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6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA-HQ-OAR-2018-0753; FRL-9993-20-OAR]

RIN 2060-AT01

National Emission Standards for Hazardous Air Pollutants: Engine Test Cells/Stands Residual Risk and Technology Review

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing the results of the residual risk and technology reviews (RTR) for the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Engine Test Cells/Stands. We found risks due to emissions of air toxics from this source category to be acceptable and determined that the current NESHAP provides an ample margin of safety to protect public health. We identified no new cost-effective controls under the technology review to achieve further emission reductions. We are proposing no revisions to the numerical emission limit based on the risk analysis and technology review. We are proposing to amend provisions addressing periods of startup, shutdown, and malfunction (SSM), to amend provisions regarding electronic reporting and to make clarifying and technical corrections.

DATES: *Comments*. Comments must be received on or before **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. Under the Paperwork Reduction Act (PRA), comments on the information collection provisions are best assured of consideration if the Office of Management and Budget (OMB) receives a copy of your

comments on or before **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

Public hearing. If anyone contacts us requesting a public hearing on or before **[INSERT DATE 5 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, we will hold a hearing. Additional information about the hearing, if requested, will be published in a subsequent **Federal Register** document and posted at *https://www.epa.gov/stationary-sources-air-pollution/engine-test-cellsstands-national-emission-standards-hazardous-air*. See **SUPPLEMENTARY INFORMATION** for information on requesting and registering for a public hearing.

ADDRESSES: You may send comments, identified by Docket ID No. EPA-HQ-OAR-2018-0753, by any of the following methods:

- Federal eRulemaking Portal: *https://www.regulations.gov/* (our preferred method). Follow the online instructions for submitting comments.
- Email: *a-and-r-docket@epa.gov*. Include Docket ID No. EPA-HQ-OAR-2018-0753 in the subject line of the message.
- Fax: (202) 566-9744. Attention Docket ID No. EPA-HQ-OAR-2018-0753.
- Mail: U.S. Environmental Protection Agency, EPA Docket Center, Docket ID No. EPA-HQ-OAR-2018-0753, Mail Code 28221T, 1200 Pennsylvania Avenue, NW, Washington, DC 20460.
- Hand/Courier Delivery: EPA Docket Center, WJC West Building, Room 3334, 1301 Constitution Avenue, NW, Washington, DC 20004. The Docket Center's hours of operation are 8:30 a.m. – 4:30 p.m., Monday – Friday (except Federal holidays).

Instructions: All submissions received must include the Docket ID No. for this rulemaking. Comments received may 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 **SUPPLEMENTARY INFORMATION** section of this document.

FOR FURTHER INFORMATION CONTACT: For questions about this proposed action, contact Jim Eddinger, Sector Policies and Programs Division (Mail Code D243-01), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-5426; fax number: (919) 541-4991; and email address: *eddinger.jim@epa.gov*. For specific information regarding the risk modeling methodology, contact Ted Palma, Health and Environmental Impacts Division (C539-02), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-5470; fax number: (919) 541-0840; and email address: *palma.ted@epa.gov*. For questions about monitoring and testing requirements, contact Kevin McGinn, Sector Policies and Programs Division (Mail Code D243-05), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-3796; fax number: (919) 541-4991; and email address: *mcginn.kevin@epa.*gov. For information about the applicability of the national emissions standards for hazardous air pollutants (NESHAP) to a particular entity, contact Sara Ayres, Office of Enforcement and Compliance Assurance, U.S. Environmental Protection Agency, USEPA Region 5 (Mail Code E-19), 77 West Jackson Boulevard, Chicago, Illinois 60604; telephone number: (312) 353-6266; and email address: *ayres.sara@epa.gov*.

SUPPLEMENTARY INFORMATION:

Public hearing. Please contact Adrian Gates at (919) 541-4860 or by email at *gates.adrian@epa.gov* to request a public hearing, to register to speak at the public hearing, or to inquire as to whether a public hearing will be held.

Docket. The EPA has established a docket for this rulemaking under Docket ID No. EPA-HQ-OAR-2018-0753. All documents in the docket are listed in Regulations.gov. Although listed, some information is not publicly available, *e.g.*, CBI (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. Publicly available docket materials are available either electronically in Regulations.gov or in hard copy at the EPA Docket Center, Room 3334, WJC West Building, 1301 Constitution Avenue, NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the EPA Docket Center is (202) 566-1742.

Instructions. Direct your comments to Docket ID No. EPA-HQ-OAR-2018-0753. The EPA's policy is that all comments received will be included in the public docket without change and may be made available online at *https://www.regulations.gov/*, including any personal information provided, unless the comment includes information claimed to be CBI or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through *https://www.regulations.gov/* or email. This type of information should be submitted by mail as discussed below.

The EPA may publish any comment received to its public docket. 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*.

The *https://www.regulations.gov/* website allows you to submit your comment anonymously, which means the EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an email comment directly to the EPA without going through *https://www.regulations.gov/*, 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. If you submit an electronic comment, the EPA recommends that you include your name and other contact information in the body of your comment and with any digital storage media you submit. If the EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, the EPA may not be able to consider your comment. Electronic files should not include special characters or any form of encryption and be free of any defects or viruses. For additional information about the EPA's public docket, visit the EPA Docket Center homepage at *https://www.epa.gov/dockets*.

Submitting CBI. Do not submit information containing CBI to the EPA through *https://www.regulations.gov* or email. Clearly mark the part or all of the information that you claim to be CBI. For CBI information on any digital storage media that you mail to the EPA,

mark the outside of the digital storage media as CBI and then identify electronically within the digital storage media the specific information that is claimed as CBI. In addition to one complete version of the comments that includes information claimed as CBI, you must submit a copy of the comments that does not contain the information claimed as CBI directly to the public docket through the procedures outlined in *Instructions* above. If you submit any digital storage media that does not contain CBI, mark the outside of the digital storage media clearly that it does not contain CBI. Information not marked as CBI will be included in the public docket and the EPA's electronic public docket without prior notice. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 Code of Federal Regulations (CFR) part 2. Send or deliver information identified as CBI only to the following address: OAQPS Document Control Officer (C404-02), OAQPS, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711, Attention Docket ID No. EPA-HQ-OAR-2018-0753.

Preamble acronyms and abbreviations. We use multiple acronyms and terms in this preamble. While this list may not be exhaustive, to ease the reading of this preamble and for reference purposes, the EPA defines the following terms and acronyms here:

AEGL	acute exposure guideline level
AERMOD	air dispersion model used by the HEM-3 model
ATSDR	Agency for Toxics Substances and Disease Registry
BACT	best available control technology
CAA	Clean Air Act
CalEPA	California EPA
CBI	Confidential Business Information
CDX	Central Data Exchange
CEDRI	Compliance and Emissions Data Reporting Interface
CFR	Code of Federal Regulations
CO	carbon monoxide
DoD	Department of Defense
ECHO	Enforcement and Compliance History Online

EPA	Environmental Protection Agency
ERPG	Emergency Response Planning Guideline
ERT	Electronic Reporting Tool
HAP	hazardous air pollutant(s)
HCl	hydrochloric acid
HEM-3	Human Exposure Model, Version 1.1.0
HF	hydrogen fluoride
HI	hazard index
hp	horsepower
HQ	hazard quotient
IRIS	Integrated Risk Information System
km	kilometer
LAER	lowest achievable emissions rate
MACT	maximum achievable control technology
MIR	maximum individual risk
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System
NASA	National Aeronautics and Space Administration
NEI	National Emission Inventory
NESHAP	national emission standards for hazardous air pollutants
OAQPS	Office of Air Quality Planning and Standards
OMB	Office of Management and Budget
PB-HAP	hazardous air pollutants known to be persistent and bio-accumulative in the environment
PM_{10}	particulate matter with particles less than 10 micrometers in diameter
POM	polycyclic organic matter
ppmvd	parts per million by volume dry basis
RACT	reasonably available control technology
REL	reference exposure level
RFA	Regulatory Flexibility Act
RfC	reference concentration
RfD	reference dose
RTR	residual risk and technology review
SAB	Science Advisory Board
SCC	Source Classification Code
SSM	startup, shutdown, and malfunction
THC	total hydrocarbons
TOSHI	target organ-specific hazard index

tpy	tons per year
TRIM.FaTE	Total Risk Integrated Methodology.Fate, Transport, and Ecological Exposure model
UF	uncertainty factor
$\mu g/m^3$	microgram per cubic meter
UMRA	Unfunded Mandates Reform Act
URE	unit risk estimate
VOC	volatile organic compounds

Organization of this document. The information in this preamble is organized as follows:

F. Executive Order 13132: Federalism
G. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments
H. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks
I. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use
J. National Technology Transfer and Advancement Act (NTTAA)
K. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

I. General Information

A. Does this action apply to me?

Table 1 of this preamble lists the NESHAP and associated regulated industrial source category that is the subject of this proposal. Table 1 is not intended to be exhaustive, but rather provides a guide for readers regarding the entities that this proposed action is likely to affect. The proposed standards, once promulgated, will be directly applicable to the affected sources. Federal, state, local, and tribal government entities would not be affected by this proposed action. As defined in the *Initial List of Categories of Sources Under Section 112(c)(1) of the Clean Air Act Amendments of 1990* (see 57 FR 31576; July 16, 1992) and *Documentation for Developing the Initial Source Category List, Final Report* (*see* EPA-450/3-91-030, July 1992), the "Engine Test Facilities" source category is any facility engaged in the testing of stationary and mobile engines, including turbines and reciprocating engines. Test cells/stands used for testing rocket engines were identified as an additional subcategory during the NESHAP rulemaking.

TABLE 1. NESHAP AND INDUSTRIAL SOURCE CATEGORIES AFFECTED BY THIS PROPOSED ACTION

Source Category	NESHAP	NAICS Code[1]
Engine Test Facilities	Engine Test Cells/Stands	333120,333618, 333111, 334312, 336111, 336120, 336112, 336992, 336312, 336350, 54171, 541380, 333611, 336411, 336412, 336414, 92711

[1] North American Industry Classification System.

B. Where can I get a copy of this document and other related information?

In addition to being available in the docket, an electronic copy of this action is available on the Internet. Following signature by the EPA Administrator, the EPA will post a copy of this proposed action at *https://www.epa.gov/stationary-sources-air-pollution/engine-test-cellsstands-national-emission-standards-hazardous-air*. Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of the proposal and key technical documents at this same website. Information on the overall RTR program is available at *https://www3.epa.gov/ttn/atw/rrisk/rtrpg.html*.

A redline version of the regulatory language that incorporates the proposed changes in this action is available in the docket for this action (Docket ID No. EPA-HQ-OAR-2018-0753).

II. Background

A. What is the statutory authority for this action?

The statutory authority for this action is provided by sections 112 and 301 of the Clean Air Act (CAA), as amended (42 U.S.C. 7401 *et seq*.). Section 112 of the CAA establishes a two-stage regulatory process to develop standards for emissions of hazardous air pollutants (HAP) from stationary sources. Generally, the first stage involves establishing technology-based standards and the second stage involves evaluating those standards that are based on maximum achievable control technology (MACT) to determine whether additional standards are needed to address any remaining risk associated with HAP emissions. This second stage is commonly referred to as the "residual risk review." In addition to the residual risk review, the CAA also requires the EPA to review standards set under CAA section 112 every 8 years to determine if there are "developments in practices, processes, or control technologies" that may be appropriate to incorporate into the standards. This review is commonly referred to as the "technology

review." When the two reviews are combined into a single rulemaking, it is commonly referred to as the "risk and technology review." The discussion that follows identifies the most relevant statutory sections and briefly explains the contours of the methodology used to implement these statutory requirements. A more comprehensive discussion appears in the document titled *CAA Section 112 Risk and Technology Reviews: Statutory Authority and Methodology*, in the docket for this rulemaking.

In the first stage of the CAA section 112 standard setting process, the EPA promulgates technology-based standards under CAA section 112(d) for categories of sources identified as emitting one or more of the HAP listed in CAA section 112(b). Sources of HAP emissions are either major sources or area sources, and CAA section 112 establishes different requirements for major source standards and area source standards. "Major sources" are those that emit or have the potential to emit 10 tons per year (tpy) or more of a single HAP or 25 tpy or more of any combination of HAP. All other sources are "area sources." For major sources, CAA section 112(d)(2) provides that the technology-based NESHAP must reflect the maximum degree of emission reductions of HAP achievable (after considering cost, energy requirements, and non-air quality health and environmental impacts). These standards are commonly referred to as MACT standards. CAA section 112(d)(3) also establishes a minimum control level for MACT standards, known as the MACT "floor." The EPA must also consider control options that are more stringent than the floor. Standards more stringent than the floor are commonly referred to as beyond-the-floor standards. In certain instances, as provided in CAA section 112(h), the EPA may set work practice standards where it is not feasible to prescribe or enforce a numerical emission standard. For area sources, CAA section 112(d)(5) gives the EPA discretion to set standards based on

generally available control technologies or management practices (GACT standards) in lieu of MACT standards.

The second stage in standard-setting focuses on identifying and addressing any remaining (*i.e.,* "residual") risk according to CAA section 112(f). For source categories subject to MACT standards, section 112(f)(2) of the CAA requires the EPA to determine whether promulgation of additional standards is needed to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect. Section 112(d)(5) of the CAA provides that this residual risk review is not required for categories of area sources subject to GACT standards. Section 112(f)(2)(B) of the CAA further expressly preserves the EPA's use of the two-step approach for developing standards to address any residual risk and the Agency's interpretation of "ample margin of safety" developed in the *National Emissions Standards for Hazardous Air Pollutants: Benzene Emissions from Maleic Anhydride Plants, Ethylbenzene/Styrene Plants, Benzene Storage Vessels, Benzene Equipment Leaks, and Coke By-Product Recovery Plants* (Benzene NESHAP) (54 FR 38044, September 14, 1989). The EPA notified Congress in the Risk Report that the Agency intended to use the Benzene NESHAP approach in making CAA section 112(f) residual risk determinations (EPA-453/R-99-001, p. ES–11). The EPA subsequently adopted this approach in its residual risk determinations and the United States Court of Appeals for the District of Columbia Circuit (the Court) upheld the EPA's interpretation that CAA section 112(f)(2) incorporates the approach established in the Benzene NESHAP. See *NRDC v. EPA*, 529 F.3d 1077, 1083 (D.C. Cir. 2008).

The approach incorporated into the CAA and used by the EPA to evaluate residual risk and to develop standards under CAA section 112(f)(2) is a two-step approach. In the first step, the EPA determines whether risks are acceptable. This determination "considers all health

information, including risk estimation uncertainty, and includes a presumptive limit on maximum individual lifetime [cancer] risk (MIR)[1] of approximately 1 in 10 thousand." 54 FR 38045, September 14, 1989. If risks are unacceptable, the EPA must determine the emissions standards necessary to reduce risk to an acceptable level without considering costs. In the second step of the approach, the EPA considers whether the emissions standards provide an ample margin of safety to protect public health "in consideration of all health information, including the number of persons at risk levels higher than approximately 1 in 1 million, as well as other relevant factors, including costs and economic impacts, technological feasibility, and other factors relevant to each particular decision." *Id.* The EPA must promulgate emission standards necessary to provide an ample margin of safety to protect public health. After conducting the ample margin of safety analysis, we consider whether a more stringent standard is necessary to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect.

CAA section 112(d)(6) separately requires the EPA to review standards promulgated under CAA section 112 and revise them "as necessary (taking into account developments in practices, processes, and control technologies)" no less often than every 8 years. In conducting this review, which we call the "technology review," the EPA is not required to recalculate the MACT floor. *Natural Resources Defense Council (NRDC) v. EPA*, 529 F.3d 1077, 1084 (D.C. Cir. 2008). *Association of Battery Recyclers, Inc. v. EPA*, 716 F.3d 667 (D.C. Cir. 2013). The EPA may consider cost in deciding whether to revise the standards pursuant to CAA section 112(d)(6).

[1] Although defined as "maximum individual risk," MIR refers only to cancer risk. MIR, one metric for assessing cancer risk, is the estimated risk if an individual were exposed to the maximum level of a pollutant for a lifetime.

B. What is this source category and how does the current NESHAP regulate its HAP emissions?

The NESHAP for the Engine Test Cells/Stands source category was promulgated on May 27, 2003 (68 FR 28774), and codified at 40 CFR part 63, subpart PPPPP. As promulgated in 2003, the Engine Test Cells/Stands NESHAP applies to engine test cells/stands located at major sources of HAP emissions. An engine test cell/stand is any apparatus used for testing uninstalled stationary or uninstalled mobile engines. That is, the NESHAP regulates the testing of engines, not the testing of any final product (*e.g.*, automobile, boat, or power generator). Engine test cells/stands are used for research and development activities (*e.g.*, new model development, endurance testing) and for quality control at engine production facilities. The affected source is defined in the NESHAP as the collection of all equipment and activities associated with engine test cells/stands used for testing uninstalled engines. The NESHAP does not apply to any portion of the affected source used in research and teaching activities at facilities that are not engaged in the development of engines or engine test services for commercial purposes or any portion of the affected source operated to test or evaluate fuels, transmissions, or electronics.

The NESHAP covers four subcategories of engine test cells/stands: (1) cells/stands used for testing internal combustion engines with rated power of 25 horsepower (hp) or more; (2) cells/stands used for testing internal combustion engines with rated power of less than 25 hp; (3) cells/stands used for testing combustion turbine engines; and (4) cells/stands used for testing rocket engines. The first two subcategories cover facilities where reciprocating engines are tested, such as automobile engines and emergency generators. The combustion turbine subcategory includes jet engines, turboprops, and gas turbines.

The affected source is further classified as either an existing, new, or reconstructed source. An affected source is said to be "existing" if its construction began on or before May 14,

2002, and no reconstruction of the source occurred after that date. An affected source is considered "new" or "reconstructed" if it was constructed or reconstructed after May 14, 2002. The distinction between "existing" and "new/reconstructed" affected sources is important as existing affected sources testing engines are not subject to emission limits. However, new and reconstructed affected sources testing internal combustion engines with a rated power of 25 hp or more are subject to emission limits.

The typical engine test cell consists of one or more stands for mounting engines, storage tanks, and piping for fuels and cooling fluids, an electronic control system, data acquisition instrumentation for monitoring and recording engine parameters during testing, blast panels, fire suppression equipment, and spill collection systems. Most engine testing is performed indoors in a purpose-built enclosure equipped with ventilation systems with hoods, ducts, and fans. However, testing of jet engines, turboprops, large turbines, and rocket engines is sometimes conducted on outdoor test stands. Some test cells/stands include climate control systems that enable testing to be completed under a variety of temperature, humidity, and pressure conditions. Test cells used for aircraft engines and rockets sometimes include specially designed air handling systems that simulate high altitude conditions. Most sources have between two and 10 engine test cells/stands. However, a few larger sources have over 100 test cells.

Engine test cells/stands emit HAP in the exhaust gases from combustion of gaseous and liquid fuels in the engines tested. The emission rates and annual emissions vary based on the size and design of the engines tested, the types of fuels burned, and the number, type, and duration of tests performed. A wide range of engines are tested in the U.S., including two- and four-stroke reciprocating engines used in boats, automobiles, buses, and trucks; combustion turbines used for power generation; jet and turboprop engines used in military and civilian aircraft; and rocket

engines used in a variety of military and civilian applications. Fuels used during testing include biofuels, natural gas, propane, gasoline, kerosene, jet fuel, diesel, and various grades of fuel oil.

The sources of emissions are the exhaust gases from combustion of fuels in the engines being tested in the test cells/stands. The primary HAP present in the exhaust gases from engine test cells/stands are formaldehyde, benzene, acetaldehyde, and 1,3-butadiene.

The Engine Test Cells/Stands NESHAP provides the owner or operator of a new or reconstructed affected source used in whole or in part for testing internal combustion engines with rated power of 25 hp or more and located at a major source of HAP emissions two compliance options: (1) reduce carbon monoxide (CO) or total hydrocarbons (THC) emissions in the exhaust from the new or reconstructed affected source to 20 parts per million by volume dry basis (ppmvd) or less, at 15-percent oxygen (O_2) content, or (2) reduce CO or THC emissions in the exhaust from the new or reconstructed affected source by 96 percent or more. If a new affected source elects to comply with the percent reduction emission limitation, the affected source must conduct an initial performance test to determine the capture and control efficiencies of the equipment and to establish operating limits to be achieved on a continuous basis.

C. *What data collection activities were conducted to support this action?*

During the development of 40 CFR part 63, subpart PPPPP, the EPA collected information on the emissions, operations, and location of engine test cells/stands. Since this information was collected prior to the 2003 promulgation of 40 CFR part 63, subpart PPPPP, the EPA prepared a questionnaire in 2016 in order to collect current information on the location and number of engine test cells/stands, types and quantities of emissions, number and type of engines tested, length and purpose of tests, annual operating hours, types and quantities of fuels burned, and information on air pollution control devices and emission points. Ten companies completed

the 2016 questionnaire for which they reported data for 15 major source facilities. The EPA used data from the 2016 questionnaires to develop the modeling dataset for the 40 CFR part 63, subpart PPPPP risk modeling.

The list of facilities that are subject to 40 CFR part 63, subpart PPPPP was developed using EPA's Enforcement and Compliance History Online (ECHO) database, the 2014 National Emissions Inventory (2014 NEI) and the facility list developed for the 2003 promulgation of 40 CFR part 63, subpart PPPPP. Facilities with engine test cells/stands were identified in the 2014 NEI records by either the source classification codes (SCCs) or NAICS codes. The facility list was then refined using air permit information to determine whether the facility was a major source of HAP and subject to 40 CFR part 63, subpart PPPPP. The initial list of facilities and their engine test cells/stands was posted to the EPA's *Engine Test Cells/Stands: National Emission Standards for Hazardous Air Pollutants (NESHAP)* website for review by industry and trade organizations.[2] The EPA also emailed the list to several trade organizations as part of an outreach effort to the industry. EPA Regional offices and state and local air pollution control agencies were asked to review the list and provide corrections as necessary. The Department of Defense (DoD) and the National Aeronautics and Space Administration (NASA) were also consulted and provided information for engine testing facilities located at research sites and military bases. Changes to the facility list were made based on the new information received. The final risk modeling datafile included all 59 facilities, each with one or more engine test cells/stands that are in the source category, not just the engine test cells/stands facilities that are subject to emission limits.

[2] See *https://www.epa.gov/stationary-sources-air-pollution/engine-test-cellsstands-national-emission-standards-hazardous-air#rule-summary*.

D. What other relevant background information and data are available?

In addition to the ECHO and NEI databases, the EPA reviewed the additional information sources listed below and consulted with stakeholders regulated under the Engine Test Cells/Stands NESHAP to determine whether there have been developments in practices, processes, or control technologies by engine testing sources. These include the following:

• Permit limits and selected compliance options from permits submitted by facilities as part of their response to the questionnaire and collected from state agencies;

• Information on air pollution control options in the engine testing industry from the reasonably available control technology/best available control technology/lowest achievable emission rate Clearinghouse (RBLC);

• Information on the most effective ways to control emissions of volatile organic compounds (VOC) and organic HAP from sources in various industries; and

• Communication with trade groups and associations representing industries in the affected NAICS categories and their members.

III. Analytical Procedures and Decision-Making

In this section, we describe the analyses performed to support the proposed decisions for the RTR and other issues addressed in this proposal.

A. How do we consider risk in our decision-making?

As discussed in section II.A of this preamble and in the Benzene NESHAP, in evaluating and developing standards under CAA section 112(f)(2), we apply a two-step approach to determine whether or not risks are acceptable and to determine if the standards provide an ample margin of safety to protect public health. As explained in the Benzene NESHAP, "the first step judgment on acceptability cannot be reduced to any single factor" and, thus, "[t]he Administrator

believes that the acceptability of risk under section 112 is best judged on the basis of a broad set of health risk measures and information." 54 FR 38046, September 14, 1989. Similarly, with regard to the ample margin of safety determination, "the Agency again considers all of the health risk and other health information considered in the first step. Beyond that information, additional factors relating to the appropriate level of control will also be considered, including cost and economic impacts of controls, technological feasibility, uncertainties, and any other relevant factors." *Id.*

The Benzene NESHAP approach provides flexibility regarding factors the EPA may consider in making determinations and how the EPA may weigh those factors for each source category. The EPA conducts a risk assessment that provides estimates of the MIR posed by the HAP emissions from each source in the source category, the hazard index (HI) for chronic exposures to HAP with the potential to cause noncancer health effects, and the hazard quotient (HQ) for acute exposures to HAP with the potential to cause noncancer health effects.[3] The assessment also provides estimates of the distribution of cancer risk within the exposed populations, cancer incidence, and an evaluation of the potential for an adverse environmental effect. The scope of the EPA's risk analysis is consistent with the EPA's response to comments on our policy under the Benzene NESHAP where the EPA explained that:

> "[t]he policy chosen by the Administrator permits consideration of multiple measures of health risk. Not only can the MIR figure be considered, but also incidence, the presence of non-cancer health effects, and the uncertainties of the risk estimates. In this way, the effect on the most exposed individuals can be reviewed as well as the impact on the general public. These factors can then be weighed in each individual case. This approach complies with the *Vinyl Chloride* mandate that the Administrator ascertain an acceptable

[3] The MIR is defined as the cancer risk associated with a lifetime of exposure at the highest concentration of HAP where people are likely to live. The HQ is the ratio of the potential exposure to the HAP to the level at or below which no adverse chronic noncancer effects are expected; the HI is the sum of HQs for HAP that affect the same target organ or organ system.

> level of risk to the public by employing his expertise to assess available data. It also complies with the Congressional intent behind the CAA, which did not exclude the use of any particular measure of public health risk from the EPA's consideration with respect to CAA section 112 regulations, and thereby implicitly permits consideration of any and all measures of health risk which the Administrator, in his judgment, believes are appropriate to determining what will 'protect the public health'."

See 54 FR 38057, September 14, 1989. Thus, the level of the MIR is only one factor to be weighed in determining acceptability of risk. The Benzene NESHAP explained that "an MIR of approximately one in 10 thousand should ordinarily be the upper end of the range of acceptability. As risks increase above this benchmark, they become presumptively less acceptable under CAA section 112, and would be weighed with the other health risk measures and information in making an overall judgment on acceptability. Or, the Agency may find, in a particular case, that a risk that includes an MIR less than the presumptively acceptable level is unacceptable in the light of other health risk factors." *Id.* at 38045. Similarly, with regard to the ample margin of safety analysis, the EPA stated in the Benzene NESHAP that: "EPA believes the relative weight of the many factors that can be considered in selecting an ample margin of safety can only be determined for each specific source category. This occurs mainly because technological and economic factors (along with the health-related factors) vary from source category to source category." *Id.* at 38061. We also consider the uncertainties associated with the various risk analyses, as discussed earlier in this preamble, in our determinations of acceptability and ample margin of safety.

The EPA notes that it has not considered certain health information to date in making residual risk determinations. At this time, we do not attempt to quantify the HAP risk that may be associated with emissions from other facilities that do not include the source category under review, mobile source emissions, natural source emissions, persistent environmental pollution, or atmospheric transformation in the vicinity of the sources in the category.

The EPA understands the potential importance of considering an individual's total exposure to HAP in addition to considering exposure to HAP emissions from the source category and facility. We recognize that such consideration may be particularly important when assessing noncancer risk, where pollutant-specific exposure health reference levels (*e.g.*, reference concentrations (RfCs)) are based on the assumption that thresholds exist for adverse health effects. For example, the EPA recognizes that, although exposures attributable to emissions from a source category or facility alone may not indicate the potential for increased risk of adverse noncancer health effects in a population, the exposures resulting from emissions from the facility in combination with emissions from all of the other sources (*e.g.*, other facilities) to which an individual is exposed may be sufficient to result in an increased risk of adverse noncancer health effects. In May 2010, the Science Advisory Board (SAB) advised the EPA "that RTR assessments will be most useful to decision makers and communities if results are presented in the broader context of aggregate and cumulative risks, including background concentrations and contributions from other sources in the area."[4]

In response to the SAB recommendations, the EPA incorporates cumulative risk analyses into its RTR risk assessments, including those reflected in this proposal. The Agency (1) conducts facility-wide assessments, which include source category emission points, as well as other emission points within the facilities; (2) combines exposures from multiple sources in the same category that could affect the same individuals; and (3) for some persistent and bioaccumulative pollutants, analyzes the ingestion route of exposure. In addition, the RTR risk

[4] Recommendations of the SAB RTR Panel are provided in their report, which is available at: *https://yosemite.epa.gov/sab/sabproduct.nsf/4AB3966E263D943A8525771F00668381/$File/EPA-SAB-10-007-unsigned.pdf*.

assessments consider aggregate cancer risk from all carcinogens and aggregated noncancer HQs for all noncarcinogens affecting the same target organ or target organ system.

Although we are interested in placing source category and facility-wide HAP risk in the context of total HAP risk from all sources combined in the vicinity of each source, we are concerned about the uncertainties of doing so. Estimates of total HAP risk from emission sources other than those that we have studied in depth during this RTR review would have significantly greater associated uncertainties than the source category or facility-wide estimates. Such aggregate or cumulative assessments would compound those uncertainties, making the assessments too unreliable.

B. How do we perform the technology review?

Our technology review focuses on the identification and evaluation of developments in practices, processes, and control technologies that have occurred since the MACT standards were promulgated. Where we identify such developments, we analyze their technical feasibility, estimated costs, energy implications, and non-air environmental impacts. We also consider the emission reductions associated with applying each development. This analysis informs our decision of whether it is "necessary" to revise the emissions standards. In addition, we consider the appropriateness of applying controls to new sources versus retrofitting existing sources. For this exercise, we consider any of the following to be a "development":

- Any add-on control technology or other equipment that was not identified and considered during development of the original MACT standards;
- Any improvements in add-on control technology or other equipment (that were identified and considered during development of the original MACT standards) that could result in additional emissions reduction;

- Any work practice or operational procedure that was not identified or considered during development of the original MACT standards;
- Any process change or pollution prevention alternative that could be broadly applied to the industry and that was not identified or considered during development of the original MACT standards; and
- Any significant changes in the cost (including cost effectiveness) of applying controls (including controls the EPA considered during the development of the original MACT standards).

In addition to reviewing the practices, processes, and control technologies that were considered at the time we originally developed the NESHAP, we review a variety of data sources in our investigation of potential practices, processes, or controls to consider. See sections II.C and II. D of this preamble for information on the specific data sources that were reviewed as part of the technology review.

C. How do we estimate post-MACT risk posed by the source category?

In this section, we provide a complete description of the types of analyses that we generally perform during the risk assessment process. In some cases, we do not perform a specific analysis because it is not relevant. For example, in the absence of emissions of HAP known to be persistent and bioaccumulative in the environment (PB-HAP), we would not perform a multipathway exposure assessment. Where we do not perform an analysis, we state that we do not and provide the reason. While we present all of our risk assessment methods, we only present risk assessment results for the analyses actually conducted (see section IV.B of this preamble).

The EPA conducts a risk assessment that provides estimates of the MIR for cancer posed by the HAP emissions from each source in the source category, the HI for chronic exposures to HAP with the potential to cause noncancer health effects, and the HQ for acute exposures to HAP with the potential to cause noncancer health effects. The assessment also provides estimates of the distribution of cancer risk within the exposed populations, cancer incidence, and an evaluation of the potential for an adverse environmental effect. The seven sections that follow this paragraph describe how we estimated emissions and conducted the risk assessment. The docket for this rulemaking contains the following document which provides more information on the risk assessment inputs and models: *Residual Risk Assessment for the Engine Test Cells/Stands Source Category in Support of the 2019 Risk and Technology Review Proposed Rule*. The methods used to assess risk (as described in the seven primary steps below) are consistent with those described by the EPA in the document reviewed by a panel of the EPA's SAB in 2009;[5] and described in the SAB review report issued in 2010. They are also consistent with the key recommendations contained in that report.

1. How did we estimate actual emissions and identify the emissions release characteristics?

The list of facilities that are subject to 40 CFR part 63, subpart PPPPP, was developed using the ECHO database, the 2014 NEI and the facility list developed for the promulgation of the 2003 NESHAP. Facilities with engine test cells/stands were identified in the 2014 NEI records by their SCC or NAICS codes. The facility list was then refined using air permit information to determine whether the facility was a major source of HAP and subject to 40 CFR

[5] U.S. EPA. *Risk and Technology Review (RTR) Risk Assessment Methodologies: For Review by the EPA's Science Advisory Board with Case Studies – MACT I Petroleum Refining Sources and Portland Cement Manufacturing*, June 2009. EPA-452/R-09-006. *https://www3.epa.gov/airtoxics/rrisk/rtrpg.html*.

part 63, subpart PPPPP. The EPA emailed the list to several trade organizations as part of an outreach effort to the industry. The EPA Regional offices and state and local air pollution control agencies were asked to review the list and provide corrections as necessary. The DoD and NASA were also consulted and provided information for engine testing facilities located at research sites and military bases. Changes to the facility list were made based on the new information received. The final risk modeling datafile included 59 facilities, each with one or more engine test cell/stand. We are interested in your comments on the development of the facility list used in our analysis. For more details on the facility list development, see the memorandum titled *Emissions Data Used for the Engine Test Cells/Stands Residual Risk Modeling File*, in the docket for this rulemaking (Docket ID No. EPA-HQ-OAR-2018-0753).

To determine which HAP should be modeled, we reviewed NEI emissions data and several other relevant sources to identify the principal HAP emitted.[6,7,8,9] Because the type and quantity of emissions are related to the engine type and fuel combusted, we developed a list of HAP for each engine type and fuel combination. The organic HAP selected for turbines and reciprocating engines are formaldehyde, acetaldehyde, acrolein, 1,3-butadiene, benzene, toluene, xylenes, and naphthalene. In addition to these eight listed organic HAP, for diesel-fired turbines and reciprocating engines the following metal HAP compounds were also listed: arsenic,

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[6] Memorandum from Melanie Taylor (Alpha-Gamma Technologies, Inc.) to Sims Roy (U.S. EPA OAQPS), *Emissions Data for Reciprocating Internal Combustion Engines*, February 4, 2002.

[7] *Compilation of Air Pollutant Emissions Factors, AP-42*, Fifth Edition, Volume 1: Stationary Point and Area Sources, U.S. Environmental Protection Agency, Research Triangle Park, NC, January 1995.

[8] *Web Factor and Information Retrieval System (WebFire)*, U.S. Environmental Protection Agency (*https://cfpub.epa.gov/webfire/*).

[9] U.S. EPA SPECIATE Database (version 4.5), available at *https://www.epa.gov/air-emissions-modeling/speciate-version-45-through-40*.

beryllium, cadmium, chromium, cobalt, lead, manganese, mercury, nickel, and selenium. The eight organic HAP were modeled for all test cells/stands used for testing turbines and/or reciprocating engines. Metal HAP emissions are not expected from jet fuel-, kerosene-, naphtha-, natural gas-, or gasoline-fired engines. Hence, metal HAP emissions were included in the modeling file only for test cells/stands testing turbines and reciprocating engines that burn diesel or distillate fuels. Limited emissions information was available for rocket engines. Hence, we modeled only HAP reported to NEI by each of the seven facilities engaged in rocket testing. The HAP modeled varied by facility due to differences in the type of propellant used. The HAP modeled for rocket engine testing included organic HAP, metal HAP, chlorine, hydrogen chloride, and hydrogen fluoride.

We compiled the actual emissions data using the following four-step approach. Step 1 - where possible, the actual emissions from the 2014 NEI and the 2016 questionnaires were used for the very few facilities that reported HAP emissions to either NEI or in their completed 2016 questionnaires. For facilities where HAP data were not available from these sources, we proceeded to step 2 (for facilities that submitted 2016 questionnaires) and step 3 for all others.

Step 2 - As noted above, facilities that completed the 2016 questionnaire were asked to provide information on the types and quantities of each fuel consumed during engine testing. HAP emissions for these facilities, when not directly reported to NEI or in the questionnaire, were calculated by multiplying the fuel usage reported in the questionnaire by an emission factor. The emission factors used to calculate emissions were obtained from three sources.[10,11,12]

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[10] *Memorandum on Emissions Data for RICE*, Alpha-Gamma Technologies, Inc, to U.S. EPA, 2002.
[11] *Speciation Profiles and Toxic Emission Factors for Nonroad Engines*, Table 13.
[12] AP-42, Section 3.

Where a reliable emissions factor for a HAP was not available, we calculated emissions of VOC and filterable particulate matter with diameter less than 10 microns (PM_{10}) emissions using emission factors, and then used the VOC and PM_{10} emissions values in step 3 to calculate HAP emissions.

Step 3 - For those facilities that either reported VOC emissions to the 2014 NEI or for which we were able to calculate VOC emissions using fuel data from the 2016 questionnaire, we calculated organic HAP emissions by multiplying the VOC emissions by a speciation factor. Similarly, the metal HAP emissions were calculated by multiplying the PM_{10} emissions (either reported in the 2014 NEI or calculated from 2016 questionnaire data) by a metal HAP speciation factor. The speciation factors used were based on speciation profiles from EPA's SPECIATE database.[13] Where no speciation profiles were available in SPECIATE, we developed speciation factors using AP-42 emission factors. For those engine/fuel combinations where no organic HAP speciation profiles or AP-42 emission factors existed, we developed speciation factors using the average HAP-to-VOC ratio based on the available emissions data for sources operating under the same SCC. The same approach was used to develop metal HAP speciation factors using the average of the HAP-to-PM_{10} ratio using the available PM_{10} and HAP data for other sources operating under the same SCC.

Step 4 - Where data needed for steps 1 through 3 were not available, we based the HAP emissions on either:

(1) The HAP emissions from other similar test cells/stands located at the same facility and operating under the same SCC; or

[13] SPECIATE is the EPA's repository of volatile organic gas and particulate matter (PM) speciation profiles of air pollution sources.

(2) The HAP emissions from other similar test cells/stands located at a different facility that operate under the same SCC.

An average annual emissions value was used where emissions data for more than one test cell/stand was available.

Mercury emissions were modeled as three different species: gaseous elemental mercury, gaseous divalent mercury, and particulate divalent mercury. Chromium emissions were modeled as hexavalent chromium and trivalent chromium. We used emissions for total mercury and total chromium determined by using the methods outlined above, in combination with speciation factors from the EPA's SPECIATE, to calculate the emissions of each species. The SPECIATE database contains source-specific, weight-fraction emission speciation profiles. The total mercury emissions were multiplied by the speciation factors of 0.5 for elemental mercury, 0.30 for gaseous divalent mercury, and 0.20 for particulate divalent mercury. The total chromium emissions were multiplied by speciation factors of 0.18 for hexavalent chromium and 0.82 for trivalent chromium.

2. How did we estimate MACT-allowable emissions?

The available emissions data in the RTR emissions dataset include estimates of the mass of HAP emitted during a specified annual time period. These "actual" emission levels are often lower than the emission levels allowed under the requirements of the current MACT standards. The emissions allowed under the MACT standards are referred to as the "MACT-allowable" emissions. We discussed the consideration of both MACT-allowable and actual emissions in the final Coke Oven Batteries RTR (70 FR 19998–19999, April 15, 2005) and in the proposed and final Hazardous Organic NESHAP RTR (71 FR 34428, June 14, 2006, and 71 FR 76609, December 21, 2006, respectively). In those actions, we noted that assessing the risk at the

MACT-allowable level is inherently reasonable since that risk reflects the maximum level facilities could emit and still comply with national emission standards. We also explained that it is reasonable to consider actual emissions, where such data are available, in both steps of the risk analysis, in accordance with the Benzene NESHAP approach. (54 FR 38044, September 14, 1989.)

Generally, allowable emissions for risk modeling are set equal to the current emission limits included in the rule. For this NESHAP, however, there are no emission limits for existing engine test cells/stands or for new test cells/stands used for testing combustion turbines, rockets, and internal combustion engines with rated power less than 25 hp. Although there are limits for new and reconstructed engine test cells/stands used to test internal combustion engines rated at 25 hp and above, only seven engine test cells/stands facilities have been constructed or reconstructed since the NESHAP was proposed in 2002. Thus, 52 of the 59 affected facilities are not subject to emission limits. Because most engine test cells/stands are not subject to emission limits and the emissions from engine test cells/stands can be variable, we have taken a conservative approach to estimating the allowable emissions for this source category. We estimated the allowable emissions at 4.5 times the actual emissions that were determined using the methods as described in section III.C.1 of this preamble. The 4.5 multiplier was determined based on data provided by facilities responding to our 2016 questionnaire that showed most facilities operate their engine test cells/stands at slightly less than 50 percent of their maximum potential. By setting the allowable multiplier at half the acute multiplier of 9.5, the estimated allowable emissions included in the modeling datafile are conservative estimates that take into consideration the potential variability in emissions from this source category.

3. How do we conduct dispersion modeling, determine inhalation exposures, and estimate individual and population inhalation risk?

Both long-term and short-term inhalation exposure concentrations and health risk from the source category addressed in this proposal were estimated using the Human Exposure Model (HEM-3).[14] The HEM-3 performs three primary risk assessment activities: (1) conducting dispersion modeling to estimate the concentrations of HAP in ambient air; (2) estimating long-term and short-term inhalation exposures to individuals residing within 50 kilometers (km) of the modeled sources; and (3) estimating individual and population-level inhalation risk using the exposure estimates and quantitative dose-response information.

a. Dispersion Modeling

The air dispersion model AERMOD, used by the HEM-3 model, is one of the EPA's preferred models for assessing air pollutant concentrations from industrial facilities.[15] To perform the dispersion modeling and to develop the preliminary risk estimates, HEM-3 draws on three data libraries. The first is a library of meteorological data, which is used for dispersion calculations. This library includes 1 year (2016) of hourly surface and upper air observations from 824 meteorological stations, selected to provide coverage of the United States and Puerto Rico. A second library of United States Census Bureau census block[16] internal point locations and populations provides the basis of human exposure calculations (U.S. Census, 2010). In addition, for each census block, the census library includes the elevation and controlling hill

[14] For more information about HEM-3, go to *https://www.epa.gov/fera/risk-assessment-and-modeling-human-exposure-model-hem*.

[15] U.S. EPA. Revision to the *Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions* (70 FR 68218, November 9, 2005).

[16] A census block is the smallest geographic area for which census statistics are tabulated.

height, which are also used in dispersion calculations. A third library of pollutant-specific dose-response values is used to estimate health risk. These are discussed below.

b. Risk from Chronic Exposure to HAP

In developing the risk assessment for chronic exposures, we use the estimated annual average ambient air concentrations of each HAP emitted by each source in the source category. The HAP air concentrations at each nearby census block centroid located within 50 km of the facility are a surrogate for the chronic inhalation exposure concentration for all the people who reside in that census block. A distance of 50 km is consistent with both the analysis supporting the 1989 Benzene NESHAP (54 FR 38044, September 14, 1989) and the limitations of Gaussian dispersion models, including AERMOD.

For each facility, we calculate the MIR as the cancer risk associated with a continuous lifetime (24 hours per day, 7 days per week, 52 weeks per year, 70 years) exposure to the maximum concentration at the centroid of each inhabited census block. We calculate individual cancer risk by multiplying the estimated lifetime exposure to the ambient concentration of each HAP (in micrograms per cubic meter ($\mu g/m^3$)) by its unit risk estimate (URE). The URE is an upper-bound estimate of an individual's incremental risk of contracting cancer over a lifetime of exposure to a concentration of 1 microgram of the pollutant per cubic meter of air. For residual risk assessments, we generally use UREs from the EPA's Integrated Risk Information System (IRIS). For carcinogenic pollutants without IRIS values, we look to other reputable sources of cancer dose-response values, often using California EPA (CalEPA) UREs, where available. In cases where new, scientifically credible dose-response values have been developed in a manner consistent with EPA guidelines and have undergone a peer review process similar to that used by the EPA, we may use such dose-response values in place of, or in addition to, other values, if

appropriate. The pollutant-specific dose-response values used to estimate health risk are available at *https://www.epa.gov/fera/dose-response-assessment-assessing-health-risks-associated-exposure-hazardous-air-pollutants*.

To estimate individual lifetime cancer risks associated with exposure to HAP emissions from each facility in the source category, we sum the risks for each of the carcinogenic HAP[17] emitted by the modeled facility. We estimate cancer risk at every census block within 50 km of every facility in the source category. The MIR is the highest individual lifetime cancer risk estimated for any of those census blocks. In addition to calculating the MIR, we estimate the distribution of individual cancer risks for the source category by summing the number of individuals within 50 km of the sources whose estimated risk falls within a specified risk range. We also estimate annual cancer incidence by multiplying the estimated lifetime cancer risk at each census block by the number of people residing in that block, summing results for all of the census blocks, and then dividing this result by a 70-year lifetime.

To assess the risk of noncancer health effects from chronic exposure to HAP, we calculate either an HQ or a target organ-specific hazard index (TOSHI). We calculate an HQ

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[17] The EPA's 2005 *Guidelines for Carcinogen Risk Assessment* classifies carcinogens as: "carcinogenic to humans," "likely to be carcinogenic to humans," and "suggestive evidence of carcinogenic potential." These classifications also coincide with the terms "known carcinogen, probable carcinogen, and possible carcinogen," respectively, which are the terms advocated in the EPA's *Guidelines for Carcinogen Risk Assessment*, published in 1986 (51 FR 33992, September 24, 1986). In August 2000, the document, *Supplemental Guidance for Conducting Health Risk Assessment of Chemical Mixtures* (EPA/630/R-00/002), was published as a supplement to the 1986 document. Copies of both documents can be obtained from *https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=20533&CFID=70315376&CFTOKEN=71597944*. Summing the risk of these individual compounds to obtain the cumulative cancer risk is an approach that was recommended by the EPA's SAB in their 2002 peer review of the EPA's National Air Toxics Assessment (NATA) titled *NATA - Evaluating the National-scale Air Toxics Assessment 1996 Data -- an SAB Advisory*, available at *https://yosemite.epa.gov/sab/sabproduct.nsf/214C6E915BB04E14852570CA007A682C/$File/ecadv02001.pdf*.

when a single noncancer HAP is emitted. Where more than one noncancer HAP is emitted, we sum the HQ for each of the HAP that affects a common target organ or target organ system to obtain a TOSHI. The HQ is the estimated exposure divided by the chronic noncancer dose-response value, which is a value selected from one of several sources. The preferred chronic noncancer dose-response value is the EPA RfC, defined as "an estimate (with uncertainty spanning perhaps an order of magnitude) of a continuous inhalation exposure to the human population (including sensitive subgroups) that is likely to be without an appreciable risk of deleterious effects during a lifetime" (*https://iaspub.epa.gov/sor_internet/registry/termreg/searchandretrieve/glossariesandkeywordlists/search.do?details=&vocabName=IRIS%20Glossary*). In cases where an RfC from the EPA's IRIS is not available or where the EPA determines that using a value other than the RfC is appropriate, the chronic noncancer dose-response value can be a value from the following prioritized sources, which define their dose-response values similarly to the EPA: (1) The Agency for Toxic Substances and Disease Registry (ATSDR) Minimum Risk Level (*https://www.atsdr.cdc.gov/mrls/index.asp*); (2) the CalEPA Chronic Reference Exposure Level (REL) (*https://oehha.ca.gov/air/crnr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0*); or (3), as noted above, a scientifically credible dose-response value that has been developed in a manner consistent with the EPA guidelines and has undergone a peer review process similar to that used by the EPA. The pollutant-specific dose-response values used to estimate health risks are available at *https://www.epa.gov/fera/dose-response-assessment-assessing-health-risks-associated-exposure-hazardous-air-pollutants*.

c. Risk from Acute Exposure to HAP that May Cause Health Effects Other Than Cancer

For each HAP for which appropriate acute inhalation dose-response values are available, the EPA also assesses the potential health risks due to acute exposure. For these assessments, the EPA makes conservative assumptions about emission rates, meteorology, and exposure location. We use the peak hourly emission rate,[18] worst-case dispersion conditions, and, in accordance with our mandate under section 112 of the CAA, the point of highest off-site exposure to assess the potential risk to the maximally exposed individual.

To characterize the potential health risks associated with estimated acute inhalation exposures to a HAP, we generally use multiple acute dose-response values, including acute RELs, acute exposure guideline levels (AEGLs), and emergency response planning guidelines (ERPG) for 1-hour exposure durations), if available, to calculate acute HQs. The acute HQ is calculated by dividing the estimated acute exposure by the acute dose-response value. For each HAP for which acute dose-response values are available, the EPA calculates acute HQs.

An acute REL is defined as "the concentration level at or below which no adverse health effects are anticipated for a specified exposure duration."[19] Acute RELs are based on the most sensitive, relevant, adverse health effect reported in the peer-reviewed medical and toxicological literature. They are designed to protect the most sensitive individuals in the population through

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[18] In the absence of hourly emission data, we develop estimates of maximum hourly emission rates by multiplying the average actual annual emissions rates by a factor (either a category-specific factor or a default factor of 10) to account for variability. This is documented in *Residual Risk Assessment for Engine Test Cells/Stands Source Category in Support of the 2019 Risk and Technology Review Proposed Rule* and in Appendix 5 of the report: *Analysis of Data on Short-term Emission Rates Relative to Long-term Emission Rates*. Both are available in the docket for this rulemaking.

[19] CalEPA issues acute RELs as part of its Air Toxics Hot Spots Program, and the 1-hour and 8-hour values are documented in *Air Toxics Hot Spots Program Risk Assessment Guidelines, Part I, The Determination of Acute Reference Exposure Levels for Airborne Toxicants*, which is available at *https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary*.

the inclusion of margins of safety. Because margins of safety are incorporated to address data gaps and uncertainties, exceeding the REL does not automatically indicate an adverse health impact. AEGLs represent threshold exposure limits for the general public and are applicable to emergency exposures ranging from 10 minutes to 8 hours.[20] They are guideline levels for "once-in-a-lifetime, short-term exposures to airborne concentrations of acutely toxic, high-priority chemicals." *Id.* at 21. The AEGL–1 is specifically defined as "the airborne concentration (expressed as ppm (parts per million) or mg/m^3 (milligrams per cubic meter)) of a substance above which it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic nonsensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure." The document also notes that "Airborne concentrations below AEGL–1 represent exposure levels that can produce mild and progressively increasing but transient and nondisabling odor, taste, and sensory irritation or certain asymptomatic, nonsensory effects." *Id.* AEGL–2 are defined as "the airborne concentration (expressed as parts per million or milligrams per cubic meter) of a substance above which it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects or an impaired ability to escape." *Id.*

[20] National Academy of Sciences, 2001. *Standing Operating Procedures for Developing Acute Exposure Levels for Hazardous Chemicals*, page 2. Available at *https://www.epa.gov/sites/production/files/2015-09/documents/sop_final_standing_operating_procedures_2001*.pdf. Note that the National Advisory Committee for Acute Exposure Guideline Levels for Hazardous Substances ended in October 2011, but the AEGL program continues to operate at the EPA and works with the National Academies to publish final AEGLs (*https://www.epa.gov/aegl*).

ERPGs are "developed for emergency planning and are intended as health-based guideline concentrations for single exposures to chemicals."[21] *Id.* at 1. The ERPG–1 is defined as "the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to 1 hour without experiencing other than mild transient adverse health effects or without perceiving a clearly defined, objectionable odor." *Id.* at 2. Similarly, the ERPG–2 is defined as "the maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour without experiencing or developing irreversible or other serious health effects or symptoms which could impair an individual's ability to take protective action." *Id.* at 1.

An acute REL for 1-hour exposure durations is typically lower than its corresponding AEGL–1 and ERPG–1. Even though their definitions are slightly different, AEGL–1s are often the same as the corresponding ERPG–1s, and AEGL–2s are often equal to ERPG–2s. The maximum HQs from our acute inhalation screening risk assessment typically result when we use the acute REL for a HAP. In cases where the maximum acute HQ exceeds 1, we also report the HQ based on the next highest acute dose-response value (usually the AEGL–1 and/or the ERPG–1).

For the Engine Test Cells/Stands source category, annual actual emission values were multiplied by a conservative factor of 9.5 instead of the default emissions multiplier of 10. This source category specific factor was developed using activity data collected from the 2016 questionnaire. A further discussion of why this factor was chosen can be found in the

[21] *ERPGS Procedures and Responsibilities*. March 2014. American Industrial Hygiene Association. Available at: *https://www.aiha.org/get-involved/AIHAGuidelineFoundation/EmergencyResponsePlanningGuidelines/Documents/ERPG%20Committee%20Standard%20Operating%20Procedures%20%20-%20March%202014%20Revision%20%28Updated%2010-2-2014%29.pdf*.

memorandum, *Emissions Data and Acute Risk Factor Used in Residual Risk Modeling: Engine Test Cell/Stands*, available in the docket for this rulemaking.

In our acute inhalation screening risk assessment, acute impacts are deemed negligible for HAP for which acute HQs are less than or equal to 1 (even under the conservative assumptions of the screening assessment), and no further analysis is performed for these HAP. In cases where an acute HQ from the screening step is greater than 1, we consider additional site-specific data to develop a more refined estimate of the potential for acute exposures of concern. For this source category, the data refinements employed consisted of looking at the impact of acute risks at only off source category property locations. These refinements are discussed more fully in the *Residual Risk Assessment for the Engine Test Cells/Stands Source Category in Support of the 2019 Risk and Technology Review Proposed Rule*, which is available in the docket for this source category.

4. How do we conduct the multipathway exposure and risk screening assessment?

The EPA conducts a tiered screening assessment examining the potential for significant human health risks due to exposures via routes other than inhalation (*i.e.*, ingestion). We first determine whether any sources in the source category emit any HAP known to be PB-HAP, as identified in the EPA's Air Toxics Risk Assessment Library (see Volume 1, Appendix D, at *https://www.epa.gov/fera/risk-assessment-and-modeling-air-toxics-risk-assessment-reference-library*.

For the Engine Test Cells/Stands source category, we identified PB-HAP emissions of lead compounds, cadmium compounds, arsenic compounds, mercury compounds, and polycyclic organic matter (POM) (of which polycyclic aromatic hydrocarbons is a subset), so we proceeded to the next step of the evaluation. In this step, we determine whether the facility-specific

emission rates of the emitted PB-HAP are large enough to create the potential for significant human health risk through ingestion exposure under reasonable worst-case conditions. To facilitate this step, we use previously developed screening threshold emission rates for several PB-HAP that are based on a hypothetical upper-end screening exposure scenario developed for use in conjunction with the EPA's Total Risk Integrated Methodology. Fate, Transport, and Ecological Exposure (TRIM.FaTE) model. The PB-HAP with screening threshold emission rates are arsenic compounds, cadmium compounds, chlorinated dibenzodioxins and furans, mercury compounds, and POM. Based on the EPA estimates of toxicity and bioaccumulation potential, the pollutants above represent a conservative list for inclusion in multipathway risk assessments for RTR rules. (See Volume 1, Appendix D at *https://www.epa.gov/sites/production/files/201308/documents/volume_1_reflibrary.pdf*). In this assessment, we compare the facility-specific emission rates of these PB-HAP to the screening threshold emission rates for each PB-HAP to assess the potential for significant human health risks via the ingestion pathway. We call this application of the TRIM.FaTE model the Tier 1 screening assessment. The ratio of a facility's actual emission rate to the Tier 1 screening threshold emission rate is a "screening value."

We derive the Tier 1 screening threshold emission rates for these PB-HAP (other than lead compounds) to correspond to a maximum excess lifetime cancer risk of 1-in-1 million (*i.e.*, for arsenic compounds, polychlorinated dibenzodioxins and furans and POM) or, for HAP that cause noncancer health effects (*i.e.*, cadmium compounds and mercury compounds), a maximum HQ of 1. If the emission rate of any one PB-HAP or combination of carcinogenic PB-HAP in the Tier 1 screening assessment exceeds the Tier 1 screening threshold emission rate for any facility

(*i.e.*, the screening value is greater than 1), we conduct a second screening assessment, which we call the Tier 2 screening assessment.

In the Tier 2 screening assessment, the location of each facility that exceeds a Tier 1 screening threshold emission rate is used to refine the assumptions associated with the Tier 1 fisher and farmer exposure scenarios at that facility. A key assumption in the Tier 1 screening assessment is that a lake and/or farm is located near the facility. As part of the Tier 2 screening assessment, we use a U.S. Geological Survey (USGS) database to identify actual waterbodies within 50 km of each facility. We also examine the differences between local meteorology near the facility and the meteorology used in the Tier 1 screening assessment. We then adjust the previously-developed Tier 1 screening threshold emission rates for each PB-HAP for each facility based on an understanding of how exposure concentrations estimated for the screening scenario change with the use of local meteorology and USGS waterbody data. If the PB-HAP emission rates for a facility exceed the Tier 2 screening threshold emission rates and data are available, we may conduct a Tier 3 screening assessment. If PB-HAP emission rates do not exceed a Tier 2 screening value of 1, we consider those PB-HAP emissions to pose risks below a level of concern.

There are several analyses that can be included in a Tier 3 screening assessment, depending upon the extent of refinement warranted, including validating that the lakes are fishable, considering plume-rise to estimate emissions lost above the mixing layer, and considering hourly effects of meteorology and plume rise on chemical fate and transport. If the Tier 3 screening assessment indicates that risks above levels of concern cannot be ruled out, the EPA may further refine the screening assessment through a site-specific assessment.

In evaluating the potential multipathway risk from emissions of lead compounds, rather than developing a screening threshold emission rate, we compare maximum estimated chronic inhalation exposure concentrations to the level of the current National Ambient Air Quality Standard (NAAQS) for lead.[22] Values below the level of the primary (health-based) lead NAAQS are considered to have a low potential for multipathway risk.

For further information on the multipathway assessment approach, see the *Residual Risk Assessment for the Engine Test Cells/Stands Source Category in Support of the Risk and Technology Review 2019 Proposed Rule*, which is available in the docket for this action.

5. How do we conduct the environmental risk screening assessment?

a. Adverse Environmental Effect, Environmental HAP, and Ecological Benchmarks

The EPA conducts a screening assessment to examine the potential for an adverse environmental effect as required under section 112(f)(2)(A) of the CAA. Section 112(a)(7) of the CAA defines "adverse environmental effect" as "any significant and widespread adverse effect, which may reasonably be anticipated, to wildlife, aquatic life, or other natural resources, including adverse impacts on populations of endangered or threatened species or significant degradation of environmental quality over broad areas."

[22] In doing so, the EPA notes that the legal standard for a primary NAAQS – that a standard is requisite to protect public health and provide an adequate margin of safety (CAA section 109(b)) – differs from the CAA section 112(f) standard (requiring, among other things, that the standard provide an "ample margin of safety to protect public health"). However, the primary lead NAAQS is a reasonable measure of determining risk acceptability (*i.e.*, the first step of the Benzene NESHAP analysis) since it is designed to protect the most susceptible group in the human population – children, including children living near major lead emitting sources. 73 FR 67002/3; 73 FR 67000/3; 73 FR 67005/1. In addition, applying the level of the primary lead NAAQS at the risk acceptability step is conservative, since that primary lead NAAQS reflects an adequate margin of safety.

The EPA focuses on eight HAP, which are referred to as "environmental HAP," in its screening assessment: six PB-HAP and two acid gases. The PB-HAP included in the screening assessment are arsenic compounds, cadmium compounds, dioxins/furans, POM, mercury (both inorganic mercury and methyl mercury), and lead compounds. The acid gases included in the screening assessment are hydrochloric acid (HCl) and hydrogen fluoride (HF).

HAP that persist and bioaccumulate are of particular environmental concern because they accumulate in the soil, sediment, and water. The acid gases, HCl and HF, are included due to their well-documented potential to cause direct damage to terrestrial plants. In the environmental risk screening assessment, we evaluate the following four exposure media: terrestrial soils, surface water bodies (includes water-column and benthic sediments), fish consumed by wildlife, and air. Within these four-exposure media, we evaluate nine ecological assessment endpoints, which are defined by the ecological entity and its attributes. For PB-HAP (other than lead), both community-level and population-level endpoints are included. For acid gases, the ecological assessment evaluated is terrestrial plant communities.

An ecological benchmark represents a concentration of HAP that has been linked to a particular environmental effect level. For each environmental HAP, we identified the available ecological benchmarks for each assessment endpoint. We identified, where possible, ecological benchmarks at the following effect levels: probable effect levels, lowest-observed-adverse-effect level, and no-observed-adverse-effect level. In cases where multiple effect levels were available for a particular PB-HAP and assessment endpoint, we use all of the available effect levels to help us to determine whether ecological risks exist and, if so, whether the risks could be considered significant and widespread.

For further information on how the environmental risk screening assessment was conducted, including a discussion of the risk metrics used, how the environmental HAP were identified, and how the ecological benchmarks were selected, see Appendix 9 of the *Residual Risk Assessment for the Engine Test Cells/Stands Source Category in Support of the Risk and Technology Review 2019 Proposed Rule*, which is available in the docket for this action.

b. Environmental Risk Screening Methodology

For the environmental risk screening assessment, the EPA first determined whether any facilities in the Engine Test Cells/Stands source category emitted any of the environmental HAP (cadmium, dioxins, POM, mercury [both inorganic mercury and methylmercury], arsenic, and lead). For the Engine Test Cells/Stands source category, we identified emissions of arsenic, cadmium, HCl, HF, lead, mercury, and POMs. Because one or more of the environmental HAP evaluated are emitted by at least one facility in the source category, we proceeded to the second step of the evaluation.

c. PB-HAP Methodology

The environmental screening assessment includes six PB-HAP, arsenic compounds, cadmium compounds, dioxins/furans, POM, mercury (both inorganic mercury and methyl mercury), and lead compounds. With the exception of lead, the environmental risk screening assessment for PB-HAP consists of three tiers. The first tier of the environmental risk screening assessment uses the same health-protective conceptual model that is used for the Tier 1 human health screening assessment. TRIM.FaTE model simulations were used to back-calculate Tier 1 screening threshold emission rates. The screening threshold emission rates represent the emission rate in tons of pollutant per year that results in media concentrations at the facility that equal the relevant ecological benchmark. To assess emissions from each facility in the category, the

reported emission rate for each PB-HAP was compared to the Tier 1 screening threshold emission rate for that PB-HAP for each assessment endpoint and effect level. If emissions from a facility do not exceed the Tier 1 screening threshold emission rate, the facility "passes" the screening assessment, and, therefore, is not evaluated further under the screening approach. If emissions from a facility exceed the Tier 1 screening threshold emission rate, we evaluate the facility further in Tier 2.

In Tier 2 of the environmental screening assessment, the screening threshold emission rates are adjusted to account for local meteorology and the actual location of lakes in the vicinity of facilities that did not pass the Tier 1 screening assessment. For soils, we evaluate the average soil concentration for all soil parcels within a 7.5-km radius for each facility and PB-HAP. For the water, sediment, and fish tissue concentrations, the highest value for each facility for each pollutant is used. If emission concentrations from a facility do not exceed the Tier 2 screening threshold emission rate, the facility "passes" the screening assessment and typically is not evaluated further. If emissions from a facility exceed the Tier 2 screening threshold emission rate, we evaluate the facility further in Tier 3.

As in the multipathway human health risk assessment, in Tier 3 of the environmental screening assessment, we examine the suitability of the lakes around the facilities to support life and remove those that are not suitable (*e.g.*, lakes that have been filled in or are industrial ponds), adjust emissions for plume-rise, and conduct hour-by-hour time-series assessments. If these Tier 3 adjustments to the screening threshold emission rates still indicate the potential for an adverse environmental effect (*i.e.*, facility emission rate exceeds the screening threshold emission rate), we may elect to conduct a more refined assessment using more site-specific information. If, after

additional refinement, the facility emission rate still exceeds the screening threshold emission rate, the facility may have the potential to cause an adverse environmental effect.

To evaluate the potential for an adverse environmental effect from lead, we compared the average modeled air concentrations (from HEM-3) of lead around each facility in the source category to the level of the secondary NAAQS for lead. The secondary lead NAAQS is a reasonable means of evaluating environmental risk because it is set to provide substantial protection against adverse welfare effects which can include "effects on soils, water, crops, vegetation, man-made materials, animals, wildlife, weather, visibility and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being."

d. Acid Gas Environmental Risk Methodology

The environmental screening assessment for acid gases evaluates the potential phytotoxicity and reduced productivity of plants due to chronic exposure to HF and HCl. The environmental risk screening methodology for acid gases is a single-tier screening assessment that compares modeled ambient air concentrations (from AERMOD) to the ecological benchmarks for each acid gas. To identify a potential adverse environmental effect (as defined in section 112(a)(7) of the CAA) from emissions of HF and HCl, we evaluate the following metrics: the size of the modeled area around each facility that exceeds the ecological benchmark for each acid gas, in acres and km^2; the percentage of the modeled area around each facility that exceeds the ecological benchmark for each acid gas; and the area-weighted average screening value around each facility (calculated by dividing the area-weighted average concentration over the 50-km modeling domain by the ecological benchmark for each acid gas). For further information on the environmental screening assessment approach, see Appendix 9 of the

Residual Risk Assessment for the Engine Test Cells/Stands Source Category in Support of the Risk and Technology Review 2019 Proposed Rule, which is available in the docket for this action.

6. How do we conduct facility-wide assessments?

To put the source category risks in context, we typically examine the risks from the entire "facility," where the facility includes all HAP-emitting operations within a contiguous area and under common control. In other words, we examine the HAP emissions not only from the source category emission points of interest, but also emissions of HAP from all other emission sources at the facility for which we have data. For this source category, we conducted the facility-wide assessment using a dataset compiled from the 2014 NEI. The source category records of that NEI dataset were removed, evaluated, and updated as described in section II.C of this preamble (What data collection activities were conducted to support this action?). Once a quality assured source category dataset was available, it was placed back with the remaining records from the NEI for that facility. The facility-wide file was then used to analyze risks due to the inhalation of HAP that are emitted "facility-wide" for the populations residing within 50 km of each facility, consistent with the methods used for the source category analysis described above. For these facility-wide risk analyses, the modeled source category risks were compared to the facility-wide risks to determine the portion of the facility-wide risks that could be attributed to the source category addressed in this proposal. We also specifically examined the facility that was associated with the highest estimate of risk and determined the percentage of that risk attributable to the source category of interest. The *Residual Risk Assessment for the Engine Test Cells/Stands Source Category in Support of the Risk and Technology Review 2019 Proposed Rule*, available through the docket for this action, provides the methodology and results of the

facility-wide analyses, including all facility-wide risks and the percentage of source category contribution to facility-wide risks.

7. How do we consider uncertainties in risk assessment?

Uncertainty and the potential for bias are inherent in all risk assessments, including those performed for this proposal. Although uncertainty exists, we believe that our approach, which used conservative tools and assumptions, ensures that our decisions are health and environmentally protective. A brief discussion of the uncertainties in the RTR emissions dataset, dispersion modeling, inhalation exposure estimates, and dose-response relationships follows below. Also included are those uncertainties specific to our acute screening assessments, multipathway screening assessments, and our environmental risk screening assessments. A more thorough discussion of these uncertainties is included in the *Residual Risk Assessment for the Engine Test Cells/Stands Source Category in Support of the Risk and Technology Review 2019 Proposed Rule*, which is available in the docket for this action. If a multipathway site-specific assessment was performed for this source category, a full discussion of the uncertainties associated with that assessment can be found in Appendix 11 of that document, *Site-Specific Human Health Multipathway Residual Risk Assessment Report*.

a. Uncertainties in the RTR Emissions Dataset

Although the development of the RTR emissions dataset involved quality assurance/quality control processes, the accuracy of emissions values will vary depending on the source of the data, the degree to which data are incomplete or missing, the degree to which assumptions made to complete the datasets are accurate, errors in emission estimates, and other factors. The emission estimates considered in this analysis generally are annual totals for certain years, and they do not reflect short-term fluctuations during the course of a year or variations

from year to year. The estimates of peak hourly emission rates for the acute effects screening assessment were based on an emission adjustment factor applied to the average annual hourly emission rates, which are intended to account for emission fluctuations due to normal facility operations.

b. Uncertainties in Dispersion Modeling

We recognize there is uncertainty in ambient concentration estimates associated with any model, including the EPA's recommended regulatory dispersion model, AERMOD. In using a model to estimate ambient pollutant concentrations, the user chooses certain options to apply. For RTR assessments, we select some model options that have the potential to overestimate ambient air concentrations (*e.g.*, not including plume depletion or pollutant transformation). We select other model options that have the potential to underestimate ambient impacts (*e.g.*, not including building downwash). Other options that we select have the potential to either under- or overestimate ambient levels (*e.g.*, meteorology and receptor locations). On balance, considering the directional nature of the uncertainties commonly present in ambient concentrations estimated by dispersion models, the approach we apply in the RTR assessments should yield unbiased estimates of ambient HAP concentrations. We also note that the selection of meteorology dataset location could have an impact on the risk estimates. As we continue to update and expand our library of meteorological station data used in our risk assessments, we expect to reduce this variability.

c. Uncertainties in Inhalation Exposure Assessment

Although every effort is made to identify all of the relevant facilities and emission points, as well as to develop accurate estimates of the annual emission rates for all relevant HAP, the uncertainties in our emission inventory likely dominate the uncertainties in the exposure

assessment. Some uncertainties in our exposure assessment include human mobility, using the centroid of each census block, assuming lifetime exposure, and assuming only outdoor exposures. For most of these factors, there is neither an under nor overestimate when looking at the maximum individual risk or the incidence, but the shape of the distribution of risks may be affected. With respect to outdoor exposures, actual exposures may not be as high if people spend time indoors, especially for very reactive pollutants or larger particles. For all factors, we reduce uncertainty when possible. For example, with respect to census-block centroids, we analyze large blocks using aerial imagery and adjust locations of the block centroids to better represent the population in the blocks. We also add additional receptor locations where the population of a block is not well represented by a single location.

d. Uncertainties in Dose-Response Relationships

There are uncertainties inherent in the development of the dose-response values used in our risk assessments for cancer effects from chronic exposures and noncancer effects from both chronic and acute exposures. Some uncertainties are generally expressed quantitatively, and others are generally expressed in qualitative terms. We note, as a preface to this discussion, a point on dose-response uncertainty that is stated in the EPA's *2005 Guidelines for Carcinogen Risk Assessment*; namely, that "the primary goal of EPA actions is protection of human health; accordingly, as an Agency policy, risk assessment procedures, including default options that are used in the absence of scientific data to the contrary, should be health protective" (the EPA's *2005 Guidelines for Carcinogen Risk Assessment*, page 1-7). This is the approach followed here as summarized in the next paragraphs.

Cancer UREs used in our risk assessments are those that have been developed to generally provide an upper bound estimate of risk.[23] That is, they represent a "plausible upper limit to the true value of a quantity" (although this is usually not a true statistical confidence limit). In some circumstances, the true risk could be as low as zero; however, in other circumstances the risk could be greater.[24] Chronic noncancer RfC and reference dose (RfD) values represent chronic exposure levels that are intended to be health-protective levels. To derive dose-response values that are intended to be "without appreciable risk," the methodology relies upon an uncertainty factor (UF) approach,[25] which considers uncertainty, variability, and gaps in the available data. The UFs are applied to derive dose-response values that are intended to protect against appreciable risk of deleterious effects.

Many of the UFs used to account for variability and uncertainty in the development of acute dose-response values are quite similar to those developed for chronic durations. Additional adjustments are often applied to account for uncertainty in extrapolation from observations at one exposure duration (*e.g.*, 4 hours) to derive an acute dose-response value at another exposure duration (*e.g.*, 1 hour). Not all acute dose-response values are developed for the same purpose, and care must be taken when interpreting the results of an acute assessment of human health effects relative to the dose-response value or values being exceeded. Where relevant to the

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[23] IRIS glossary (*https://ofmpub.epa.gov/sor_internet/registry/termreg/searchandretrieve/glossariesandkeywordlists/search.do?details=&glossaryName=IRIS%20Glossary*).

[24] An exception to this is the URE for benzene, which is considered to cover a range of values, each end of which is considered to be equally plausible, and which is based on maximum likelihood estimates.

[25] See *A Review of the Reference Dose and Reference Concentration Processes*, U.S. EPA, December 2002, and *Methods for Derivation of Inhalation Reference Concentrations and Application of Inhalation Dosimetry*, U.S. EPA, 1994.

estimated exposures, the lack of acute dose-response values at different levels of severity should be factored into the risk characterization as potential uncertainties.

Uncertainty also exists in the selection of ecological benchmarks for the environmental risk screening assessment. We established a hierarchy of preferred benchmark sources to allow selection of benchmarks for each environmental HAP at each ecological assessment endpoint. We searched for benchmarks for three effect levels (*i.e.*, no-effects level, threshold-effect level, and probable effect level), but not all combinations of ecological assessment/environmental HAP had benchmarks for all three effect levels. Where multiple effect levels were available for a particular HAP and assessment endpoint, we used all of the available effect levels to help us determine whether risk exists and whether the risk could be considered significant and widespread.

Although we make every effort to identify appropriate human health effect dose-response values for all pollutants emitted by the sources in this risk assessment, some HAP emitted by this source category are lacking dose-response assessments. Accordingly, these pollutants cannot be included in the quantitative risk assessment, which could result in quantitative estimates understating HAP risk. To help to alleviate this potential underestimate, where we conclude similarity with a HAP for which a dose-response value is available, we use that value as a surrogate for the assessment of the HAP for which no value is available. To the extent use of surrogates indicates appreciable risk, we may identify a need to increase priority for an IRIS assessment for that substance. We additionally note that, generally speaking, HAP of greatest concern due to environmental exposures and hazard are those for which dose-response assessments have been performed, reducing the likelihood of understating risk. Further, HAP not included in the quantitative assessment are assessed qualitatively and considered in the risk

characterization that informs the risk management decisions, including consideration of HAP reductions achieved by various control options.

For a group of compounds that are unspeciated (*e.g.*, glycol ethers), we conservatively use the most protective dose-response value of an individual compound in that group to estimate risk. Similarly, for an individual compound in a group (*e.g.*, ethylene glycol diethyl ether) that does not have a specified dose-response value, we also apply the most protective dose-response value from the other compounds in the group to estimate risk.

e. Uncertainties in Acute Inhalation Screening Assessments

In addition to the uncertainties highlighted above, there are several factors specific to the acute exposure assessment that the EPA conducts as part of the risk review under section 112 of the CAA. The accuracy of an acute inhalation exposure assessment depends on the simultaneous occurrence of independent factors that may vary greatly, such as hourly emissions rates, meteorology, and the presence of humans at the location of the maximum concentration. In the acute screening assessment that we conduct under the RTR program, we assume that peak emissions from the source category and worst-case meteorological conditions co-occur, thus, resulting in maximum ambient concentrations. These two events are unlikely to occur at the same time, making these assumptions conservative. We then include the additional assumption that a person is located at this point during this same time period. For this source category, these assumptions would tend to be worst-case actual exposures, as it is unlikely that a person would be located at the point of maximum exposure during the time when peak emissions and worst-case meteorological conditions occur simultaneously.

f. Uncertainties in the Multipathway and Environmental Risk Screening Assessments

For each source category, we generally rely on site-specific levels of PB-HAP or environmental HAP emissions to determine whether a refined assessment of the impacts from multipathway exposures is necessary or whether it is necessary to perform an environmental screening assessment. This determination is based on the results of a three-tiered screening assessment that relies on the outputs from models – TRIM.FaTE and AERMOD – that estimate environmental pollutant concentrations and human exposures for five PB-HAP (dioxins, POM, mercury, cadmium, and arsenic) and two acid gases (HF and HCl). For lead, we use AERMOD to determine ambient air concentrations, which are then compared to the secondary NAAQS standard for lead. Two important types of uncertainty associated with the use of these models in RTR risk assessments and inherent to any assessment that relies on environmental modeling are model uncertainty and input uncertainty.[26]

Model uncertainty concerns whether the model adequately represents the actual processes (*e.g.*, movement and accumulation) that might occur in the environment. For example, does the model adequately describe the movement of a pollutant through the soil? This type of uncertainty is difficult to quantify. However, based on feedback received from previous EPA SAB reviews and other reviews, we are confident that the models used in the screening assessments are appropriate and state-of-the-art for the multipathway and environmental screening risk assessments conducted in support of RTR.

Input uncertainty is concerned with how accurately the models have been configured and parameterized for the assessment at hand. For Tier 1 of the multipathway and environmental

[26] In the context of this discussion, the term "uncertainty" as it pertains to exposure and risk encompasses both ***variability*** in the range of expected inputs and screening results due to existing spatial, temporal, and other factors, as well as ***uncertainty*** in being able to accurately estimate the true result.

screening assessments, we configured the models to avoid underestimating exposure and risk. This was accomplished by selecting upper-end values from nationally representative datasets for the more influential parameters in the environmental model, including selection and spatial configuration of the area of interest, lake location and size, meteorology, surface water, soil characteristics, and structure of the aquatic food web. We also assume an ingestion exposure scenario and values for human exposure factors that represent reasonable maximum exposures.

In Tier 2 of the multipathway and environmental screening assessments, we refine the model inputs to account for meteorological patterns in the vicinity of the facility versus using upper-end national values, and we identify the actual location of lakes near the facility rather than the default lake location that we apply in Tier 1. By refining the screening approach in Tier 2 to account for local geographical and meteorological data, we decrease the likelihood that concentrations in environmental media are overestimated, thereby increasing the usefulness of the screening assessment. In Tier 3 of the screening assessments, we refine the model inputs again to account for hour-by-hour plume rise and the height of the mixing layer. We can also use those hour-by-hour meteorological data in a TRIM.FaTE run using the screening configuration corresponding to the lake location. These refinements produce a more accurate estimate of chemical concentrations in the media of interest, thereby reducing the uncertainty with those estimates. The assumptions and the associated uncertainties regarding the selected ingestion exposure scenario are the same for all three tiers.

For the environmental screening assessment for acid gases, we employ a single-tiered approach. We use the modeled air concentrations and compare those with ecological benchmarks.

For all tiers of the multipathway and environmental screening assessments, our approach to addressing model input uncertainty is generally cautious. We choose model inputs from the upper end of the range of possible values for the influential parameters used in the models, and we assume that the exposed individual exhibits ingestion behavior that would lead to a high total exposure. This approach reduces the likelihood of not identifying high risks for adverse impacts.

Despite the uncertainties, when individual pollutants or facilities do not exceed screening threshold emission rates (*i.e.*, screen out), we are confident that the potential for adverse multipathway impacts on human health is very low. On the other hand, when individual pollutants or facilities do exceed screening threshold emission rates, it does not mean that impacts are significant, only that we cannot rule out that possibility and that a refined assessment for the site might be necessary to obtain a more accurate risk characterization for the source category.

The EPA evaluates the following HAP in the multipathway and/or environmental risk screening assessments, where applicable: arsenic, cadmium, dioxins/furans, lead, mercury (both inorganic and methyl mercury), POM, HCl, and HF. These HAP represent pollutants that can cause adverse impacts either through direct exposure to HAP in the air or through exposure to HAP that are deposited from the air onto soils and surface waters and then through the environment into the food web. These HAP represent those HAP for which we can conduct a meaningful multipathway or environmental screening risk assessment. For other HAP not included in our screening assessments, the model has not been parameterized such that it can be used for that purpose. In some cases, depending on the HAP, we may not have appropriate multipathway models that allow us to predict the concentration of that pollutant. The EPA acknowledges that other HAP beyond these that we are evaluating may have the potential to

cause adverse effects and, therefore, the EPA may evaluate other relevant HAP in the future, as modeling science and resources allow.

IV. Analytical Results and Proposed Decisions

A. What are the results of the risk assessment and analyses?

1. Inhalation Risk Assessment Results

Table 2 of this preamble provides a summary of the results of the inhalation risk assessment for the source category. More detailed information on the risk assessment can be found in the risk document, available in the docket for this action.

TABLE 2. ENGINE TEST CELLS/STANDS INHALATION RISK ASSESSMENT RESULTS

Number of Facilities[1]	Maximum Individual Cancer Risk (in 1 million)[2]		Population at Increased Risk of Cancer ≥ 1-in-1 Million		Annual Cancer Incidence (cases per year)		Maximum Chronic Noncancer TOSHI[3]		Maximum Screening Acute Noncancer HQ[4]
59	Based on . . .		Based on . . .		Based on . . .		Based on . . .		Based on Actual Emissions Level
	Actual Emissions Level	Allowable Emissions Level	Actual Emissions Level	Allowable Emissions Level	Actual Emissions Level	Allowable Emissions Level	Actual Emissions Level	Allowable Emissions Level	
	20	70	2,700	190,000	0.005	0.02	0.1	0.5	HQ_{REL} = 9 (acrolein) HQ_{AEGL-1} = 0.4

[1] Number of facilities evaluated in the risk analysis.

[2] Maximum individual excess lifetime cancer risk due to HAP emissions from the source category.

[3] Maximum TOSHI. The target organ system with the highest TOSHI for the source category is respiratory. The respiratory TOSHI was calculated using the CalEPA chronic REL for acrolein. The EPA is in the process of updating the IRIS RfC for acrolein. If the RfC is updated prior to signature of the final rule, we will use it in the assessment.

[4] The maximum estimated acute exposure concentration was divided by available short-term threshold values to develop an array of HQ values. HQ values shown use the lowest available acute threshold value, which in most cases is the REL. When an HQ exceeds 1, we also show the HQ using the next lowest available acute dose-response value.

As shown in Table 2, the chronic inhalation cancer risk assessment, based on actual emissions could be as high as 20-in-1 million, with benzene, 1,3-butadiene, formaldehyde, and

acetaldehyde emissions from reciprocating engine testing as the major contributors to the risk. The total estimated cancer incidence from this source category is 0.005 excess cancer cases per year, or one excess case in every 200 years. About 2,700 people are estimated to have cancer risks above 1-in-1 million from HAP emitted from this source category, with 60 of those people estimated to have cancer risks above 10-in-1 million. The maximum chronic noncancer HI value for the source category could be up to 0.1 (respiratory) driven by emissions of acrolein, acetaldehyde, formaldehyde, and naphthalene from reciprocating engine testing, and no one is exposed to TOSHI levels above 1.

Results from the inhalation risk assessment using the MACT-allowable emissions indicate that the cancer MIR could be as high as 70-in-1 million with benzene, 1,3-butadiene, formaldehyde, and acetaldehyde emissions from reciprocating engine testing driving the risks, and that the maximum chronic noncancer TOSHI (respiratory) value could be as high as 0.5 at the MACT-allowable emissions level with acrolein, acetaldehyde, formaldehyde, and naphthalene emissions from reciprocating engine testing driving the TOSHI. The total estimated cancer incidence from this source category considering allowable emissions is expected to be about 0.02 excess cancer cases per year or 1 excess case in every 50 years. Based on allowable emission rates, approximately 190,000 people are estimated to have cancer risks above 1-in-1 million, with 500 of those people estimated to have cancer risks above 10-in-1 million. No people are estimated to have a noncancer HI above 1.

2. Acute Risk Results

Table 2 of this preamble provides the worst-case acute HQ (based on the REL) of 9, driven by actual emissions of acrolein. To better characterize the potential health risks associated with estimated worst-case acute exposures to HAP, and in response to a key recommendation

from the SAB's peer review of the EPA's RTR risk assessment methodologies, we examined a wider range of available acute health metrics than we do for our chronic risk assessments. This is in acknowledgement that there are generally more data gaps and uncertainties in acute reference values than there are in chronic reference values. By definition, the acute REL represents a health-protective level of exposure, with effects not anticipated below those levels, even for repeated exposures. However, the level of exposure that would cause health effects is not specifically known. Therefore, when an REL is exceeded and an AEGL–1 or ERPG–1 level is available (*i.e.*, levels at which mild, reversible effects are anticipated in the general public for a single exposure), we typically use them as an additional comparative measure, as they provide an upper bound for exposure levels above which exposed individuals could experience effects. As the exposure concentration increases above the acute REL, the potential for effects increases.

The highest refined screening acute HQ value was 9 (based on the acute REL for acrolein). This value includes a refinement of determining the highest HQ value that is outside facility boundaries. In this case the highest value (9) occurs adjacent to the property boundary in a remote wooded location. HQ values at any nearby residential location are below 1. As noted previously, the highest HQ assumes that the primary source of the acrolein emissions from turbine engine testing operations was modeled with an hourly emissions multiplier of 9.5 times the annual emissions rate. As presented in Table 2, no facilities are estimated to have an HQ based on an AEGL or an EPRG greater than 1.

3. Multipathway Risk Screening Results

Of the 59 facilities in the source category, 21 facilities reported emissions of carcinogenic PB-HAP (arsenic and POM), and 23 facilities reported emissions of non-carcinogenic PB-HAP (cadmium and mercury). Of the facilities included in the assessment, three facilities reported

emissions of a carcinogenic PB-HAP (arsenic) that exceeded a Tier 1 cancer screening threshold emission rate, and one facility reported emissions of non-carcinogenic PB-HAP (cadmium and mercury) that exceeded a Tier 1 noncancer screening threshold emission rate. For facilities that exceeded the Tier 1 multipathway screening threshold emission rate for one or more PB-HAP, we used additional facility site-specific information to perform a Tier 2 assessment and determine the maximum chronic cancer and noncancer impacts for the source category. Based on the Tier 2 multipathway cancer assessment, the arsenic emissions exceeded the Tier 2 screening threshold emission rate by a factor of 2.

An exceedance of a screening threshold emission rate in any of the tiers cannot be equated with a risk value or an HQ (or HI). Rather, it represents a high-end estimate of what the risk or hazard may be. For example, a screening threshold emission rate of 2 for a non-carcinogen can be interpreted to mean that we are confident that the HQ would be lower than 2. Similarly, a tier screening threshold emission rate of 30 for a carcinogen means that we are confident that the risk is lower than 30-in-1 million. Our confidence comes from the conservative, or health-protective, assumptions encompassed in the screening tiers: we choose inputs from the upper end of the range of possible values for the influential parameters used in the screening tiers, and we assume that the exposed individual exhibits ingestion behavior that would lead to a high total exposure.

The Tier 2 noncancer screening threshold emission rate for both mercury and cadmium emissions were below 1. Thus, based on the Tier 2 results presented above, additional screening or site-specific assessments were not deemed necessary.

4. Environmental Risk Screening Results

As described in section III.A of this document, we conducted an environmental risk screening assessment for the Engine Test Cells/Stands source category for the following pollutants: arsenic, cadmium, HCl, HF, lead, mercury (methyl mercury and mercuric chloride), and POMs.

In the Tier 1 screening analysis for PB-HAP (other than lead, which was evaluated differently), arsenic and POM emissions had no exceedances of any of the ecological benchmarks evaluated. Divalent mercury, methyl mercury and cadmium emissions had Tier 1 exceedances at one facility of surface soil benchmarks by a maximum screening value of 3.

A Tier 2 screening analysis was performed for divalent mercury, methyl mercury, and cadmium emissions. In the Tier 2 screening analysis, there were no exceedances of any of the ecological benchmarks evaluated for any of the pollutants.

For lead, we did not estimate any exceedances of the secondary lead NAAQS. For HCl and HF, the average modeled concentration around each facility (*i.e.*, the average concentration of all off-site data points in the modeling domain) did not exceed any ecological benchmark. In addition, each individual modeled concentration of HCl and HF (*i.e.*, each off-site data point in the modeling domain) was below the ecological benchmarks for all facilities.

Based on the results of the environmental risk screening analysis, we do not expect an adverse environmental effect as a result of HAP emissions from this source category.

5. Facility-Wide Risk Results

The facility-wide chronic MIR and TOSHI are based on emissions from all sources at the identified facilities (both MACT and non-MACT sources). The results of the facility-wide assessment for cancer risks indicate that 23 facilities have a facility-wide cancer MIR greater than or equal to 1-in-1 million, and 10 of those facilities have a facility-wide cancer MIR greater

than or equal to 10-in-1-million. The maximum facility-wide cancer MIR is 70-in-1 million, mainly driven by emissions of chromium (VI) compounds from organic solvent (miscellaneous VOC) evaporation. The total estimated cancer incidence from the whole facility is 0.03 excess cancer cases per year, or about one excess case in every 33 years. Approximately 190,000 people are estimated to have cancer risks above 1-in-1 million from exposure to HAP emitted from both MACT and non-MACT sources at the 59 facilities in this source category, with 6,800 of those people estimated to have cancer risks above 10-in-1 million. The maximum facility-wide TOSHI (neurological) for the source category is estimated to be less than 1 (at 0.4), mainly driven by emissions of lead compounds and hydrogen cyanide from open burning of rocket propellant (an industrial solid waste disposal process) and by trichloroethylene emissions from liquid waste (a general waste treatment process). No people are exposed to noncancer HI levels above 1, based on facility-wide emissions from the 59 facilities in this source category.

6. What demographic groups might benefit from this regulation?

To examine the potential for any environmental justice issues that might be associated with the source category, we performed a demographic analysis, which is an assessment of risk to individual demographic groups of the populations living within 5 km and within 50 km of the facilities. In the analysis, we evaluated the distribution of HAP-related cancer and noncancer risk from the Engine Test Cells/Stands source category across different demographic groups within the populations living near facilities.[27]

The results of the demographic analysis are summarized in Table 3 below. These results,

[27] Demographic groups included in the analysis are: White, African American, Native American, other races and multiracial, Hispanic or Latino, children 17 years of age and under, adults 18 to 64 years of age, adults 65 years of age and over, adults without a high school diploma, people living below the poverty level, people living two times the poverty level, and linguistically isolated people.

for various demographic groups, are based on the estimated risk from actual emissions levels for the population living within 50 km of the facilities.

TABLE 3. ENGINE TEST CELLS/STANDS DEMOGRAPHIC RISK ANALYSIS RESULTS

Engine Test Cells/Stands Source Category: Demographic Assessment Results - 50 km Study Area Radius			
		Population with Cancer Risk Greater than or Equal to 1 in 1 Million	**Population with HI Greater than 1**
	Nationwide	**Source Category**	
Total Population	317,746,049	2,745	0
	White and Minority by Percent		
White	62	90	0
Minority	38	10	0
	Minority by Percent		
African American	12	3	0
Native American	0.8	0.4	0
Hispanic or Latino (includes white and nonwhite)	18	2	0
Other and Multiracial	7	4	0
	Income by Percent		
Below Poverty Level	14	13	0
Above Poverty Level	86	87	0
	Education by Percent		
Over 25 and without a High School Diploma	14	9	0
Over 25 and with a High School Diploma	86	91	0
	Linguistically Isolated by Percent		
Linguistically Isolated	6	2	0

The results of the Engine Test Cells/Stands source category demographic analysis indicate that emissions from the source category expose approximately 2,700 people to a cancer risk at or above 1-in-1 million and no people to a chronic noncancer TOSHI greater than 1. Regarding cancer risk, the specific demographic results indicate that the percentage of the

population potentially impacted by engine test cells/stands emissions is greater than its corresponding nationwide percentage for the following demographics: Above Poverty Level (87 percent for the source category compared to 86 percent nationwide), and Over 25 and with a High School Diploma (91 percent for the source category compared to 86 percent nationwide). The remaining demographic group percentages are the same or less than the corresponding nationwide percentages.

The methodology and the results of the demographic analysis are presented in a technical report, *Risk and Technology Review – Analysis of Demographic Factors for Populations Living Near Engine Test Cells/Stands Source Category Operations*, available in the docket for this action.

B. What are our proposed decisions regarding risk acceptability, ample margin of safety, and adverse environmental effect?

1. Risk Acceptability

As noted in section III of this preamble, the EPA sets standards under CAA section 112(f)(2) using "a two-step standard-setting approach, with an analytical first step to determine an 'acceptable risk' that considers all health information, including risk estimation uncertainty, and includes a presumptive limit on MIR of approximately 1-in-10 thousand" (see 54 FR 38045, September 14, 1989). In this proposal, the EPA estimated risks based on actual and allowable emissions from engine test cells/stands located at major sources of HAP, and we considered these in determining acceptability.

The estimated inhalation cancer risk to the individual most exposed to actual or allowable emissions from the source category is 70-in-1 million. The estimated incidence of cancer due to inhalation exposures is 0.02 excess cancer cases per year, or one excess case every 50 years.

Approximately 190,000 people face an increased cancer risk at or above 1-in-1 million due to inhalation exposure to actual or allowable HAP emissions from this source category. The estimated maximum chronic noncancer TOSHI from inhalation exposure for this source category is 0.5. The screening assessment of worst-case inhalation impacts indicates a worst-case maximum acute HQ of 9 for acrolein based on the 1-hour REL and concentrations that are only 30 percent of the 1-hour AEGL–1 and ERPG–1.

Potential multipathway human health risks were estimated using a 3-tier screening assessment of the PB-HAP emitted by facilities in this source category. The only pollutant with elevated Tier 1 and Tier 2 screening values was arsenic, which is a carcinogen. The Tier 2 screening value for arsenic was 2. For noncancer, the Tier 2 screening values for all pollutants were less than 1.

In determining whether risks are acceptable for this source category, the EPA considered all available health information and risk estimation uncertainty as described above. The risk results indicate that both the actual and allowable inhalation cancer risks to the individual most exposed are well below 100-in-1 million, which is the presumptive limit of acceptability. In addition, the highest chronic noncancer TOSHI is well below 1, indicating low likelihood of adverse noncancer effects from inhalation exposures. The maximum acute HQ for all pollutants is 9 based on the REL for acrolein. As discussed in section III.C.3.c of this preamble, exceeding the REL does not automatically indicate an adverse health impact. Because of the conservative nature of the acute inhalation screening assessment (concurrent maximum emissions from all emission points, worst-case meteorology, and an exposed person at the location of highest concentration for a full hour), there is low probability that the maximum HQ of 9 is associated with adverse health effects. Further, the highest 1-hour acrolein concentration is only 30 percent

of the 1-hour AEGL–1 and ERPG–1. There are also low risks associated with ingestion via multipathway exposure, with the highest cancer risk being 2-in-1 million and the highest noncancer HI being less than 1, based on a Tier 2 multipathway assessment.

Considering all the health risk information and factors discussed above, including the uncertainties discussed in section III of this preamble, the EPA proposes that the risks are acceptable for this source category.

2. Ample Margin of Safety Analysis

As directed by CAA section 112(f)(2), we conducted an analysis to determine whether the current emissions standards provide an ample margin of safety to protect public health. Under the ample margin of safety analysis, the EPA considers all health factors evaluated in the risk assessment and evaluates the cost and feasibility of available control technologies and other measures (including the controls, measures, and costs reviewed under the technology review) that could be applied to this source category to further reduce the risks (or potential risks) due to emissions of HAP identified in our risk assessment. In this analysis, we considered the results of the technology review, risk assessment, and other aspects of our MACT rule review to determine whether there are any emission reduction measures necessary to provide an ample margin of safety with respect to the risks associated with these emissions.

Our risk analysis indicated the risks from the source category are low for both cancer and noncancer health effects, and, therefore, any risk reductions from further available control options would result in minimal health benefits. Moreover, as noted in our discussion of the technology review in section IV.C of this preamble, no additional cost-effective measures were identified for reducing HAP emissions from affected sources in the Engine Test Cells/Stands source category. Thus, we are proposing that the current Engine Test Cells/Stands NESHAP

provides an ample margin of safety to protect public health.

3. Adverse Environmental Effect

Based on the results of our environmental risk screening assessment, we conclude that there is not an adverse environmental effect from the Engine Test Cells/Stands source category. We are proposing that it is not necessary to set a more stringent standard to prevent, taking into consideration costs, energy, safety, and other relevant factors, an adverse environmental effect.

C. What are the results and proposed decisions based on our technology review?

1. How did we evaluate technological developments?

Section 112(d)(6) of the CAA requires a review of "developments in practices, processes and control technologies" in each source category as part of the technology review process. For this technology review, the "developments" we consider include:

• Add-on control technology that was not identified during the current NESHAP development;

• Improvement to an existing add-on control technology resulting in significant additional HAP emissions reductions;

• Work practice or operational procedure that was not previously identified during the current NESHAP development; or

• Process change or pollution prevention alternative that was not identified and considered during the current NESHAP development.

Developments in practices, processes, and control technologies were investigated through discussions with industry representatives, reviews of available construction and operating permits, searches of the EPA's RBLC, site visits, and literature searches. We also included questions on developments in practices, processes, and control technology in this source category

in the 2016 questionnaire that was completed by 10 companies. The questionnaire, along with the responses received, are included in the docket.

2. What was our analysis and what are our conclusions regarding technological developments?

Our review of the practices, processes, and control technology for the Engine Test Cells/Stands source category did not reveal any development that would result in revisions to the emission standards. In the original NESHAP, the technology basis for the MACT standard was the use of add-on capture systems and control devices (*i.e.*, thermal oxidizers or catalytic oxidizers). Our review did not identify any new or improved add-on control technology, any new work practices, operational procedures, process changes, or new pollution prevention approaches that reduce emissions in the category that have been implemented at engine testing operations since promulgation of the current NESHAP. Consequently, we propose that no revisions to the NESHAP are necessary pursuant to CAA section 112(d)(6). For a detailed discussion of the findings, refer to the *Technology Review for the Engine Test Cells/Stands Source Category* memorandum in the docket.

D. What other actions are we proposing?

In addition to the proposed actions described above, we are proposing additional revisions to the NESHAP. We are proposing revisions to the SSM provisions of the MACT rule in order to ensure that they are consistent with the Court decision in *Sierra Club v. EPA*, 551 F. 3d 1019 (D.C. Cir. 2008), which vacated two provisions that exempted sources from the requirement to comply with otherwise applicable CAA section 112(d) emission standards during periods of SSM. We also are proposing to require electronic submittal of notifications, semiannual reports, and compliance reports (which include performance test reports). Our analyses and proposed changes related to these issues are discussed below.

1. SSM

In its 2008 decision in *Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008), the Court vacated portions of two provisions in the EPA's CAA section 112 regulations governing the emissions of HAP during periods of SSM. Specifically, the Court vacated the SSM exemption contained in 40 CFR 63.6(f)(1) and 40 CFR 63.6(h)(1), holding that under section 302(k) of the CAA, emissions standards or limitations must be continuous in nature and that the SSM exemption violates the CAA's requirement that some CAA section 112 standards apply continuously.

We are proposing the elimination of the SSM exemption in this rule, which appears at 40 CFR 63.9305, 40 CFR 63.9340, and in Table 7 to subpart PPPPP of 40 CFR part 63. Consistent with *Sierra Club v. EPA*, we are proposing standards in this rule that apply at all times. We are also proposing several revisions to Table 7 (the General Provisions Applicability Table) as is explained in more detail below. For example, we are proposing to eliminate the incorporation of the General Provisions' requirement that the source develop an SSM plan. We also are proposing to eliminate and revise certain recordkeeping and reporting requirements related to the SSM exemption as further described below.

The EPA has attempted to ensure that the provisions we are proposing to eliminate are inappropriate, unnecessary, or redundant in the absence of the SSM exemption. We are specifically seeking comment on whether we have successfully done so. The EPA believes the removal of the SSM exemption creates no additional burden to facilities regulated under the Engine Test Cells/Stands NESHAP. Deviations currently addressed by a facility's SSM plan are required to be reported in the Semiannual Compliance Report, a requirement that remains under the proposal (40 CFR 63.9350). Facilities will no longer need to develop an SSM plan or keep it

current (Table 7, 40 CFR part 63, subpart PPPPP). We are specifically seeking comment on whether we have successfully removed the SSM exemption.

In proposing the standards in this rule, the EPA has taken into account startup and shutdown periods and, for the reasons explained below, is not proposing alternate standards for those periods. For add-on control systems, the Engine Test Cells/Stands NESHAP requires the measurement of thermal oxidizer operating temperature or catalytic oxidizer average temperature across the catalyst bed as well as the measurement of the emission capture system volumetric flow rate or facial velocity. Operating limits apply at all times (40 CFR 63.9302), including during periods of startup and shutdown. The Engine Test Cells/Stands NESHAP requires thermal oxidizer or catalytic oxidizer operating temperature and other add-on control device operating parameters to be recorded at least once every 15 minutes. The Engine Test Cells/Stands NESHAP specifies in 40 CFR 63.9340(b) that if an operating parameter is out of the allowed range, this is a deviation from the operating limit and must be reported as specified in 40 CFR 63.9350(d). Review of permits of facilities using add-on controls indicated that they were required by permit to operate the add-on controls at all times the engine test cells are being operated.

In proposing these rule amendments, the EPA has taken into account startup and shutdown periods and, for the reasons explained below, has not proposed alternate standards for those periods. Startups and shutdowns are part of normal operations for the Engine Test Cells/Stands source category. As currently specified in 40 CFR 63.9302(a), any new or reconstructed affected source for which you use add-on control option must meet operating limits "at all times." This means that during startup and shutdown periods, in order for a facility using add-on controls to meet the emission and operating standards, the control device for an

engine test cell/stand facility needs to be turned on and operating at specified levels before the facility begins engine testing operations, and the control equipment needs to continue to be operated until after the facility ceases engine testing operations.

Periods of startup, normal operations, and shutdown are all predictable and routine aspects of a source's operations. Malfunctions, in contrast, are neither predictable nor routine. Instead they are, by definition, sudden, infrequent, and not reasonably preventable failures of emissions control, process, or monitoring equipment. (40 CFR 63.2, definition of malfunction). The EPA interprets CAA section 112 as not requiring emissions that occur during periods of malfunction to be factored into development of CAA section 112 standards and this reading has been upheld as reasonable by the Court in *U.S. Sugar Corp. v. EPA*, 830 F.3d 579, 606–610 (2016). Under CAA section 112, emissions standards for new sources must be no less stringent than the level "achieved" by the best controlled similar source and for existing sources generally must be no less stringent than the average emission limitation "achieved" by the best performing 12 percent of sources in the category. There is nothing in CAA section 112 that directs the Agency to consider malfunctions in determining the level "achieved" by the best performing sources when setting emission standards. As the Court has recognized, the phrase "average emissions limitation achieved by the best performing 12 percent of" sources "says nothing about how the performance of the best units is to be calculated." *National Association of Clean Water Agencies v. EPA*, 734 F.3d 1115, 1141 (D.C. Cir. 2013). While the EPA accounts for variability in setting emissions standards, nothing in CAA section 112 requires the Agency to consider malfunctions as part of that analysis. The EPA is not required to treat a malfunction in the same manner as the type of variation in performance that occurs during routine operations of a source.

A malfunction is a failure of the source to perform in "normal or usual manner" and no statutory language compels the EPA to consider such events in setting CAA section 112 standards.

As the Court recognized in *U.S. Sugar Corp.*, accounting for malfunctions in setting standards would be difficult, if not impossible, given the myriad different types of malfunctions that can occur across all sources in the category and given the difficulties associated with predicting or accounting for the frequency, degree, and duration of various malfunctions that might occur. *Id*. at 608 ("the EPA would have to conceive of a standard that could apply equally to the wide range of possible boiler malfunctions, ranging from an explosion to minor mechanical defects. Any possible standard is likely to be hopelessly generic to govern such a wide array of circumstances.") As such, the performance of units that are malfunctioning is not "reasonably" foreseeable. See, for example, *Sierra Club v. EPA*, 167 F.3d 658, 662 (D.C. Cir. 1999). "The EPA typically has wide latitude in determining the extent of data gathering necessary to solve a problem. We generally defer to an agency's decision to proceed on the basis of imperfect scientific information, rather than to 'invest the resources to conduct the perfect study." See also, *Weyerhaeuser v. Costle*, 590 F.2d 1011, 1058 (D.C. Cir. 1978), "In the nature of things, no general limit, individual permit, or even any upset provision can anticipate all upset situations. After a certain point, the transgression of regulatory limits caused by 'uncontrollable acts of third parties,' such as strikes, sabotage, operator intoxication or insanity, and a variety of other eventualities, must be a matter for the administrative exercise of case-by-case enforcement discretion, not for specification in advance by regulation." In addition, emissions during a malfunction event can be significantly higher than emissions at any other time of source operation. For example, if an air pollution control device with 99-percent removal goes offline as a result of a malfunction (as might happen if, for example, the bags in a baghouse catch fire) and

the emission unit is a steady state type unit that would take days to shut down, the source would go from 99-percent control to zero control until the control device was repaired. The source's emissions during the malfunction would be 100 times higher than during normal operations. As such, the emissions over a 4-day malfunction period would exceed the annual emissions of the source during normal operations. As this example illustrates, accounting for malfunctions could lead to standards that are not reflective of (and significantly less stringent than) levels that are achieved by a well-performing non-malfunctioning source. It is reasonable to interpret CAA section 112 to avoid such a result. The EPA's approach to malfunctions is consistent with CAA section 112 and is a reasonable interpretation of the statute.

Although no statutory language compels the EPA to set standards for malfunctions, the EPA has the discretion to do so where feasible. For example, in the Petroleum Refinery Sector RTR, the EPA established a work practice standard for unique types of malfunction that result in releases from pressure relief devices or emergency flaring events because information was available to determine that such work practices reflected the level of control that applies to the best performers (80 FR 75178, 75211–14; December 1, 2015). The EPA will consider whether circumstances warrant setting standards for a particular type of malfunction and, if so, whether the EPA has sufficient information to identify the relevant best performing sources and establish a standard for such malfunctions. We also encourage commenters to provide any such information.

In the event that a source fails to comply with the applicable CAA section 112(d) standards as a result of a malfunction event, the EPA would determine an appropriate response based on, among other things, the good faith efforts of the source to minimize emissions during malfunction periods, including preventative and corrective actions, as well as root cause analyses

to ascertain and rectify excess emissions. The EPA would also consider whether the source's failure to comply with the CAA section 112(d) standard was, in fact, sudden, infrequent, not reasonably preventable, and was not instead caused in part by poor maintenance or careless operation. 40 CFR 63.2 (definition of malfunction).

If the EPA determines in a particular case that an enforcement action against a source for violation of an emission standard is warranted, the source can raise any and all defenses in that enforcement action and the federal district court will determine what, if any, relief is appropriate. The same is true for citizen enforcement actions. Similarly, the presiding officer in an administrative proceeding can consider any defense raised and determine whether administrative penalties are appropriate.

In summary, the EPA interpretation of the CAA and, in particular, CAA section 112 is reasonable and encourages practices that will avoid malfunctions. Administrative and judicial procedures for addressing exceedances of the standards fully recognize that violations may occur despite good faith efforts to comply and can accommodate those situations. *U.S. Sugar Corporation v. EPA* (830 F.3d 579, 606–610; D.C. Cir. 2016).

a. General Duty

We are proposing to revise the General Provisions table (Table 7) entry for 40 CFR 63.6(e)(1)–(2) by redesignating it as 40 CFR 63.6(e)(1)(i) and changing the "yes" in column 3 to a "no." Section 63.6(e)(1)(i) describes the general duty to minimize emissions. Some of the language in that section is no longer necessary or appropriate in light of the elimination of the SSM exemption. We are proposing instead to add general duty regulatory text at 40 CFR 63.9305 that reflects the general duty to minimize emissions while eliminating the reference to periods covered by an SSM exemption. The current language in 40 CFR 63.6(e)(1)(i)

characterizes what the general duty entails during periods of SSM. With the elimination of the SSM exemption, there is no need to differentiate between normal operations and SSM events in describing the general duty. Therefore, the language the EPA is proposing for 40 CFR 63.9305 does not include that language from 40 CFR 63.6(e)(1).

We are also proposing to revise Table 7 to add an entry for 40 CFR 63.6(e)(1)(ii) and include a "no" in column 3. Section 63.6(e)(1)(ii) imposes requirements that are not necessary with the elimination of the SSM exemption or are redundant with the general duty requirement being added at 40 CFR 63.9305.

We are also proposing to revise Table 7 to add an entry for 40 CFR 63.6(e)(1)(iii) and include a "yes" in column 3.

Finally, we are proposing to revise Table 7 to remove an entry for 40 CFR 63.6(e)(2) because this paragraph is reserved and is not applicable to 40 CFR part 63, subpart PPPPP.

b. SSM Plan

We are proposing to revise Table 7 to add an entry for 40 CFR 63.6(e)(3) and include a "no" in column 3. Generally, these paragraphs require development of an SSM plan and specify SSM recordkeeping and reporting requirements related to the SSM plan. As noted, the EPA is proposing to remove the SSM exemptions. Therefore, affected units will be subject to an emission standard during such events. The applicability of a standard during such events will ensure that sources have ample incentive to plan for and achieve compliance and, thus, the SSM plan requirements are no longer necessary.

c. Compliance with Standards

We are proposing to revise Table 7 entry for 40 CFR 63.6(f)(1) by changing the "yes" in column 3 to a "no." The current language of 40 CFR 63.6(f)(1) exempts sources from non-

opacity standards during periods of SSM. As discussed above, the Court in *Sierra Club* vacated the exemptions contained in this provision and held that the CAA requires that some CAA section 112 standards apply continuously. Consistent with *Sierra Club*, the EPA is proposing to revise standards in this rule to apply at all times.

d. Performance Testing

We are proposing to revise Table 7 entry for 40 CFR 63.7(e)(1) by changing the "yes" in column 3 to a "no." Section 63.7(e)(1) describes performance testing requirements. The EPA is instead proposing to revise the performance testing requirement at 40 CFR 63.9321 to remove the language "according to the requirements in §63.7(e)(1)" because 40 CFR 63.7(e)(1) restated the SSM exemption. 40 CFR 63.9321(a) of the current rule specifies that performance testing must be conducted when the emission capture system and add-on control device are operating at a representative flow rate, and the add-on control device is operating at a representative inlet concentration. Section 63.9321(a) also specifies that the performance test be conducted under representative operating conditions for the engine test cell/stand. Operations during periods of SSM, and during periods of nonoperation do not constitute representative operating conditions. The EPA is proposing to add language that requires the owner or operator to record the process information that is necessary to document operating conditions during the test and include in such record an explanation to support that such conditions represent normal operation. Section 63.7(e) requires that the owner or operator make available to the Administrator such records "as may be necessary to determine the condition of the performance test" available to the Administrator upon request but does not specifically require the information to be recorded. The regulatory text in the current rule already makes explicit the requirement to record the information.

e. Monitoring

We are proposing to revise Table 7 entries for 40 CFR 63.8(c)(1)(i) and 40 CFR 63.8(c)(1)(iii) by changing the "yes" in column 3 to a "no." The cross-references to the general duty and SSM plan requirements in those subparagraphs are not necessary considering other requirements of 40 CFR 63.8 that require good air pollution control practices (40 CFR 63.8(c)(1)) and that set out the requirements of a quality control program for monitoring equipment (40 CFR 63.8(d)).

f. Recordkeeping

We are proposing to revise the Table 7 entry for 40 CFR 63.10(b)(2)(i) by changing the "yes" in column 3 to a "no." Section 63.10(b)(2)(i) describes the recordkeeping requirements during startup and shutdown. These recording provisions are no longer necessary because the EPA is proposing that recordkeeping and reporting applicable to normal operations will apply to startup and shutdown. In the absence of special provisions applicable to startup and shutdown, such as a startup and shutdown plan, there is no reason to retain additional recordkeeping for startup and shutdown periods.

We are proposing to revise the Table 7 entry for 40 CFR 63.10(b)(2)(ii) by changing the "yes" in column 3 to a "no." Section 63.10(b)(2)(ii) describes the recordkeeping requirements during a malfunction. A similar record is already required in 40 CFR 63.9350(c). The regulatory text in 40 CFR 63.9350(c) differs from the General Provisions in that the General Provisions requires the creation and retention of a record of the occurrence and duration of each malfunction of process, air pollution control, and monitoring equipment; whereas 40 CFR 63.9350(c) applies to any failure to meet an applicable standard and is requiring that the source record the date, time, and duration of the failure rather than the "occurrence." The EPA is also proposing to add

to 40 CFR 63.9350(c) a requirement that sources keep records that include a list of the affected source or equipment and actions taken to minimize emissions, an estimate of the quantity of each regulated pollutant emitted over the standard for which the source failed to meet the standard, and a description of the method used to estimate the emissions. Examples of such methods would include product-loss calculations, mass balance calculations, measurements when available, or engineering judgment based on known process parameters. The EPA is proposing to require that sources keep records of this information to ensure that there is adequate information to allow the EPA to determine the severity of any failure to meet a standard, and to provide data that may document how the source met the general duty to minimize emissions when the source has failed to meet an applicable standard.

We are proposing to revise the Table 7 by adding an entry for 40 CFR 63.10(b)(2)(iv) and including a "no" in column 3. When applicable, the provision requires sources to record actions taken during SSM events when actions were inconsistent with their SSM plan. The requirement is no longer appropriate because SSM plans will no longer be required. The requirement previously applicable under 40 CFR 63.10(b)(2)(iv)(B) to record actions to minimize emissions and record corrective actions is now applicable by reference to 40 CFR 63.9355(a).

We are proposing to revise Table 7 by adding an entry for 40 CFR 63.10(b)(2)(v) and including a "no" in column 3. When applicable, the provision requires sources to record actions taken during SSM events to show that actions taken were consistent with their SSM plan. The requirement is no longer appropriate because SSM plans will no longer be required.

We are proposing to revise Table 7 entry for 40 CFR 63.10(c)(1)-(6), (9)-(15) by re-designating it as 40 CFR 63.10(c)(1)-(6), (9)-(14) and adding an entry for 40 CFR 63.10(c)(15)

and including a "no" in column 3. The EPA is proposing that 40 CFR 63.10(c)(15) no longer apply. When applicable, the provision allows an owner or operator to use the affected source's SSM plan or records kept to satisfy the recordkeeping requirements of the SSM plan, specified in 40 CFR 63.6(e), to also satisfy the requirements of 40 CFR 63.10(c)(10) through (12). The EPA is proposing to eliminate this requirement because SSM plans would no longer be required, and, therefore, 40 CFR 63.10(c)(15) no longer serves any useful purpose for affected units.

g. Reporting

We are proposing to revise Table 7 entry for 40 CFR 63.10(d)(5) by changing the "yes" in column 3 to a "no." Section 63.10(d)(5) describes the reporting requirements for startups, shutdowns, and malfunctions. To replace the General Provisions reporting requirement, the EPA is proposing to add reporting requirements to 40 CFR 63.9350. The replacement language differs from the General Provisions requirement in that it eliminates periodic SSM reports as a stand-alone report. We are proposing language that requires sources that fail to meet an applicable standard at any time to report the information concerning such events in the semi-annual compliance report already required under this rule. We are proposing that the report must also contain the number, date, time, duration, and the cause of such events (including unknown cause, if applicable), a list of the affected source or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions.

Examples of such methods would include product-loss calculations, mass balance calculations, measurements when available, or engineering judgment based on known process parameters. The EPA is proposing this requirement to ensure that there is adequate information to determine compliance, to allow the EPA to determine the severity of the failure to meet an

applicable standard, and to provide data that may document how the source met the general duty to minimize emissions during a failure to meet an applicable standard.

We will no longer require owners or operators to determine whether actions taken to correct a malfunction are consistent with an SSM plan, because plans would no longer be required. The proposed amendments, therefore, eliminate the cross-reference to 40 CFR 63.10(d)(5)(i) that contains the description of the previously required SSM report format and submittal schedule from this section. These specifications are no longer necessary because the events will be reported in otherwise required reports with similar format and submittal requirements. Section 63.10(d)(5)(ii) describes an immediate report for startups, shutdowns, and malfunctions when a source failed to meet an applicable standard but did not follow the SSM plan. We will no longer require owners and operators to report when actions taken during a startup, shutdown, or malfunction were not consistent with an SSM plan because plans would no longer be required.

2. Electronic Reporting Requirements

Through this proposal, the EPA is proposing that owners and operators of engine test cells/stands submit electronic copies of required performance test reports, performance evaluation reports, and semiannual compliance reports through the EPA's Central Data Exchange (CDX) using the Compliance and Emissions Data Reporting Interface (CEDRI). A description of the electronic data submission process is provided in the memorandum, *Electronic Reporting Requirements for New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) Rules*, available in Docket ID No. EPA-HQ-OAR-2018-0753. The proposed rule requires that performance test results collected using test methods that are supported by the EPA's Electronic Reporting Tool (ERT) as listed on the ERT

website[28] at the time of the test be submitted in the format generated through the use of the ERT and that other performance test results be submitted in portable document format (PDF) using the attachment module of the ERT. Similarly, performance evaluation results of continuous monitoring systems (CMS) measuring relative accuracy test audit (RATA) pollutants that are supported by the ERT at the time of the test must be submitted in the format generated through the use of the ERT and other performance evaluation results be submitted in PDF using the attachment module of the ERT.

For the semiannual compliance reports the proposed rule requires that owners and operators use the appropriate spreadsheet template to submit information to CEDRI. A draft version of the proposed template for these reports is included in the docket for this rulemaking.[29] The EPA specifically requests comment on the content, layout, and overall design of the template.

Additionally, the EPA has identified two broad circumstances in which electronic reporting extensions may be provided. In both circumstances, the decision to accept the claim of needing additional time to report is within the discretion of the Administrator, and reporting should occur as soon as possible. The EPA is providing these potential extensions to protect owners and operators from noncompliance in cases where they cannot successfully submit a report by the reporting deadline for reasons beyond their control. The situation where an extension may be warranted due to outages of either the EPA's CDX or CEDRI which precludes an owner or operator from accessing the system and submitting required reports is addressed in proposed 40 CFR 63.9350(i). The situation where an extension may be warranted due to a force

[28] *https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert*.
[29] See *Engine_Test_Cells_Semiannual_Spreadsheet_Template_Draft*, available at Docket ID No. EPA-HQ-OAR-2018-0753.

majeure event, which is defined as an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents an owner or operator from complying with the requirement to submit a report electronically as required by this rule is addressed in proposed 40 CFR 63.9350(j). Examples of such events are acts of nature, acts of war or terrorism, or equipment failure or safety hazards beyond the control of the facility.

The electronic submittal of the reports addressed in this proposed rulemaking, when finalized, will increase the usefulness of the data contained in those reports, is in keeping with current trends in data availability and transparency, will further assist in the protection of public health and the environment, will improve compliance by facilitating the ability of regulated facilities to demonstrate compliance with requirements and by facilitating the ability of delegated state, local, tribal, and territorial air agencies and the EPA to assess and determine compliance, and will ultimately reduce burden on regulated facilities, delegated air agencies, and the EPA. Electronic reporting also eliminates paper-based, manual processes, thereby saving time and resources, simplifying data entry, eliminating redundancies, minimizing data reporting errors, and providing data quickly and accurately to the affected facilities, air agencies, the EPA, and the public. Moreover, electronic reporting is consistent with the EPA's plan[30] to implement Executive Order 13563 and is in keeping with the EPA's Agency-wide policy[31] developed in

[30] EPA's *Final Plan for Periodic Retrospective Reviews*, August 2011. Available at: *https://www.regulations.gov/document?D=EPA-HQ-OA-2011-0156-0154*.
[31] *E-Reporting Policy Statement for EPA Regulations*, September 2013. Available at: *https://www.epa.gov/sites/production/files/2016-03/documents/epa-ereporting-policy-statement-2013-09-30.pdf*.

response to the White House's Digital Government Strategy.[32] For more information on the benefits of electronic reporting, see the memorandum, *Electronic Reporting Requirements for New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP) Rules*, available in Docket ID No. EPA-HQ-OAR-2018-0753.

3. Technical and Editorial Changes

The following are additional proposed changes that address technical and editorial correction:

- Revising the monitoring requirements in 40 CFR 63.9307 to add THC as a continuous emission monitoring option and to add Performance Specification 8A and EPA Method 25A;
- Revising the initial compliance requirements in 40 CFR 63.9320 to include a provision for the performance test to be used to demonstrate compliance;
- Revising Tables 3 and 4 to 40 CFR part 63, subpart PPPPP, to add alternative compliance option; and
- Revising section 40 CFR 63.9350 to address the reporting of performance tests and performance evaluations.

E. What compliance dates are we proposing?

The EPA is proposing that existing affected sources must comply with the amendments in this rulemaking no later than 180 days after the effective date of the final rule. The EPA is also proposing that affected sources that commence construction or reconstruction after **[INSERT**

[32] *Digital Government: Building a 21st Century Platform to Better Serve the American People*, May 2012. Available at: *https://obamawhitehouse.archives.gov/sites/default/files/omb/egov/digital-government/digital-government.html*.

DATE OF PUBLICATION IN THE FEDERAL REGISTER] must comply with all requirements of the subpart, including the amendments being proposed, no later than the effective date of the final rule or upon startup, whichever is later. All affected existing facilities would have to continue to meet the current requirements of 40 CFR part 63, subpart PPPPP, until the applicable compliance date of the amended rule. The final action is not expected to be a "major rule" as defined by 5 U.S.C. 804(2), therefore, the effective date of the final rule will be the promulgation date as specified in CAA section 112(d)(10). For existing affected sources, we are proposing two changes that would impact ongoing compliance requirements for 40 CFR part 63, subpart PPPPP. As discussed elsewhere in this preamble, we are proposing to add a requirement that notifications, performance test results, and the semiannual reports using the new template be submitted electronically. We are also proposing to change the requirements for SSM by removing the exemption from the requirements to meet the standard during SSM periods and by removing the requirement to develop and implement an SSM plan. Our experience with similar industries that have been required to convert reporting mechanisms, install necessary hardware, install necessary software, become familiar with the process of submitting performance test results electronically through the EPA's CEDRI, test these new electronic submission capabilities, reliably employ electronic reporting, and convert logistics of reporting processes to different time-reporting parameters, shows that a time period of a minimum of 90 days, and more typically 180 days, is generally necessary to successfully complete these changes. Our experience with similar industries further shows that this sort of regulated facility generally requires a time period of 180 days to read and understand the amended rule requirements; evaluate their operations to ensure that they can meet the standards during periods of startup and shutdown as defined in the rule and make any necessary adjustments; adjust

parameter monitoring and recording systems to accommodate revisions; and update their operations to reflect the revised requirements. The EPA recognizes the confusion that multiple different compliance dates for individual requirements would create and the additional burden such an assortment of dates would impose. From our assessment of the timeframe needed for compliance with the entirety of the revised requirements, the EPA considers a period of 180 days to be the most expeditious compliance period practicable, and, thus, is proposing that existing affected sources be in compliance with all of this regulation's revised requirements within 180 days of the regulation's effective date. We solicit comment on this proposed compliance period, and we specifically request submission of information from sources in this source category regarding specific actions that would need to be undertaken to comply with the proposed amended requirements and the time needed to make the adjustments for compliance with any of the revised requirements. We note that information provided may result in changes to the proposed compliance date.

V. Summary of Cost, Environmental, and Economic Impacts

A. What are the affected sources?

There are currently 59 engine test cells/stands facilities operating in the United States that conduct engine testing operations and are subject to the Engine Test Cells/Stands NESHAP. The 40 CFR part 63, subpart PPPPP, affected source is the collection of all equipment and activities associated with engine test cells/stands used for testing uninstalled stationary or uninstalled mobile engines located at a major source of HAP emissions. A new or reconstructed affected source is a completely new engine testing source that commenced construction after May 14, 2002, or meets the definition of reconstruction and commenced reconstruction after May 14, 2002.

B. What are the air quality impacts?

At the current level of control, emissions of total HAP are estimated to be approximately 163 tpy. This represents a reduction in HAP emissions of about 80 tpy due to the current (2003) Engine Test Cells/Stands NESHAP. The proposed amendments will require all affected sources subject to the emission standards in the Engine Test Cells/Stands NESHAP to operate without the SSM exemption. We do not expect that eliminating the SSM exemption will result in reduced emissions since the NESHAP requires that the operating limits established during the performance test for demonstrating continuous compliance must be met at all times.

Indirect or secondary air emissions impacts are impacts that would result from the increased electricity usage associated with the operation of control devices (*i.e.*, increased secondary emissions of criteria pollutants from power plants). Energy impacts consist of the electricity and steam needed to operate control devices and other equipment that would be required under this proposed rule. The EPA expects no secondary air emissions impacts or energy impacts from this rulemaking.

C. What are the cost impacts?

We estimate that each facility in the source category will experience costs as a result of these proposed amendments that are estimated as part of the reporting and recordkeeping costs. Each facility will experience costs to read and understand the rule amendments. Costs associated with the elimination of the SSM exemption were estimated as part of the reporting and recordkeeping costs and include time for re-evaluating previously developed SSM record systems. Costs associated with the requirement to electronically submit notifications and semi-annual compliance reports using CEDRI were estimated as part of the reporting and recordkeeping costs and include time for becoming familiar with CEDRI and the reporting

template for semi-annual compliance reports. The recordkeeping and reporting costs are presented in section VIII.C of this preamble.

D. What are the economic impacts?

Economic impact analyses focus on changes in market prices and output levels. If changes in market prices and output levels in the primary markets are significant enough, impacts on other markets may also be examined. Both the magnitude of costs associated with the proposed requirements and the distribution of these costs among affected facilities can have a role in determining how the market will change in response to a proposed rule.

Based on the costs associated with the elimination of the SSM exemption and the costs associated with the requirement to electronically submit compliance reports presented in section VIII.C of this preamble, there are no significant economic impacts from these proposed amendments

E. What are the benefits?

The EPA did not propose changes to the emission limit requirements and estimates the proposed changes to SSM, recordkeeping, reporting, and monitoring are not economically significant. Because these proposed amendments are not considered economically significant, as defined by Executive Order 12866, and because no emission reductions were estimated, we did not estimate any benefits from reducing emissions.

VI. Request for Comments

We solicit comments on this proposed action. In addition to general comments on this proposed action, we are also interested in additional data that may improve the risk assessments and other analyses. We are specifically interested in receiving any improvements to the data used in the site-specific emissions profiles used for risk modeling. Such data should include

supporting documentation in sufficient detail to allow characterization of the quality and representativeness of the data or information. Section VII of this preamble provides more information on submitting data.

We specifically solicit comment on an additional issue under consideration that could reduce regulatory burden for owners or operators of certain engine test cells/stands facilities. Currently, if an affected source owner or operator elects to comply with the percent reduction emission limitation, an initial performance test must be conducted to determine the capture and control efficiencies of the equipment and to establish the operating limits to be achieved on a continuous basis. Performance tests are to be conducted under representative operating conditions and the source is required to document the operating conditions during the test and explain why the conditions represent normal operation. Industry stakeholders have raised the issue that, for facilities with multiple test cells/stands, it is difficult to define "normal" operation due to the several types of engine tests conducted, the varying operation conditions for the engine tests, the number of cells/stands, different kinds of test fuels, and the complex emission capture system. Thus, affected sources have felt the need to request approval on the testing protocol prior to conducting the performance tests to limit tests to representative cells. We are requesting comment on whether this process of requesting prior approval for determining what is considered "normal" operation for a specific affected facility is reasonable and appropriate for the one-time required performance test.

VII. Submitting Data Corrections

The site-specific emissions profiles used in the source category risk and demographic analyses and instructions are available for download on the RTR website at

https://www3.epa.gov/ttn/atw/rrisk/rtrpg.html. The data files include detailed information for each HAP emissions release point for the facilities in the source category.

If you believe that the data are not representative or are inaccurate, please identify the data in question, provide your reason for concern, and provide any "improved" data that you have, if available. When you submit data, we request that you provide documentation of the basis for the revised values to support your suggested changes. To submit comments on the data downloaded from the RTR website, complete the following steps:

1. Within this downloaded file, enter suggested revisions to the data fields appropriate for that information.

2. Fill in the commenter information fields for each suggested revision (*i.e.*, commenter name, commenter organization, commenter email address, commenter phone number, and revision comments).

3. Gather documentation for any suggested emissions revisions (*e.g.*, performance test reports, material balance calculations).

4. Send the entire downloaded file with suggested revisions in Microsoft® Access format and all accompanying documentation to Docket ID No. EPA-HQ-OAR-2018-0753 (through the method described in the **ADDRESSES** section of this preamble).

5. If you are providing comments on a single facility or multiple facilities, you need only submit one file for all facilities. The file should contain all suggested changes for all sources at that facility (or facilities). We request that all data revision comments be submitted in the form of updated Microsoft® Excel files that are generated by the Microsoft® Access file. These files are provided on the RTR website at *https://www3.epa.gov/ttn/atw/rrisk/rtrpg.html*.

VIII. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at *https://www.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 OMB for review.

B. Executive Order 13771: Reducing Regulations and Controlling Regulatory Costs

This action is not expected to be an Executive Order 13771 regulatory action because this action is not significant under Executive Order 12866.

C. *Paperwork Reduction Act (PRA)*

The information collection activities in this proposed rule have been submitted for approval to OMB under the PRA. The Information Collection Request (ICR) document that the EPA prepared has been assigned EPA ICR number 2066.08. You can find a copy of the ICR in the docket for this rule, and it is briefly summarized here.

We are proposing changes to the reporting and recordkeeping requirements for the Engine Test Cells/Stands NESHAP in the form of eliminating the SSM reporting and SSM plan requirements and requiring electronic submittal of all compliance reports (including performance test reports). Any information submitted to the Agency for which a claim of confidentiality is made will be safeguarded according to the Agency policies set forth in title 40, chapter 1, part 2, subpart B - Confidentiality of Business Information (see 40 CFR part 2; 41 FR 36902, September 1, 1976; amended by 43 FR 40000, September 8, 1978; 43 FR 42251, September 20, 1978; 44 FR 17674, March 23, 1979).

Respondents/affected entities: Respondents are owners and operators of engine test cells/stands facilities subject to the Engine Test Cells/Standards NESHAP.

Respondent's obligation to respond: Mandatory (40 CFR part 63, subpart PPPPP).

Estimated number of respondents: On average over the next 3 years, approximately 12 existing major sources will be subject to these standards, of which seven are subject to emission limits, monitoring, recordkeeping, and reporting requirements. It is also estimated that one additional respondent will become subject to the emission standards over the 3-year period and two additional respondents will be subject only to the notification requirements.

Frequency of response: The average number of respondents over the 3-year period of this ICR is eight.

Total estimated burden: The average annual burden to industry over the next 3 years from these recordkeeping and reporting requirements is estimated to be 1,000 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: The total capital/startup costs for this ICR are $500. The total operation and maintenance (O&M) costs for this ICR are $2,400. The average annual cost for capital/startup and O&M costs to industry over the next 3 years of the ICR is estimated to be $2,900. These are the recordkeeping costs.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for the EPA's regulations in 40 CFR are listed in 40 CFR part 9.
Submit your comments on the Agency's need for this information, the accuracy of the provided burden estimates and any suggested methods for minimizing respondent burden to the EPA using the docket identified at the beginning of this rule. You may also send your ICR-related

comments to OMB's Office of Information and Regulatory Affairs via email to *OIRA_submission@omb.eop.gov*, Attention: Desk Officer for the EPA. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after receipt, OMB must receive comments no later than **[INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. The EPA will respond to any ICR-related comments in the final rule.

D. 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. During the original rulemaking, an ICR was sent to over 100 companies representing over 300 individual facilities. Using that information, along with discussion with industry stakeholders, it was determined that there were no major sources that were also small businesses. Thus, this action will not impose any requirements on small entities.

E. 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. The action imposes no enforceable duty on any state, local, or tribal governments or the private sector.

F. 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. The action affects private industry and does not impose economic costs on state or local governments.

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

This action does not have tribal implications as specified in Executive Order 13175. The EPA does not know of any engine test cell/stand facilities owned or operated by Indian tribal governments. Thus, Executive Order 13175 does not apply to this action.

H. 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. This action's health and risk assessments are contained in sections III and IV of this preamble and further documented in the risk report titled *Residual Risk Assessment for the Engine Test Cells/Stands Source Category in Support of the 2019 Risk and Technology Review Proposed Rule*, which is available in the docket for this action.

I. 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.

J. National Technology Transfer and Advancement Act (NTTAA)

This rulemaking does not involve technical standards.

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

The EPA believes that 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 documentation for this decision is contained in section IV.B of this preamble and the technical report, *Risk and Technology Review Analysis of Demographic Factors for Populations Living Near Engine Test Cells/Stands Source Category Operations*.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Engine test cells/stands, Hazardous substances, Incorporation by reference, Reporting and recordkeeping requirements.

Dated: April 25, 2019.

Andrew R. Wheeler,
Administrator.

For the reasons stated in the preamble, 40 CFR part 63 is proposed to be amended as follows:

PART 63-NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

1. The authority citation for part 63 continues to read as follows:

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

Subpart PPPPP-[Amended]

2. Section 63.9295 is amended by revising paragraphs (a)(1) and (a)(2) and adding paragraph (a)(3) to read as follows:

§63.9295 When do I have to comply with this subpart?

(a) *Affected sources.* (1) If you start up your new or reconstructed affected source before May 27, 2003, you must comply with the emission limitations in this subpart no later than May 27, 2003; except that the compliance date for the revised requirements promulgated at §§63.9295, 63.9305, 63.9340, 63.9350, 63.9355, 63.9375, and Table 7 of 40 CFR part 63, subpart PPPPP, published on **[DATE OF PUBLICATION OF FINAL RULE IN THE FEDERAL REGISTER**] is **[DATE 180 DAYS AFTER THE DATE OF PUBLICATION OF FINAL RULE IN THE FEDERAL REGISTER]**.

(2) If you start up your new or reconstructed affected source on or after May 27, 2003, you must comply with the emission limitations in this subpart upon startup; except that if the initial startup of your new or reconstructed affected source occurs after May 27, 2003, but on or before **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, the compliance date for the revised requirements promulgated at §§63.9295, 63.9305, 63.9340,

63.9350, 63.9355, 63.9375, and Table 7 of this subpart published on **[DATE OF PUBLICATION OF FINAL RULE IN THE FEDERAL REGISTER]** is **[DATE 180 DAYS AFTER THE DATE OF PUBLICATION OF FINAL RULE IN THE FEDERAL REGISTER]**.

(3) If the initial startup of your new or reconstructed affected source occurs after **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**, the compliance date is **[DATE OF PUBLICATION OF FINAL RULE IN THE FEDERAL REGISTER]** or the date of startup, whichever is later.

* * * * *

3. Section 63.9305 is revised to read as follows:

§63.9305 What are my general requirements for complying with this subpart?

(a) Prior to **[DATE 181 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE FEDERAL REGISTER]**, You must be in compliance with the emission limitation that applies to you at all times, except during periods of startup, shutdown, or malfunction (SSM) of your control device or associated monitoring equipment. After **[DATE 180 DAYS AFTER PUBLICATION OF FINAL RULE IN THE FEDERAL REGISTER]**, you must be in compliance with the applicable emission limitation at all times.

(b) If you must comply with the emission limitation, you must operate and maintain your engine test cell/stand, air pollution control equipment, and monitoring equipment in a manner consistent with safety and good air pollution control practices for minimizing emissions at all times. The general duty to

minimize emissions does not require the owner or operator to make any further efforts to reduce emissions if levels required by the applicable standard have been achieve. Determination of whether a source is operating in compliance with operation and maintenance requirements will be based on information available to the Administrator that may include, but is not limited to, monitoring results, review of operation and maintenance procedures, review of operation and maintenance records, and inspection of the affected source.

(c) For affected sources until **[DATE 180 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE FEDERAL REGISTER]**, You must develop a written SSM plan (SSMP) for emission control devices and associated monitoring equipment according to the provisions in §63.6(e)(3). The plan will apply only to emission control devices, and not to engine test cells/stands.

4. Section 63.9307 is amended by revising paragraphs (c)(1), (2), and (4) to read as follows:

§63.9307 What are my continuous emissions monitoring system installation, operation, and maintenance requirements?

* * * * *

(c) To comply with either emission limitations, the CEMS must be installed and operated according to the requirements described in paragraphs (c)(1) through (4) of this section.

(1) You must install, operate, and maintain each CEMS according to the applicable Performance Specification (PS) of 40 CFR part 60, appendix B (PS– 3, PS–4A, or PS-8).

(2) You must conduct a performance evaluation of each CEMS according to the requirements in 40 CFR 63.8 and according to PS–3 of 40 CFR part 60, appendix B, using Reference Method 3A or 3B for the O_2 CEMS, and according to PS–4A of 40 CFR part 60, appendix B, using Reference Method 10 or 10B for the CO CEMS, and according to PS-8 of CFR Part 60, Appendix B, using Reference Method 25A for the THC CEMS. If the fuel used in the engines being tested is natural gas, you may use ASTM D 6522–00, Standard Test Method for Determination of Nitrogen Oxides, Carbon Monoxide and Oxygen Concentrations in Emissions from Natural Gas Fired Reciprocating Engines, Combustion Turbines, Boilers, and Process Heaters Using Portable Analyzers (incorporated by reference, see §63.14). As an alternative to Method 3B, you may use ANSI/ASME PTC 19.10–1981, ''Flue and Exhaust Gas Analyses [Part 10, Instruments and Apparatus],'' (incorporated by reference, see §63.14).

* * * * *

(4) All CEMS data must be reduced as specified in §63.8(g)(2) and recorded as CO or THC as carbon concentration in parts per million by volume, dry basis (ppmvd), corrected to 15 percent O_2 content.

* * * * *

5. Section 63.9320 is amended by revising paragraphs (b) and (c) to read as follows:

§63.9320 What procedures must I use?

* * * * *

(b) You must conduct an initial performance evaluation of each capture and control system according to §§63.9321, 63.9322, 63.9323 and 63.9324, and each CEMS according to the requirements in 40 CFR 63.8 and according to the applicable Performance Specification of 40 CFR part 60, appendix B (PS– 3, PS–4A, or PS-8).

(c) The initial demonstration of compliance with the carbon monoxide (CO) or total hydrocarbon (THC) concentration limitation consists of either the first 4-hour rolling average CO or THC concentration recorded after completion of the CEMS performance evaluation if CEMS are installed or the average of the test run averages during the initial performance test. You must correct the CO or THC concentration at the outlet of the engine test cell/stand or the emission control device to a dry basis and to 15 percent O_2 content according to Equation 1 of this section:

$$C_c = C_{unc} \left[\frac{5.9}{(20.9 - \%O2d)}\right]$$

Where:
C_c = concentration of CO or THC, corrected to 15 percent oxygen, ppmvd
C_{unc} = total uncorrected concentration of CO or THC, ppmvd
$\%O_{2d}$ = concentration of oxygen measured in gas stream, dry basis, percent by volume

* * * * *

6. Section 63.9330 is amended by revising paragraph (a) to read as follows:

§63.9330 How do I demonstrate initial compliance with the emission limitation?

(a) You must demonstrate initial compliance with the emission limitation that applies to you according to Table 4 to this subpart.

* * * * *

7. Section 63.9340 is amended by revising paragraph (c) to read as follows:

§63.9340 How do I demonstrate continuous compliance with the emission limitations?

* * * * *

(c) *Startups, shutdowns, and malfunctions.* (1) For affected sources until **[DATE 180 DAYS AFTER THE DATE OF PUBLICATION OF FINAL RULE IN FEDERAL REGISTER]**, consistent with §§63.6(e) and 63.7(e)(1), deviations that occur during a period of SSM of control devices and associated monitoring equipment are not violations if you

demonstrate to the Administrator's satisfaction that you were operating in accordance with §63.6(e)(1).

(2) The Administrator will determine whether deviations that occur during a period you identify as an SSM of control devices and associated monitoring equipment are violations, according to the provisions in §63.6(e).

8. Section 63.9350 is amended by:

a. Revising paragraph (a)(6) and;

b. Adding paragraph (a)(7);

c. Revising paragraph (c) introductory text;

d. Adding paragraphs (c)(5);

e. Revising paragraph (d) introductory text;

f. Adding paragraph (d)(11);

g. Revising paragraph (e);

h. Adding paragraphs (f) through (i).

The revisions and additions read as follows:

§63.9350 What reports must I submit and when?

(a) * * *

(6) For affected sources until **[DATE 180 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN FEDERAL REGISTER]**, if you had an SSM of a control device or associated monitoring equipment during the reporting period and you took actions consistent with your SSMP, the compliance report must include the information in paragraphs §63.10(d)(5)(i).

(7) Beginning on **[DATE 180 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN FEDERAL REGISTER]**, submit all semiannual compliance reports following the procedure specified in paragraph (g) of this section.

* * * * *

(c) For each deviation from an emission limit, the semiannual compliance report must include the information in paragraphs (b)(1) through (3) of this section and the information included in paragraphs (c)(1) through (4) of this section, except that after **[DATE 180 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN FEDERAL REGISTER]** the semiannual compliance report must also include the information included in paragraph (c)(5) of this section.

* * * * *

(5) An estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions.

* * * * *

(d) For each CEMS or CPMS deviation, the semiannual compliance report must include the information in paragraphs (b)(1) through (3) of this section and the information included in paragraphs (d)(1) through (10) of this section, except that after **[DATE 180 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN FEDERAL REGISTER]** the semiannual compliance report must also include the information included in paragraph (d)(11) of this section.

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(11) The total operating time of each new or reconstructed engine test cell/ stand during the reporting period.

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(e) Until **[DATE 180 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN THE FEDERAL REGISTER]**, if you had an SSM of a control device or associated monitoring equipment during the semiannual reporting period that was not consistent with your SSMP, you must submit an immediate SSM report according to the requirements in §63.10(d)(5)(ii).

(f) Within 60 days after the date of completing each performance test or performance evaluation required by this subpart, you must submit the results of the performance test following the procedures specified in paragraphs (f)(1) through (3) of this section.

(1) Data collected or performance evaluations of CMS measuring relative accuracy test audit (RATA) pollutants using test methods supported by the EPA's Electronic Reporting Tool (ERT) as listed on the EPA's ERT website *(https://www.epa.gov/electronic-reporting-air-emissions/electronic-reporting-tool-ert)* at the time of the test. Submit the results of the performance test or performance evaluation to the EPA via the Compliance and Emissions Data Reporting Interface (CEDRI), which can be accessed through the EPA's Central Data Exchange (CDX) (*https://cdx.epa.gov/*). The data must be submitted in a file format generated through the use of the EPA's ERT. Alternatively, you may submit an electronic file consistent with the extensible markup language (XML) schema listed on the EPA's ERT website.

(2) Data collected or performance evaluations of CMS measuring relative accuracy test audit (RATA) pollutants using test methods that are not supported by the EPA's ERT as listed on the EPA's ERT website at the time of the test. The results of the performance test or performance evaluation must be included as an attachment in the ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT website. Submit the ERT generated package or alternative file to the EPA via CEDRI.

(3) *Confidential business information (CBI).* If you claim some of the information submitted under paragraph (f) of this section is CBI, you must submit a complete file, including information claimed to be CBI, to the EPA. The file must be generated through the use of the EPA's ERT or an alternate electronic file consistent with the XML schema listed on the EPA's ERT website. Submit the file on a compact disc, flash drive, or other commonly used electronic storage medium and clearly mark the medium as CBI. Mail the electronic medium to U.S. EPA/OAQPS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described in paragraph (f)(1) of this section.

(g) If you are required to submit reports following the procedure specified in this paragraph, you must submit reports to the EPA via CEDRI, which can be accessed through the EPA's Central Data Exchange (CDX) (*https://cdx.epa.gov/*). You must use the appropriate electronic report template on the CEDRI website (*https://www.epa.gov/electronic-reporting-air-emissions/compliance-and-emissions-data-reporting-interface-cedri*) for this subpart. The report must be submitted by the deadline specified in this subpart, regardless of the method in which the report is submitted. If you claim some of the information required to be submitted via CEDRI is confidential business information (CBI), submit a complete report, including information claimed to be CBI, to the EPA. The report must be generated using the appropriate form on the CEDRI website. Submit the file on a compact disc, flash drive, or other commonly used electronic storage medium and clearly mark the medium as CBI. Mail the electronic medium to U.S. EPA/OAQPS/CORE CBI Office, Attention: Group Leader, Measurement Policy Group, MD C404-02, 4930 Old Page Rd., Durham, NC 27703. The same file with the CBI omitted must be submitted to the EPA via the EPA's CDX as described earlier in this paragraph.

(h) If you are required to electronically submit a report through CEDRI in the EPA's CDX, you may assert a claim of EPA system outage for failure to timely comply with the reporting requirement. To assert a claim of EPA system outage, you must meet the requirements outlined in paragraphs (h)(1) through (7) of this section.

(1) You must have been or will be precluded from accessing CEDRI and submitting a required report within the time prescribed due to an outage of either the EPA's CEDRI or CDX systems.

(2) The outage must have occurred within the period of time beginning five business days prior to the date that the submission is due.

(3) The outage may be planned or unplanned.

(4) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.

(5) You must provide to the Administrator a written description identifying:

(i) The date(s) and time(s) when CDX or CEDRI was accessed and the system was unavailable;

(ii) A rationale for attributing the delay in reporting beyond the regulatory deadline to EPA system outage;

(iii) Measures taken or to be taken to minimize the delay in reporting; and

(iv) The date by which you propose to report, or if you have already met the reporting requirement at the time of the notification, the date you reported.

(6) The decision to accept the claim of EPA system outage and allow an extension to the reporting deadline is solely within the discretion of the Administrator.

(7) In any circumstance, the report must be submitted electronically as soon as possible after the outage is resolved.

(i) If you are required to electronically submit a report through CEDRI in the EPA's CDX, you may assert a claim of force majeure for failure to timely comply with the reporting requirement. To assert a claim of force majeure, you must meet the requirements outlined in paragraphs (i)(1) through (5) of this section.

(1) You may submit a claim if a force majeure event is about to occur, occurs, or has occurred or there are lingering effects from such an event within the period of time beginning five business days prior to the date the submission is due. For the purposes of this section, a force majeure event is defined as an event that will be or has been caused by circumstances beyond the control of the affected facility, its contractors, or any entity controlled by the affected facility that prevents you from complying with the requirement to submit a report electronically within the time period prescribed. Examples of such events are acts of nature (*e.g.*, hurricanes, earthquakes, or floods), acts of war or terrorism, or equipment failure or safety hazard beyond the control of the affected facility (e.g., large scale power outage).

(2) You must submit notification to the Administrator in writing as soon as possible following the date you first knew, or through due diligence should have known, that the event may cause or has caused a delay in reporting.

(3) You must provide to the Administrator:

(i) A written description of the force majeure event;

(ii) A rationale for attributing the delay in reporting beyond the regulatory deadline to the force majeure event;

(iii) Measures taken or to be taken to minimize the delay in reporting; and

(iv) The date by which you propose to report, or if you have already met the reporting requirement at the time of the notification, the date you reported.

(4) The decision to accept the claim of force majeure and allow an extension to the reporting deadline is solely within the discretion of the Administrator.

(5) In any circumstance, the reporting must occur as soon as possible after the force majeure event occurs.

9. Section 63.9355 is amended by revising paragraph (a) introductory text and paragraph (a)(3) and adding paragraphs (a)(6) through (8) to read as follows:

§63.9355 What records must I keep?

(a) You must keep the records as described in paragraphs (a)(1) through (5) of this section. After **[DATE OF PUBLICATION OF FINAL RULE IN FEDERAL REGISTER]**, you must also keep the records as described in paragraphs (a)(6) through (8) of this section.

* * * * *

(3) Records of the occurrence and duration of each malfunction of the air pollution control equipment, if applicable, as required in §63.9355.

* * * * *

(6) In the event that an affected unit fails to meet an applicable standard, record the number of failures. For each failure record the date, time and duration of each failure.

(7) For each failure to meet an applicable standard, record and retain a list of the affected sources or equipment, an estimate of the quantity of each regulated pollutant emitted over any emission limit, and a description of the method used to estimate the emissions.

(8) Record actions taken to minimize emissions in accordance with §63.9305, and any corrective actions taken to return the affected unit to its normal or usual manner of operation.

* * * * *

10. Section 63.9360 is amended by adding paragraph (d) to read as follows;

§63.9360 In what form and how long must I keep my records?

* * * * *

(d) Any records required to be maintained by this part that are submitted electronically via the EPA's CEDRI may be maintained in electronic format. This ability to maintain electronic copies does not affect the requirement for facilities to make records, data, and reports available upon request to a delegated air agency or the EPA as part of an on-site compliance evaluation.

11. Section 63.9375 is amended by revising paragraph (3) under the definition for "*Deviation*" to read as follows:

§63.9375 What definitions apply to this subpart?

* * * * *

Deviation * * *

* * * * *

(3) Until **[DATE 180 DAYS AFTER DATE OF PUBLICATION OF FINAL RULE IN FEDERAL REGISTER]**, fails to meet any emission limitation or operating limit in this subpart during malfunction, regardless or whether or not such failure is permitted by this subpart.

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12. Table 3 to subpart PPPPP is amended by revising the entry for "1. The CO or THC outlet concentration emission limitation" to read as follows:

TABLE 3 TO SUBPART PPPPP OF PART 63—REQUIREMENTS FOR INITIAL COMPLIANCE DEMONSTRATIONS

As stated in §63.9321, you must demonstrate initial compliance with each emission limitation that applies to you according to the following table:

For each new or reconstructed affected source complying with . . .	**You must . . .**	**Using . . .**	**According to the following requirements . . .**
1. The CO or THC outlet concentration emission limitation.	a. Demonstrate CO or THC emissions are 20 ppmvd or less.	i. EPA Methods 3A and 10 of appendix A to 40 CFR part 60 for CO measurement or EPA Method 25A of appendix A to 40 CFR part 60 for THC measurement; or	You must demonstrate that the outlet concentration of CO or THC emissions from the test cell/stand or emission control device is 20 ppmvd or less, corrected to 15 percent O_2 content, using the average of the test runs in the performance test.
		ii. A CEMS for CO or THC and O_2 at the outlet of the engine test cell/stand or emission control device.	This demonstration is conducted immediately following a successful performance evaluation of the CEMS as required in §63.9320(b). The demonstration consists of the first 4-hour rolling average of measurements. The CO or THC concentration must be corrected to 15 percent O_2 content, dry basis using Equation 1 in §63.9320.
**	**	**	*

13. Table 4 of subpart PPPPP is revised to read as follows:

TABLE 4 TO SUBPART PPPPP OF PART 63—INITIAL COMPLIANCE WITH EMISSION LIMITATIONS

As stated in §63.9330, you must demonstrate initial compliance with each emission limitation that applies to you according to the following table:

For the . . .	You have demonstrated initial compliance if . . .
1. CO or THC concentration emission limitation	The first 4-hour rolling average CO or THC concentration is 20 ppmvd or less, corrected to 15 percent O_2 content if CEMS are installed or the average of the test run averages during the performance test is 20 ppmvd or less, corrected to 15 percent O_2 content.
2. CO or THC percent reduction emission limitation	The first 4-hour rolling average reduction in CO or THC is 96 percent or more, dry basis, corrected to 15 percent O_2 content.

14. Table 5 of subpart PPPPP is revised to read as follows:

TABLE 5 TO SUBPART PPPPP OF PART 63—CONTINUOUS COMPLIANCE WITH EMISSION LIMITATIONS

As stated in §63.9340, you must demonstrate continuous compliance with each emission limitation that applies to you according to the following table:

For the . . .	You must . . .	By . . .
1. CO or THC concentration emission limitation.	a. Demonstrate CO or THC emissions are 20 ppmvd or less over each 4-hour rolling averaging period.	i. Collecting the CPMS data according to §63.9306(a), reducing the measurements to 1-hour averages used to calculate the 3-hr block average; or ii. Collecting the CEMS data according to §63.9307(a), reducing the measurements to 1-hour averages, correcting them to 15 percent O_2 content, dry basis, according to

		§63.9320;
2. CO or THC percent reduction emission limitation.	a. Demonstrate a reduction in CO or THC of 96 percent or more over each 4-hour rolling averaging period.	i. Collecting the CPMS data according to §63.9306(a), reducing the measurements to 1-hour averages; or ii. Collecting the CEMS data according to §63.9307(b), reducing the measurements to 1-hour averages, correcting them to 15 percent O_2 content, dry basis, calculating the CO or THC percent reduction according to §63.9320.

15. Table 7 of subpart PPPPP is revised to read as follows:

TABLE 7 TO SUBPART PPPPP OF PART 63—APPLICABILITY OF GENERAL PROVISIONS TO SUBPART PPPPP

As stated in 63.9365, you must comply with the General Provisions in §§63.1 through 63.15 that apply to you according to the following table:

Citation	Subject	Applicable to subpart PPPPP	Explanation
§63.1(a)(1)-(12)	General Applicability	Yes.	
§63.1(b)(1)-(3)	Initial Applicability Determination	Yes.	Applicability to subpart PPPPP is also specified in §63.9285
§63.1(c)(1)	Applicability After Standard Established	Yes.	
§63.1(c)(2)	Applicability of Permit Program for Area Sources	No.	Area sources are not subject to subpart PPPPP
§63.1(c)(5)	Notifications	Yes.	
§63.1(d)	[Reserved}		
§63.1(e)	Applicability of Permit Program Before Relevant Standard is Set	Yes.	

§63.2	Definitions	Yes.	Additional definitions are specified in §63.9375
§63.3	Units and Abbreviations	Yes.	
§63.4	Prohibited Activities and Circumvention	Yes.	
§63.5(a)	Construction/Reconstruction	Yes.	
§63.5(b)	Requirements for Existing, Newly Constructed, and Reconstruction Sources	Yes.	
§63.5(d)	Application for Approval of Construction/Reconstruction	Yes.	
§63.5(e)	Approval of Construction/Reconstruction	Yes.	
§63.5(f)	Approval of Construction/Reconstruction based on Prior State Review	Yes.	
§63.6(a)	Compliance With Standards and Maintenance Requirements-Applicability	Yes.	
§63.6(b)(1)-(7)	Compliance Dates for New and Reconstructed Sources	Yes.	§63.9295 specifies the compliance dates
§63.6(c)(1)-(2)	Compliance Dates for Existing Sources	No.	Subpart PPPPP does not establish standards for existing sources
§63.6(c)(5)	Compliance Dates for Existing Sources	Yes.	§63.9295(b) specifies the compliance date if a new or reconstructed area source becomes a major source.
§63.6(e)(1)(i)	Operation and Maintenance	No.	See §63.9305 for general duty requirement.
§63.6(e)(1)(ii)	Operation and Maintenance	No.	
§63.6(e)(1)(iii)	Operation and Maintenance	Yes.	
§63.6(e)(3)	SSM Plan	No.	
§63.6(f)(1)	Compliance Except During Startup, Shutdown, and Malfunction	No.	
§63.6(f)(2)-(3)	Methods for Determining Compliance	Yes.	

§63.6(g)(1)-(3)	Use of Alternative Standards	Yes.	
§63.6(h)	Compliance With Opacity/Visible Emission Standards	No.	Subpart PPPPP does not establish opacity standards and does require continuous opacity monitoring systems (COMS).
§63.6(i)(1)-(16)	Extension of Compliance	No.	Compliance extension provisions apply to existing sources which do not have emission limitations in subpart PPPPP.
§63.6(j)	Presidential Compliance Exemption	Yes.	
§63.7(a)(1)-(2)	Performance Test Dates	Yes.	
§63.7(a)(3)	Performance Test Required By the Administrator	Yes.	
§63.7(b)-(d)	Performance Test Requirements-Notification, Quality Assurance, Facilities Necessary for Safe Testing, Conditions During Testing	Yes.	
§63.7(e)(1)	Conditions for Conducting Performance Tests	No.	
§63.7(e)(2)-(4)	Conduct of Performance Tests	Yes.	
§63.7(f)	Alternative Test Methods	Yes.	
§63.7(g)-(h)	Performance Testing Requirements-Data Analysis, Recordkeeping, Reporting, Waiver of Test	Yes.	
§63.8(a)(1)-(2)	Monitoring Requirements - Applicability	Yes.	Subpart PPPPP contains specific requirement for monitoring at §63.9325.
§63.8(a)(4)	Additional Monitoring Requirements	No.	Subpart PPPPP does not have monitoring requirement for flares.
§63.8(b)	Conduct of Monitoring	Yes.	
§63.8(c)(1)	Continuous Monitoring System (CMS) Operation and Maintenance	Yes.	

§63.8(c)(1)(i)	General Duty to Minimize Emissions and CMS Operation	No.	
§63.8(c)(1)(ii)	Operation and Maintenance of CMS	Yes.	
§63.8(c)(1)(iii)	Requirement to Develop SSM Plan for CMS	No.	
§63.8(c)(2)-(3)	Monitoring System Installation	Yes.	
§63.8(c)(4)	CMS	No.	§63.9335(a) and (b) specifies the requirements
§63.8(c)(5)	COMS	No.	Subpart PPPPP does not have opacity or VE standards.
§63.8(c)(6)-(8)	CMS Requirements	Yes.	Except that subpart PPPPP does not require COMS.
§63.8(d)-(e)	CMS Quality Control and CMS Performance	Yes.	Except for §63.8(e)(5)(ii) which applies to COMS.
§63.8(f)(1)-(5)	Alternative Monitoring Method	Yes.	
§63.8(f)(6)	Alternative to Relative Accuracy Test	Yes.	
§63.8(g)	Data Reduction	No.	§§63.9335 and 63.9340 specify monitoring data reduction.
§63.9(a)-(b)	Notification Requirements	Yes.	
§63.9(c)	Request for Compliance Extension	No.	Compliance extension to not apply to new or reconstructed sources.
§63.9(d)	Notification of Special Compliance Requirements for New Sources	Yes.	
§63.9(e)	Notification of Performance Test	No.	Subpart PPPPP does not require performance testing.
§63.9(f)	Notification of Opacity/VE test	No.	Subpart PPPPP does not have opacity/VE standards.
§63.9(g)(1)	Additional Notifications When Using CMS	Yes.	

§63.9(g)(2)	Additional Notifications When Using CMS	No.	Subpart PPPPP does not have opacity/VE standards.
§63.9(g)(3)	Additional Notifications When Using CMS	Yes.	
§63.9(h)	Notification of Compliance Status	Yes.	
§63.9(i)	Adjustment of Submittal Deadlines	Yes.	
§63.9(j)	Change in Previous Information	Yes.	
§63.10(a)	Recordkeeping/Reporting	Yes.	
§63.10(b)(1)	General Recordkeeping Requirements	Yes.	
§63.10(b)(2)(i)	Recordkeeping of Occurrence and Duration of Startups and Shutdowns	No.	
§63.10(b)(2)(ii)	Recordkeeping of Occurrence and Duration of Malfunctions	No.	See §63.9355 for recordkeeping of (1) date, time and duration; (2) listing of affected source or equipment, and an estimate of the quantity of each regulated pollutant emitted over the standard; and (3) actions to minimize emissions and correct the failure.
§63.10(b)(2)(iii)	Recordkeeping of Maintenance on Controls and Monitoring Equipment	Yes.	
§63.10(b)(2)(iv)-(v)	Actions Taken to Minimize Emissions During SSM	No.	
§63.10(b)(2)((vi)-(xi)	CMS Records	Yes.	
§63.10(b)(2)(xii)	Records	Yes.	
§63.10(b)(2)(xiii)	Records	Yes.	
§63.10(b)(2)(xiv)	Records	Yes.	
§63.10(b)(3)	Recordkeeping for Applicability Determinations	Yes.	
§63.10(c)(1)-(6), (9)-(14)	Additional Recordkeeping for CMS	Yes.	
§63.10(c)(7)-(8)	Records of Excess Emissions and Parameter Monitoring Exceedances	No.	Specific language is located at

	for CMS		§63.9355 of subpart PPPPP.
§63.10(c)(15)	Records Regarding the SSM Plan	No.	
§63.10(d)(1)	General Reporting Requirements	Yes.	
§63.10(d)(2)	Report of Performance Test Results	Yes.	
§63.10(d)(3)	Reporting of Opacity or VE Observations	No.	Subpart PPPPP does not have opacity/VE standards.
§63.10(d)(4)	Progress Reports for Sources with Compliance Extensions	No.	Compliance extensions do not apply to new or reconstructed sources.
§63.10(d)(5)	SSM Reports	No. See §63.9350 for malfunction reporting requirements.	
§63.10(e)(1) and (2)(i)	Additional CMS Reports	Yes.	
§63.10(e)(2)(ii)	Additional CMS Reports	No.	Subpart PPPPP does not require COMS.
§63.10(e)(3)	Excess Emissions/CMS Performance Reports	No.	Specific language in located in §63.9350 of subpart PPPPP.
§63.10(e)(4)	COMS Data Reports	No.	Subpart PPPPP does not require COMS.
§63.10(f)	Waiver for Recordkeeping/Reporting	Yes.	
§63.11	Control Device Requirements/Flares	No.	Subpart PPPPP does not specify use of flares for compliance.
§63.12	State Authority and Delegations	Yes.	
§63.13	Addresses	Yes.	
§63.14	Incorporation by Reference	Yes.	ASTM D 6522-00 and ANSI/ASME PTC 19.10-1981 (incorporated by reference-See §63.14).

§63.15	Availability of Information/Confidentiality	Yes.	

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