-1} = 0$ for $i = 0$.

C = a vehicle-specific coefficient representing aerodynamic effects, which are a function of vehicle speed squared, in lbf/(mi/hr)^2 or N·s^2/m^2. See subpart D of this part.

M_e = the vehicle's effective mass in lbm or kg, including the effect of rotating axles as specified in § 1066.310(b)(7).

t = elapsed time in the driving schedule as measured by the dynamometer, in seconds. Let $t_{i-1} = 0$ for $i = 0$.

M = the measured vehicle mass, in lbm or kg.

a_g = acceleration of Earth's gravity = 9.80665 m/s^2.

* * * * *

■ 379. Amend § 1066.255 by revising paragraph (c) to read as follows:

§ 1066.255 Parasitic loss verification.

* * * * *

(c) *Procedure.* Perform this verification by following the dynamometer manufacturer's specifications to establish a parasitic loss curve, taking data at fixed speed intervals to cover the range of vehicle speeds that will occur during testing. You may zero the load cell at a selected speed if that improves your ability to determine the parasitic loss. Parasitic loss forces may never be negative. Note that the torque transducers must be mathematically zeroed and spanned prior to performing this procedure.

* * * * *

■ 380. Amend § 1066.260 by revising paragraph (c)(4) to read as follows:

§ 1066.260 Parasitic friction compensation evaluation.

* * * * *

(c) * * *

(4) Calculate the power equivalent of friction compensation error, FC_{error}, using the following equation:

$$FC_{error} = \frac{I}{2 \cdot t} \cdot \left(v_{init}^2 - v_{final}^2\right)$$

Eq. 1066.260-1

Where:

I = dynamometer inertia setting.

t = duration of the measurement interval, accurate to at least 0.01 s.

v_{init} = the roll speed corresponding to the start of the measurement interval, accurate to at least 0.05 mi/hr.

v_{final} = the roll speed corresponding to the end of the measurement interval, accurate to at least 0.05 mi/hr.

Example:

I = 2000 lbm = 62.16 lbf·s^2/ft

t = 60.0 s

v_{init} = 9.2 mi/hr = 13.5 ft/s

v_{final} = 10.0 mi/hr = 14.7 ft/s

$$FC_{error} = \frac{62.16}{2 \cdot 60.00} \cdot \left(13.5^2 - 14.7^2\right)$$

FC_{error} = –17.5 ft·lbf/s = – 0.032 hp

* * * * *

■ 381. Amend § 1066.265 by revising paragraph (d)(1) to read as follows:

§ 1066.265 Acceleration and deceleration verification.

* * * * *

(d) * * *

(1) Calculate the force setting, F, using the following equation:

$$F = I_b \cdot |a|$$

Eq. 1066.265-4

Where:

I_b = the dynamometer manufacturer's stated base inertia, in lbf·s²/ft.

a = nominal acceleration rate, in ft/s².

Example:

I_b = 2967 lbm = 92.217 lbf·s²/ft
a = 1 (mi/hr)/s = 1.4667 ft/s²
F = 92.217·| 1.4667|
F = 135.25 lbf

* * * * *

■ 382. Amend § 1066.270 by revising paragraphs (c)(4) and (d)(2) to read as follows:

§ 1066.270 Unloaded coastdown verification.

* * * * *

(c) * * *

(4) Determine the mean coastdown force, $\bar{F}$, for each speed and inertia setting for each of the coastdowns performed using the following equation:

$$\bar{F} = \frac{I \cdot (v_{init} - v_{final})}{t}$$

Eq. 1066.270-1

Where:

$\bar{F}$ = the mean force measured during the coastdown for each speed interval and inertia setting, expressed in lbf and rounded to four significant figures.

I = the dynamometer's inertia setting, in lbf·s²/ft.

v_{init} = the speed at the start of the coastdown interval, expressed in ft/s to at least four significant figures.

v_{final} = the speed at the end of the coastdown interval, expressed in ft/s to at least four significant figures.

t = coastdown time for each speed interval and inertia setting, accurate to at least 0.01 s.

Example:

I = 2000 lbm = 62.16 lbf·s²/ft
v_{init} = 25 mi/hr = 36.66 ft/s
v_{final} = 15 mi/hr = 22.0 ft/s
t = 5.00 s

$$\bar{F} = \frac{62.16 \cdot (36.66 - 22.0)}{5.00}$$

$\bar{F}$ = 182.3 lbf

* * * * *

(d) * * *

(2) For vehicles above 20,000 pounds GVWR, the maximum allowable error, $F_{errormax}$, for all speed intervals and inertia settings is 1.0% or the value determined from Eq. 1066.270–3 (substituting 8.8 lbf for 2.2 lbf in the numerator), whichever is greater.

* * * * *

■ 383. Amend § 1066.275 by revising paragraphs (b) and (d) to read as follows:

§ 1066.275 Daily dynamometer readiness verification.

* * * * *

(b) *Scope and frequency.* Perform this verification upon initial installation, within 1 day before testing, and after major maintenance. You may run this within 7 days before testing if you accumulate data to support a less frequent verification interval.

* * * * *

(d) *Performance evaluation.* The coastdown force error determined in paragraph (c) of this section may not exceed the following:

(1) For vehicles at or below 20,000 pounds GVWR, 1.0% or the value determined from Eq. 1066.270–3, whichever is greater.

(2) For vehicles above 20,000 pounds GVWR, 1.0% or the value determined from Eq. 1066.270–3 (substituting 8.8 lbf for 2.2 lbf), whichever is greater.

* * * * *

■ 384. Revise § 1066.405 to read as follows:

§ 1066.405 Vehicle preparation, preconditioning, and maintenance.

(a) Prepare the vehicle for testing (including measurement of evaporative and refueling emissions if appropriate), as described in the standard-setting part.

(b) If you inspect a vehicle, keep a record of the inspection and update your application for certification to document any changes that result. You may use any kind of equipment, instrument, or tool that is available at dealerships and other service outlets to identify malfunctioning components or perform maintenance.

(c) You may repair defective parts from a test vehicle if they are unrelated to emission control. You must ask us to approve repairs that might affect the vehicle's emission controls. If we determine that a part failure, system malfunction, or associated repair makes the vehicle's emission controls unrepresentative of production engines, you may not use it as an emission-data vehicle. Also, if the engine installed in the test vehicle has a major mechanical failure that requires you to take the vehicle apart, you may no longer use the vehicle as an emission-data vehicle for exhaust measurements.

■ 385. Amend § 1066.420 by revising paragraph (d) to read as follows:

§ 1066.420 Test preparation.

* * * * *

(d) Control test cell ambient air humidity as follows:

(1) For vehicles at or below 14,000 pounds GVWR, follow the humidity requirements in Table 1 of this section, unless the standard-setting part specifies otherwise. When complying with humidity requirements in Table 1, where no tolerance is specified, use good engineering judgment to maintain the humidity level near the specified value within the limitations of your test facility.

(2) For vehicles above 14,000 pounds GVWR, you may test vehicles at any humidity.

(3) Table 1 follows:

TABLE 1 OF § 1066.420—TEST CELL HUMIDITY REQUIREMENTS

Test cycle	Humidity requirement (grains H_2O per pound dry air)	Tolerance (grains H_2O per pound dry air)
AC17	69	±5 average, ±10 instantaneous.
FTP [a] and LA–92	50	
HFET	50	
SC03	100	±5 average.
US06	50	

[a] FTP humidity requirement does not apply for cold (–7°C), intermediate (10°C), and hot (35°C) temperature testing.

* * * * *

■ 386. Amend § 1066.605 by revising paragraphs (c)(4) and (h)(2)(i) to read as follows:

§ 1066.605 Mass-based and molar-based exhaust emission calculations.

* * * * *

(c) * * *

(4) For vehicles at or below 14,000 pounds GVWR, calculate HC concentrations, including dilution air background concentrations, as described in this section, and as described in § 1066.635 for NMOG. For emission testing of vehicles above 14,000 pounds GVWR, with fuels that contain 25% or more oxygenated compounds by volume, calculate THCE and NMHCE concentrations, including dilution air background concentrations, as described in 40 CFR part 1065, subpart I.

* * * * *

(h) * * *

(2) * * *

(i) *Varying flow rate.* If you continuously sample from a varying exhaust flow rate, calculate $V_{[flow]}$ using the following equation:

$$V_{[flow]} = \sum_{i=1}^{N} \dot{Q}_i \cdot \Delta t$$

Eq. 1066.605-10

Where:

$\Delta t = 1/f_{record}$

Eq. 1066.605–11

Example:

$N = 505$

$\dot{Q}_{CVS1} = 0.276$ m³/s

$\dot{Q}_{CVS2} = 0.294$ m³/s

$f_{record} = 1$ Hz

Using Eq. 1066.605–11:

$\Delta t = 1/1 = 1$ s

$V_{CVS} = (0.276 + 0.294 + \dot{Q}_{CVS505}) \cdot 1$

$V_{CVS} = 170.721$ m³

* * * * *

■ 387. Amend § 1066.610 by revising paragraph (d) to read as follows:

§ 1066.610 Dilution air background correction.

* * * * *

(d) Determine the time-weighted dilution factor, DF_w, over the duty cycle using the following equation:

$$DF_w = \frac{\sum_{i=1}^{N} t_i}{\sum_{i=1}^{N} \frac{1}{DF_i} \cdot t_i}$$

Eq. 1066.610-4

Where:

N = number of test intervals

i = test interval number

t = duration of the test interval

DF = dilution factor over the test interval

Example:

$N = 3$

$DF_1 = 14.40$

$t_1 = 505$ s

$DF_2 = 24.48$

$t_2 = 867$ s

$DF_3 = 17.28$

$t_3 = 505$ s

$$DF_w = \frac{505 + 867 + 505}{\left(\frac{1}{14.40} \cdot 505\right) + \left(\frac{1}{24.48} \cdot 867\right) + \left(\frac{1}{17.28} \cdot 505\right)} = 18.82$$

■ 388. Amend § 1066.710 by revising paragraph (c) to read as follows:

§ 1066.710 Cold temperature testing procedures for measuring CO and NMHC emissions and determining fuel economy.

* * * * *

(c) During the test, operate the vehicle's interior climate control system with the heat on and air conditioning off. You may not use any supplemental auxiliary heat during this testing. You may set the heater to any temperature and fan setting during vehicle preconditioning.

(1) *Manual and automatic temperature control.* Unless you rely on full automatic control as specified in paragraph (c)(2) of this section, take the following steps to control heater settings:

(i) Set the climate control system as follows before the first acceleration (t = 20 s), or before starting the vehicle if the climate control system allows it:

(A) *Temperature.* Set controls to maximum heat. For automatic temperature control systems that allow the operator to select a specific temperature, set the heater control to 72°F or higher.

(B) *Fan speed.* Set the fan speed to full off or the lowest available speed if a full off position is not available.

(C) *Airflow direction.* Direct airflow to the front window (window defrost mode).

(D) *Air source.* If independently controllable, set the system to draw in outside air.

(ii) At the second idle of the test cycle, which occurs 125 seconds after the start of the test, set the fan speed to maximum. Complete by 130 seconds after the start of the test. Leave temperature and air source settings unchanged.

(iii) At the sixth idle of the test interval, which occurs at the deceleration to zero miles per hour 505 seconds after the start of the test, set the fan speed to the lowest setting that maintains air flow. Complete these changes by 510 seconds after the start of the test. You may use different vent and fan speed settings for the remainder of the test. Leave the temperature and air source settings unchanged.

(2) *Full automatic control.* Vehicles with full automatic control systems may instead operate as described in this paragraph (c)(2). Set the temperature to 72°F in full automatic control for the whole test, allowing the vehicle to adjust the air temperature and direction of the airflow.

(3) *Multiple-zone systems.* For vehicles that have separate driver and passenger controls or separate front and rear controls, you must set all temperature and fan controls as described in paragraphs (c)(1) and (2) of this section, except that rear controls need not be set to defrost the front window.

(4) A*lternative test procedures.* We may approve the use of other settings under 40 CFR 86.1840 if a vehicle's climate control system is not compatible with the provisions of this section.

* * * * *

■ 389. Amend § 1066.801 by revising paragraph (e) to read as follows:

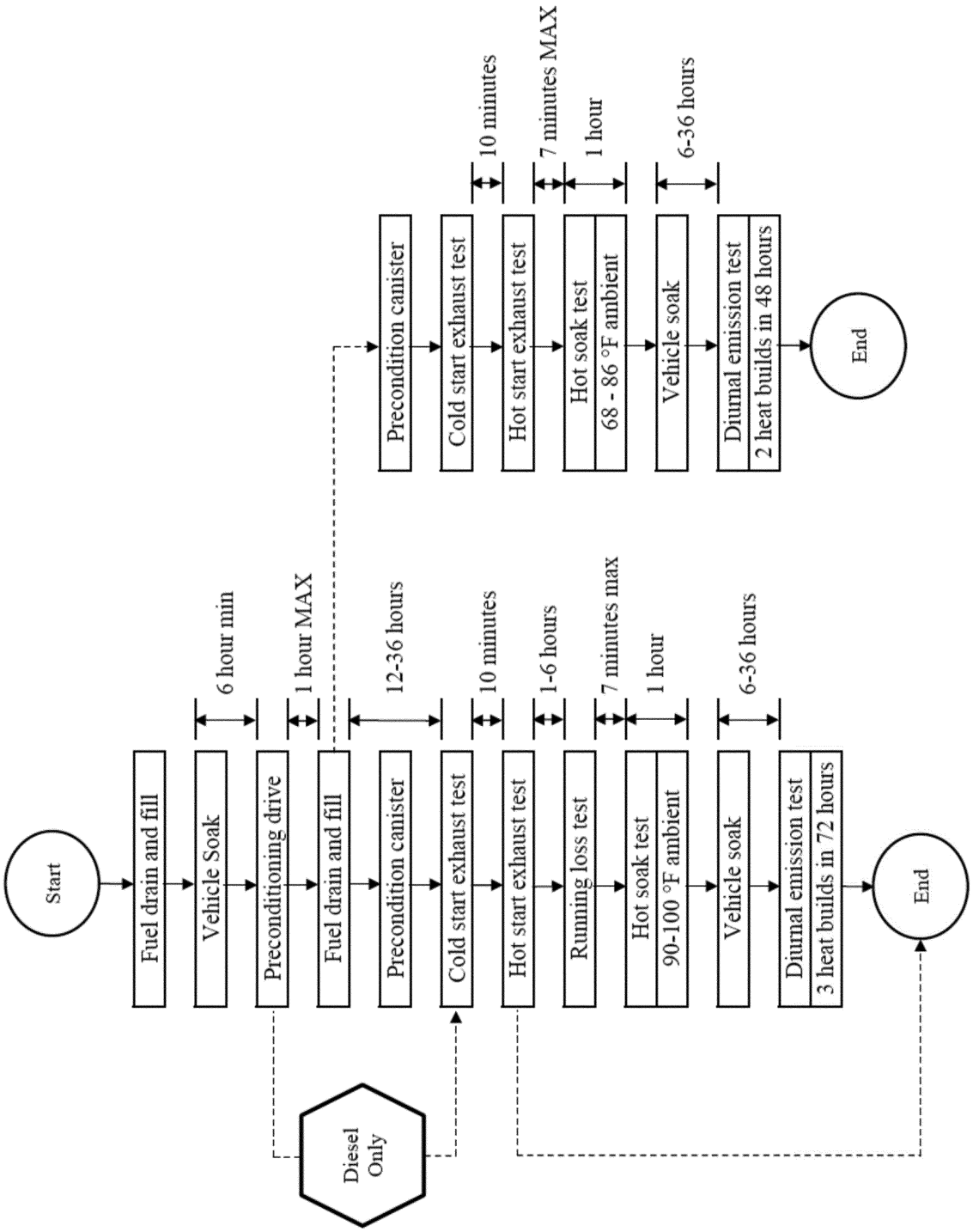
§ 1066.801 Applicability and general provisions.

* * * * *

(e) The following figure illustrates the FTP test sequence for measuring exhaust and evaporative emissions:

BILLING CODE 6560–50–P

Figure 1 of §1066.801–FTP test sequence



BILLING CODE 6560–50–C

■ 390. Amend § 1066.835 by revising paragraphs (a) and (f)(2) to read as follows:

§ 1066.835 Exhaust emission test procedure for SC03 emissions.

* * * * *

(a) Drain and refill the vehicle's fuel tank(s) if testing starts more than 72 hours after the most recent FTP or HFET measurement (with or without evaporative emission measurements).

* * * * *

(f) * * *

(2) *Conditions before and after testing.* Use good engineering judgment to demonstrate that you meet the specified temperature and humidity tolerances in paragraph (f)(1) of this section at all times before and between emission measurements.

* * * * *

■ 391. Revise § 1066.930 to read as follows:

§ 1066.930 Equipment for point-source measurement of running losses.

For point-source measurement of running loss emissions, use equipment meeting the specifications in 40 CFR 86.107–96(i).

■ 392. Amend § 1066.1005 by revising paragraphs (a), (c), (d), (e), and (f) to read as follows:

§ 1066.1005 Symbols, abbreviations, acronyms, and units of measure.

* * * * *

(a) *Symbols for quantities.* This part uses the following symbols and units of measure for various quantities:

TABLE 1 OF § 1066.1005—SYMBOLS FOR QUANTITIES

Symbol	Quantity	Unit	Unit symbol	Unit in terms of SI base units
α	atomic hydrogen to carbon ratio	mole per mole	mol/mol	1.
A	area	square meter	m^2	m^2.
A	vehicle frictional load	pound force or newton	lbf or N	$m \cdot kg \cdot s^{-2}$.
a_g	acceleration of Earth's gravity	meters per second squared	m/s^2	$m \cdot s^{-2}$.
a_m	calculated vehicle frictional load	pound force or newton	lbf or N	$m \cdot kg \cdot s^{-2}$.
a_0	intercept of least squares regression.			
a_1	slope of least squares regression.			
a	acceleration	feet per second squared or meters per second squared.	ft/s^2 or m/s^2	$m \cdot s^{-2}$.
B	vehicle load from drag and rolling resistance.	pound force per mile per hour or newton second per meter.	lbf/(mi/hr) or N·s/m	$kg \cdot s^{-1}$.
β	ratio of diameters	meter per meter	m/m	1.
β	atomic oxygen to carbon ratio	mole per mole	mol/mol	1.
c	conversion factor.			
C	vehicle-specific aerodynamic effects	pound force per mile per hour squared or newton-second squared per meter squared.	$lbf/(mi/hr)^2$ or $N \cdot s^2/m^2$.	$m^{-1} \cdot kg$.
$C\#$	number of carbon atoms in a molecule	$C\#$	number of carbon atoms in a molecule.	$C\#$.
C_d	discharge coefficient.			
C_dA	drag area	meter squared	m^2	m^2.
C_f	flow coefficient.			
C_p	heat capacity at constant pressure	joule per kelvin	J/K	$m^2 \cdot kg \cdot s^{-2} \cdot K^{-1}$.
C_v	heat capacity at constant volume	joule per kelvin	J/K	$m^2 \cdot kg \cdot s^{-2} \cdot K^{-1}$.
d	diameter	meters	m	m.
D	distance	miles or meters	mi or m	m.
D	slope correlation	pound force per mile per hour squared or newton second squared per meter squared.	$lbf/(mi/hr)^2$ or $N \cdot s^2/m^2$.	$m^{-2} \cdot kg$.
DF	dilution factor.			1.
e	mass weighted emission result	grams/mile	g/mi.	
F	force	pound force or newton	lbf or N	$kg \cdot s^{-2}$.
f	frequency	hertz	Hz	s^{-1}.
fn	angular speed (shaft)	revolutions per minute	r/min	$\pi \cdot 30 \cdot s^{-1}$.
FC	friction compensation error	horsepower or watt	W	$m^2 \cdot kg \cdot s^{-3}$.
FR	road-load force	pound force or newton	lbf or N	$kg \cdot s^{-2}$.
γ	ratio of specific heats	(joule per kilogram kelvin) per (joule per kilogram kelvin).	(J/(kg·K))/(J/(kg·K))	1.
H	ambient humidity	grams water vapor per kilogram dry air	g H_2O vapor/kg dry air.	g H_2O vapor/kg dry air.
Δh	change in height	meters	m	m.
I	inertia	pound mass or kilogram	lbm or kg	kg.
I	current	ampere	A	A.
i	indexing variable.			
IR	inertia work rating.			
K	correction factor			1.
K_v	calibration coefficient		$m^4 \cdot s \cdot K^{0.5}/kg$	$m^4 \cdot kg^{-1} \cdot s \cdot K^{0.5}$.
μ	viscosity, dynamic	pascal second	Pa·s	$m^{-1} \cdot kg \cdot s^{-1}$.
M	molar mass	gram per mole	g/mol	$10–3 \cdot kg \cdot mol^{-1}$.
M_e	effective mass	kilogram	kg	kg.
m	mass	pound mass or kilogram	lbm or kg	kg.
N	total number in series.			
n	total number of pulses in a series.			

TABLE 1 OF § 1066.1005—SYMBOLS FOR QUANTITIES—Continued

Symbol	Quantity	Unit	Unit symbol	Unit in terms of SI base units
p	pressure	pascal	Pa	$m^{-1} \cdot kg \cdot s^{-2}$.
Δp	differential static pressure	pascal	Pa	$m^{-1} \cdot kg \cdot s^{-2}$.
p_d	saturated vapor pressure at ambient dry bulb temperature.	kilopascal	kPa	$m^{-1} \cdot kg \cdot s^{-1}$.
PF	penetration fraction.			
ρ	mass density	kilogram per cubic meter	kg/m^3	$m^{-3} \cdot kg$.
R	dynamometer roll revolutions	revolutions per minute	rpm	$\pi \cdot 30^{-1} \cdot s^{-1}$.
r	ratio of pressures	pascal per pascal	Pa/Pa	1.
r^2	coefficient of determination.			
Re#	Reynolds number.			
RF	response factor.			
RH	relative humidity.			
S	Sutherland constant	kelvin	K	K.
SEE	standard error of the estimate.			
SG	specific gravity.			
Δs	distance traveled during measurement interval.	meters	m	m.
T	absolute temperature	kelvin	K	K.
T	Celsius temperature	degree Celsius	°C	K − 273.15.
T	torque (moment of force)	newton meter	N·m	$m^2 \cdot kg \cdot s^{-2}$.
t	time	hour or second	hr or s	s.
Δt	time interval, period, 1/frequency	second	s	s.
U	voltage	volt	V	$m^2 \cdot kg \cdot s^{-3} \cdot A^{-1}$.
v	speed	miles per hour or meters per second	mi/hr or m/s	$m \cdot s^{-1}$.
V	volume	cubic meter	m^3	m^3.
$\dot{V}$	flow volume rate	cubic feet per minute or cubic meter per second.	ft^3/min or m^3/s	m^3/s^{-1}.
VP	volume percent.			
x	concentration of emission over a test interval.	part per million	ppm.	
y	generic variable.			
Z	compressibility factor.			

* * * * *

(c) *Superscripts.* This part uses the following superscripts for modifying quantity symbols:

TABLE 3 OF § 1066.1005—SUPERSCRIPTS

Superscript	Meaning
overbar (such as $\bar{y}$)	arithmetic mean.
overdot (such as $\dot{y}$)	quantity per unit time.

(d) *Subscripts.* This part uses the following subscripts for modifying quantity symbols:

TABLE 4 OF § 1066.1005—SUBSCRIPTS

Subscript	Meaning
0	reference.
abs	absolute quantity.
AC17	air conditioning 2017 test interval.
act	actual or measured condition.
actint	actual or measured condition over the speed interval.
adj	adjusted.
air	air, dry.
atmos	atmospheric.
b	base.
bkgnd	background.
c	cold.
comp	composite.
cor	corrected.
cs	cold stabilized.
ct	cold transient.
cUDDS	cold-start UDDS.
D	driven.
dew	dewpoint.
dexh	dilute exhaust quantity.
dil	dilute.
e	effective.
emission	emission specie.
error	error.

TABLE 4 OF § 1066.1005—SUBSCRIPTS—Continued

Subscript	Meaning
EtOH	ethanol.
exh	raw exhaust quantity.
exp	expected quantity.
fil	filter.
final	final.
flow	flow measurement device type.
gas	gaseous.
h	hot.
HFET	highway fuel economy test.
hs	hot stabilized.
ht	hot transient.
hUDDS	hot-start UDDS.
i	an individual of a series.
ID	driven inertia.
in	inlet.
int	intake.
init	initial quantity, typically before an emission test.
IT	target inertia.
liq	liquid.
max	the maximum (*i.e.,* peak) value expected at the standard over a test interval; not the maximum of an instrument range.
meas	measured quantity.
mix	dilute exhaust gas mixture.
out	outlet.
PM	particulate matter.
record	record.
ref	reference quantity.
rev	revolution.
roll	dynamometer roll.
s	settling.
s	slip.
s	stabilized.
sat	saturated condition.
SC03	air conditioning driving schedule.
span	span quantity.
sda	secondary dilution air.
std	standard conditions.
T	target.
t	throat.
test	test quantity.
uncor	uncorrected quantity.
w	weighted.
zero	zero quantity.

(e) *Other acronyms and abbreviations.* This part uses the following additional abbreviations and acronyms:

TABLE 5 OF § 1066.1005—OTHER ACRONYMS AND ABBREVIATIONS

Acronym	Meaning
A/C	air conditioning.
AC17	air conditioning 2017 test interval.
ALVW	adjusted loaded vehicle weight.
ASME	American Society of Mechanical Engineers.
CFR	Code of Federal Regulations.
CFV	critical-flow venturi.
CNG	compressed natural gas.
CVS	constant-volume sampler.
EPA	Environmental Protection Agency.
ETW	equivalent test weight.
EV	electric vehicle.
FID	flame-ionization detector.
FTP	Federal test procedure.
GC	gas chromatograph.
GEM	greenhouse gas emissions model.
GHG	greenhouse gas (including CO_2, N_2O, and CH_4).
GPS	global positioning system.
GVWR	gross vehicle weight rating.

TABLE 5 OF § 1066.1005—OTHER ACRONYMS AND ABBREVIATIONS—Continued

Acronym	Meaning
HEV	hybrid electric vehicle, including plug-in hybrid electric vehicles.
HFET	highway fuel economy test.
HLDT	heavy light-duty truck.
HPLC	high pressure liquid chromatography.
IBR	incorporated by reference.
LA–92	Los Angeles 1992 driving schedule.
MDPV	medium-duty passenger vehicle.
NIST	National Institute for Standards and Technology.
NMC	nonmethane cutter.
PDP	positive-displacement pump.
PHEV	plug-in hybrid electric vehicle.
PM	particulate matter.
RESS	rechargeable energy storage system.
ppm	parts per million.
SAE	Society of Automotive Engineers.
SC03	air conditioning driving schedule.
SEA	selective enforcement audit.
SFTP	Supplemental Federal Test Procedure.
SI	International System of Units.
SSV	subsonic venturi.
UDDS	urban dynamometer driving schedule.
US06	aggressive driving schedule.
U.S.C.	United States Code.
WWV	NIST radio station call sign.

(f) *Densities of chemical species.* This part uses the following densities of chemical species:

TABLE 6 OF § 1066.1005—DENSITIES OF CHEMICAL SPECIES

Symbol	Quantity [a] [b]	g/m^3	g/ft^3
ρ_{CH4}	density of methane	666.905	18.8847
ρ_{CH3OH}	density of methanol	1332.02	37.7185
ρ_{C2H5OH}	C_1-equivalent density of ethanol	957.559	27.1151
ρ_{C2H4O}	C_1-equivalent density of acetaldehyde	915.658	25.9285
ρ_{C3H8}	density of propane	611.035	17.3026
ρ_{C3H7OH}	C_1-equivalent density of propanol	832.74	23.5806
ρ_{CO}	density of carbon monoxide	1164.41	32.9725
ρ_{CO2}	density of carbon dioxide	1829.53	51.8064
$\rho_{HC\text{-}gas}$	effective density of hydrocarbon—gaseous fuel [c]	(see 3)	(see 3)
ρ_{CH2O}	density of formaldehyde	1248.21	35.3455
$\rho_{HC\text{-}liq}$	effective density of hydrocarbon—liquid fuel [d]	576.816	16.3336
$\rho_{NMHC\text{-}gas}$	effective density of nonmethane hydrocarbon—gaseous fuel [c]	(see 3)	(see 3)
$\rho_{NMHC\text{-}liq}$	effective density of nonmethane hydrocarbon—liquid fuel [d]	576.816	16.3336
$\rho_{NMHCE\text{-}gas}$	effective density of nonmethane equivalent hydrocarbon—gaseous fuel [c]	(see 3)	(see 3)
$\rho_{NMHCE\text{-}liq}$	effective density of nonmethane equivalent hydrocarbon—liquid fuel [d]	576.816	16.3336
ρ_{NOx}	effective density of oxides of nitrogen [e]	1912.5	54.156
ρ_{N2O}	density of nitrous oxide	1829.66	51.8103
$\rho_{THC\text{-}liq}$	effective density of total hydrocarbon—liquid fuel [d]	576.816	16.3336
$\rho_{THCE\text{-}liq}$	effective density of total equivalent hydrocarbon—liquid fuel [d]	576.816	16.3336

[a] Densities are given at 20 °C and 101.325 kPa.
[b] Densities for all hydrocarbon containing quantities are given in g/m^3-carbon atom and g/ft^3-carbon atom.
[c] The effective density for natural gas fuel and liquefied petroleum gas fuel are defined by an atomic hydrogen-to-carbon ratio, α, of the hydrocarbon components of the test fuel. $\rho_{HCgas} = 41.57 \cdot (12.011 + (\alpha \cdot 1.008))$.
[d] The effective density for gasoline and diesel fuel are defined by an atomic hydrogen-to-carbon ratio, α, of 1.85.
[e] The effective density of NO_X is defined by the molar mass of nitrogen dioxide, NO_2.

* * * * *

PART 1068—GENERAL COMPLIANCE PROVISIONS FOR HIGHWAY, STATIONARY, AND NONROAD PROGRAMS

■ 393. The authority citation for part 1068 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

■ 394. Amend § 1068.1 by revising paragraph (a) and removing and reserving paragraph (d)(2) to n reads as follows:

§ 1068.1 Does this part apply to me?

(a) The provisions of this part apply to everyone with respect to the engine and equipment categories as described in this paragraph (a). The provisions of this part apply to everyone, including owners, operators, parts manufacturers, and persons performing maintenance.

Where we identify an engine category, the provisions of this part also apply with respect to the equipment using such engines. This part applies to different engine and equipment categories as follows:

(1) This part applies to motor vehicles we regulate under 40 CFR part 86, subpart S, to the extent and in the manner specified in 40 CFR parts 85 and 86.

(2) This part applies for heavy-duty motor vehicles we regulate under 40 CFR part 1037, subject to the provisions of 40 CFR parts 85 and 1037. This includes trailers. This part applies to other heavy-duty motor vehicles and motor vehicle engines to the extent and in the manner specified in 40 CFR parts 85, 86, and 1036.

(3) This part applies to highway motorcycles we regulate under 40 CFR part 86, subparts E and F, to the extent and in the manner specified in 40 CFR parts 85 and 86.

(4) This part applies to aircraft we regulate under 40 CFR part 87 to the extent and in the manner specified in 40 CFR part 87.

(5) This part applies for locomotives that are subject to the provisions of 40 CFR part 1033. This part does not apply for locomotives or locomotive engines that were originally manufactured before July 7, 2008, and that have not been remanufactured on or after July 7, 2008.

(6) This part applies for land-based nonroad compression-ignition engines that are subject to the provisions of 40 CFR part 1039.

(7) This part applies for stationary compression-ignition engines certified using the provisions of 40 CFR parts 1039 and 1042 as described in 40 CFR part 60, subpart IIII.

(8) This part applies for marine compression-ignition engines that are subject to the provisions of 40 CFR part 1042.

(9) This part applies for marine spark-ignition engines that are subject to the provisions of 40 CFR part 1045.

(10) This part applies for large nonroad spark-ignition engines that are subject to the provisions of 40 CFR part 1048.

(11) This part applies for stationary spark-ignition engines certified using the provisions of 40 CFR part 1048 or 1054, as described in 40 CFR part 60, subpart JJJJ.

(12) This part applies for recreational engines and vehicles, including snowmobiles, off-highway motorcycles, and all-terrain vehicles that are subject to the provisions of 40 CFR part 1051.

(13) This part applies for small nonroad spark-ignition engines that are subject to the provisions of 40 CFR part 1054.

(14) This part applies for fuel-system components installed in nonroad equipment powered by volatile liquid fuels that are subject to the provisions of 40 CFR part 1060.

* * * * *

■ 395. Amend § 1068.10 by revising the section heading and paragraphs (b) and (c) to read as follows:

§ 1068.10 Confidential business information.

* * * * *

(b) We will store your confidential business information as described in 40 CFR part 2. Also, we will disclose it only as specified in 40 CFR part 2. This paragraph (b) applies both to any information you send us and to any information we collect from inspections, audits, or other site visits.

(c) If you send us a second copy without the confidential business information, we will assume it contains nothing confidential whenever we need to release information from it.

* * * * *

■ 396. Amend § 1068.240 by revising paragraphs (b)(6) and (c)(1) and (3) to read as follows:

§ 1068.240 Exempting new replacement engines.

* * * * *

(b) * * *

(6) Engines exempt under this paragraph (b) may not be introduced into U.S. commerce before you make the determinations under paragraph (b)(2) of this section, except as specified in this paragraph (b)(6). We may waive the restriction in this paragraph (b)(6) for engines identified under paragraph (c)(5) of this section that you ship to a distributor. Where we waive the restriction in this paragraph (b)(6), you must take steps to ensure that the engine is installed consistent with the requirements of this paragraph (b). For example, at a minimum you must report to us annually whether engines we allowed you to ship to a distributor under this paragraph (b)(6) have been placed into service or remain in inventory. After an engine is placed into service, your report must describe how the engine was installed consistent with the requirements of this paragraph (b). Send these reports to the Designated Compliance Officer by the deadlines we specify.

(c) * * *

(1) You may produce a limited number of replacement engines under this paragraph (c) representing 0.5 percent of your annual production volumes for each category and subcategory of engines identified in Table 1 to this section or five engines for each category and subcategory, whichever is greater. Calculate this number by multiplying your annual U.S.-directed production volume by 0.005 (or 0.01 through 2013) and rounding to the nearest whole number. Determine the appropriate production volume by identifying the highest total annual U.S.-directed production volume of engines from the previous three model years for all your certified engines from each category or subcategory identified in Table 1 to this section, as applicable. In unusual circumstances, you may ask us to base your production limits on U.S.-directed production volume for a model year more than three years prior. You may include stationary engines and exempted engines as part of your U.S.-directed production volume. Include U.S.-directed engines produced by any affiliated companies and those from any other companies you license to produce engines for you.

* * * * *

(3) Send the Designated Compliance Officer a report by September 30 of the year following any year in which you produced exempted replacement engines under this paragraph (c).

(i) In your report include the total number of replacement engines you produce under this paragraph (c) for each category or subcategory, as appropriate, and the corresponding total production volumes determined under paragraph (c)(1) of this section. If you send us a report under this paragraph (c)(3), you must also include the total number of complete and partially complete replacement engines you produced under paragraphs (b) and (e) of this section (including any replacement marine engines subject to reporting under 40 CFR 1042.615).

(ii) Count exempt engines as tracked under paragraph (b) of this section only if you meet all the requirements and conditions that apply under paragraph (b)(2) of this section by the due date for the annual report. In the annual report you must identify any replaced engines from the previous year that you were not able to recover by the due date for the annual report. Continue to report those engines in later reports until you recover the replaced engines. If any replaced engine is not recovered for the fifth annual report following the production report, treat this as an untracked replacement in the fifth annual report for the preceding year.

(iii) You may include the information required under this paragraph (c)(3) in

production reports required under the standard-setting part.

* * * * *

PART 1074—PREEMPTION OF STATE STANDARDS AND PROCEDURES FOR WAIVER OF FEDERAL PREEMPTION FOR NONROAD ENGINES AND NONROAD VEHICLES

■ 397. The authority citation for part 1074 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

■ 398. Add appendix A to subpart A to read as follows:

Appendix A to Subpart A of Part 1074—State Regulation of the Use and Operation of Nonroad Internal Combustion Engines

(a) This appendix describes EPA's interpretation of the Clean Air Act regarding the authority of states to regulate the use and operation of nonroad engines.

(b) EPA believes that states are not precluded under 42 U.S.C. 7543 from regulating the use and operation of nonroad engines, such as regulations on hours of usage, daily mass emission limits, or sulfur limits on fuel; nor are permits regulating such operations precluded, once the engine is no longer new. EPA believes that states are precluded from requiring retrofitting of used nonroad engines except that states are permitted to adopt and enforce any such retrofitting requirements identical to California requirements which have been authorized by EPA under 42 U.S.C. 7543.

[FR Doc. 2021–05306 Filed 6–28–21; 8:45 am]

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