[6560-50-P]

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA-HQ-OAR-2003-0146; FRL-]

RIN 2060-AO55

National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: This action proposes amendments to the national emission standards for petroleum refineries to address the risk remaining after application of the 1995 standards. This action also provides the results of EPA's 8-year review of developments in practices, processes, and control technologies that have occurred since the time EPA adopted the emissions standards. Based on the results of the residual risk and technology review, this action proposes two options for both wastewater treatment systems and storage vessels. For wastewater treatment systems, the first option would not require any additional controls as necessary to address residual risk or under the technology review. The second option would require refineries to apply new or additional requirements for wastewater treatment systems. For storage vessels, the first option would also not require any additional controls as necessary to address residual risk or

under the technology review and the second option would require refineries to apply new or additional requirements for storage vessels. Finally, we are also proposing two options for amendments to add emissions standards for cooling towers.

DATES: Comments must be received on or before [INSERT DATE 60 DAYS FROM DATE OF PUBLICATION].

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2003-0146 (for petroleum refineries), by one of the following methods:

- www.regulations.gov: Follow the on-line instructions for submitting comments.
- E-mail: a-and-r-Docket@epa.gov.
- Fax: (202) 566-9744.
- Mail: U.S. Postal Service, send comments to: National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries: Residual Risk Standards Docket, Environmental Protection Agency, Air and Radiation Docket and Information Center, Mailcode: 2822T, 1200 Pennsylvania Avenue, NW, Washington, DC 20460. Please include a total of two copies. We request that a separate copy also be sent to the contact person identified below (see FOR FURTHER INFORMATION CONTACT).
- Hand Delivery: In person or by courier, deliver

comments to: EPA Docket and Information Center, Public Reading Room, EPA West Building, Room 3334, 1301 Constitution Avenue, NW, Washington, DC 20004. Such deliveries are accepted only during the Docket's normal hours of operation and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to Docket ID No. EPA-HQ-OAR-2003-0146. EPA's policy is that all comments received will be included in the public docket without change and may be made available online at www.regulations.gov, including any personal information provided, unless the comment includes information claimed to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through www.regulations.gov or e-mail. The www.regulations.gov website is an "anonymous access" system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through www.regulations.gov, your e-mail address will be automatically captured and included as part of the comment that is placed in the public docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the

body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the docket are listed in the www.regulations.gov index. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically in www.regulations.gov or in hard copy at the National Emission Standards for Hazardous Air Pollutants from Petroleum Refineries: Residual Risk Standards Docket, Environmental Protection Agency, EPA West Building, Room 3334, 1301 Constitution Ave., NW, Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the Air and Radiation Docket is (202) 566-1742.

FOR FURTHER INFORMATION CONTACT: Mr. Robert Lucas, Office of Air Quality Planning and Standards, Sector Policies and Programs

Division, Coatings and Chemicals Group (E143-01), Environmental Protection Agency, Research Triangle Park, North Carolina 27711, telephone number (919) 541-0884; fax number (919) 541-0246; e-mail address: lucas.bob@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this action apply to me?

The regulated category and entities affected by this proposed action include:

Category	NAICS[1] Code	Examples of Regulated Entities
Industry . . .	32411	Petroleum refineries located at a major source that are subject to 40 CFR part 63, subpart CC.

[1] North American Industrial Classification System.

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by the proposed rule. To determine whether your facility would be regulated by the proposed amendments, you should carefully examine the applicability criteria in 40 CFR 63.100 of subpart CC (National Emission Standards for Hazardous Air Pollutants From Petroleum Refineries). If you have any questions regarding the applicability of this action to a particular entity, contact either the air permit authority for the entity or your EPA regional representative as listed in 40 CFR 63.13 of subpart A (General Provisions).

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

Do not submit information containing CBI to EPA through www.regulations.gov or e-mail. Send or deliver information as CBI only to the following address: Roberto Morales, OAQPS Document Control Officer (C404-02), Office of Air Quality Planning and Standards, Environmental Protection Agency, Research Triangle Park, NC 27711, Attention Docket ID EPA-HQ-OAR-2003-0146 (for petroleum refineries). Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD ROM that you mail to EPA, mark the outside of the disk or CD ROM as CBI and then identify electronically within the disk or CD ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

C. Where can I get a copy of this document?

In addition to being available in the docket, an electronic copy of this proposed action will also be available on the Worldwide Web through the Technology Transfer Network (TTN). Following signature, a copy of this proposed action will be posted on the TTN's policy and guidance page for newly proposed

or promulgated rules at the following address: http://www.epa.gov/ttn/oarpg/. The TTN provides information and technology exchange in various areas of air pollution control.

D. When would a public hearing occur?

If anyone contacts EPA requesting to speak at a public hearing concerning the proposed amendments by [INSERT DATE 15 DAYS FROM DATE OF PUBLICATION], we will hold a public hearing on [INSERT DATE 30 DAYS FROM DATE OF PUBLICATION]. If you are interested in attending the public hearing, contact Bob Lucas at (919) 541-0884 to verify that a hearing will be held. If a public hearing is held, it will be held at 10 a.m. at the EPA's Environmental Research Center Auditorium, Research Triangle Park, NC, or an alternate site nearby.

E. How is this document organized?

II. Background Information

A. What is the statutory authority for regulating hazardous air pollutants?

Section 112 of the Clean Air Act (CAA) establishes a two-stage regulatory process to address emissions of hazardous air pollutants (HAP) from stationary sources. In the first stage, after EPA has identified categories of sources emitting one or more of the HAP listed in section 112(b) of the CAA, section

112(d) calls for us to promulgate national emission standards for hazardous air pollutants (NESHAP) for those sources. For "major sources" that emit or have the potential to emit any single HAP at a rate of 10 tons or more per year or any combination of HAP at a rate of 25 tons or more per year, these technology-based standards must reflect the maximum reductions of HAP achievable (after considering cost, energy requirements, and non-air quality health and environmental impacts) and are commonly referred to as maximum achievable control technology (MACT) standards.

The MACT floor is the minimum control level allowed for NESHAP and is defined under section 112(d)(3) of the CAA. For new sources, the MACT floor cannot be less stringent than the emission control that is achieved in practice by the best-controlled similar source. The MACT standards for existing sources can be less stringent than standards for new sources, but they cannot be less stringent than the average emission limitation achieved by the best-performing 12 percent of existing sources in the category or subcategory (or the best-performing five sources for categories or subcategories with fewer than 30 sources). In developing MACT, we must also consider control options that are more stringent than the floor. We may establish standards more stringent than the floor based on the consideration of the cost of achieving the emissions

reductions, any non-air quality health and environmental impacts, and energy requirements. We published the final MACT standards for petroleum refineries (40 CFR part 63, subpart CC) on August 18, 1995 (60 FR 43620).

The EPA is then required to review these technology-based standards and to revise them "as necessary (taking into account developments in practices, processes, and control technologies)" no less frequently than every 8 years, under CAA section 112(d)(6). In this proposal, we are publishing the results of our 8-year review for the petroleum refineries source category. We are required by a consent decree to propose the results of our CAA section 112(d)(6) review by August 21, 2007. The consent decree also requires EPA to consider and address the application of the NESHAP general provisions in 40 CFR part 63, subpart A to the existing rule.

The second stage in standard-setting focuses on reducing any remaining "residual" risk according to CAA section 112(f). This provision requires, first, that EPA prepare a Report to Congress discussing (among other things) methods of calculating risk posed (or potentially posed) by sources after implementation of the MACT standards, the public health significance of those risks, the means and costs of controlling them, actual health effects to persons in proximity of emitting sources, and recommendations as to legislation regarding such

remaining risk. EPA prepared and submitted this report (Residual Risk Report to Congress, EPA-453/R-99-001) in March 1999. Congress did not act in response to the report, thereby triggering EPA's obligation under CAA section 112(f)(2) to analyze and address residual risk.

CAA Section 112(f)(2) requires us to determine for source categories subject to certain section 112(d) standards whether the emissions limitations protect public health with an ample margin of safety. If the MACT standards for HAP "classified as a known, probable, or possible human carcinogen do not reduce lifetime excess cancer risks to the individual most exposed to emissions from a source in the category or subcategory to less than 1-in-1 million," EPA must promulgate residual risk standards for the source category (or subcategory) as necessary to provide an ample margin of safety to protect public health. The EPA must also adopt more stringent standards if necessary to prevent an adverse environmental effect (defined in CAA section 112(a)(7) as any significant and widespread adverse effect * * * to wildlife, aquatic life, or natural resources * * *), but must consider cost, energy, safety, and other relevant factors in doing so. Section 112(f)(2) of the CAA expressly preserves our use of a two-step process for developing standards to address any residual risk and our interpretation of "ample margin of safety" developed in the National Emission 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 first step in this process is the determination of acceptable risk. The second step provides for an ample margin of safety to protect public health, which is the level at which the standards are set (unless a more stringent standard is required to prevent an adverse environmental effect after the consideration of costs, energy, safety, and other relevant factors).

The terms "individual most exposed," "acceptable level," and "ample margin of safety" are not specifically defined in the CAA. However, CAA section 112(f)(2)(B) directs us to use the interpretation set out in the Benzene NESHAP. See also, A Legislative History of the Clean Air Act Amendments of 1990, volume 1, p. 877 (Senate debate on Conference Report). We notified Congress in the Residual Risk Report to Congress that we intended to use the Benzene NESHAP approach in making CAA section 112(f) residual risk determinations (EPA-453/R-99-001, p. ES-11).

In the Benzene NESHAP, we stated as an overall objective:

> . . . in protecting public health with an ample margin of safety, we strive to provide maximum feasible protection against risks to health from hazardous air

> pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately 1-in-1 million; and (2) limiting to no higher than approximately 1-in-10 thousand [i.e., 100-in-1 million] the estimated risk that a person living near a facility would have if he or she were exposed to the maximum pollutant concentrations for 70 years.

The Agency also stated that, "The EPA also considers incidence (the number of persons estimated to suffer cancer or other serious health effects as a result of exposure to a pollutant) to be an important measure of the health risk to the exposed population. Incidence measures the extent of health risk to the exposed population as a whole, by providing an estimate of the occurrence of cancer or other serious health effects in the exposed population." The Agency went on to conclude that "estimated incidence would be weighed along with other health risk information in judging acceptability."[1] As explained more fully in our Residual Risk Report to Congress, EPA does not define "rigid line[s] of acceptability," but considers rather broad objectives to be weighed with a series of other health

[1] In the Benzene NESHAP decision, the Agency considered the same risk measures in the "acceptability" analysis as in the "margin of safety" analysis, stating: "In the ample margin decision, 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 costs and economic impacts of controls, technological feasibility, uncertainties, and any other relevant factors. Considering all of these factors, the Agency will establish the standard at a level that provides an ample margin of safety to protect the public health, as required by section 112."

measures and factors (EPA-453/R-99-001, p. ES-11).

The determination of what represents an "acceptable" risk is based on a judgment of "what risks are acceptable in the world in which we live" (54 FR 38045, quoting the Vinyl Chloride decision at 824 F.2d 1165) recognizing that our world is not risk-free.

In the Benzene NESHAP, we stated that "EPA will generally presume that if the risk to [the maximum exposed] individual is no higher than approximately 1-in-10 thousand, that risk level is considered acceptable." We discussed the maximum individual lifetime cancer risk as being "the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years." We explained that this measure of risk "is an estimate of the upper bound of risk based on conservative assumptions, such as continuous exposure for 24 hours per day for 70 years." We acknowledge that maximum individual lifetime cancer risk "does not necessarily reflect the true risk, but displays a conservative risk level which is an upper bound that is unlikely to be exceeded."

Understanding that there are both benefits and limitations to using maximum individual lifetime cancer risk as a metric for determining acceptability, we acknowledged in the 1989 Benzene NESHAP that "consideration of maximum individual risk . . . must

take into account the strengths and weaknesses of this measure of risk." Consequently, the presumptive risk level of 100-in-1 million (1-in-10 thousand) provides a benchmark for judging the acceptability of maximum individual lifetime cancer risk, but does not constitute a rigid line for making that determination.

The Agency also explained in the 1989 Benzene NESHAP the following: "In establishing a presumption for MIR, rather than rigid line for acceptability, the Agency intends to weigh it with a series of other health measures and factors. These include the overall incidence of cancer or other serious health effects within the exposed population, the numbers of persons exposed within each individual lifetime risk range and associated incidence within, typically, a 50 km exposure radius around facilities, the science policy assumptions and estimation uncertainties associated with the risk measures, weight of the scientific evidence for human health effects, other quantified or unquantified health effects, effects due to co-location of facilities, and co-emission of pollutants."

In some cases, these health measures and factors taken together may provide a more realistic description of the magnitude of risk in the exposed population than that provided by maximum individual lifetime cancer risk alone.

B. What source category is affected by this action?

Petroleum refineries are facilities engaged in refining and

producing products made from crude oil or unfinished petroleum derivatives. Based on the Energy Information Administration's Refinery Capacity Report 2006, there are 150 operable petroleum refineries in the United States (U.S.) and the U.S. territories. A few of these 150 refineries have integrated operations between two nearby, but non-contiguous, locations. Therefore, we have identified and have data on 153 distinct petroleum refinery facilities (according to the definition of facility in the CAA), all of which are major sources of HAP emissions. Petroleum refineries are located in 35 States, as well as Puerto Rico and the U.S. Virgin Islands. Texas, Louisiana, and California are the States with the most petroleum refining capacity. The permitting process has begun for construction of a new refinery in Arizona; this is the only newly constructed refinery anticipated over the next 5 years. However, a few additional refineries have announced significant expansion or modification projects that will essentially double their refining capacity.

EPA listed two separate Petroleum Refinery source categories for regulation under CAA section 112(d), both of which include any facility engaged in producing gasoline, naphtha, kerosene, jet fuels, distillate fuel oils, residual fuel oils, lubricants, or other products from crude oil or unfinished petroleum derivatives. The first and primary source category for which regulations were developed, Petroleum

Refineries - Other Sources Not Distinctly Listed (Refinery MACT 1), includes all emission sources from petroleum refinery process units except those that were expected to be regulated elsewhere, such as the NESHAP for Boilers and Process Heaters (40 CFR part 63 subpart DDDDD). Refinery process units include, but are not limited to: crude distillation, vacuum distillation, thermal cracking, catalytic cracking, catalytic reforming, hydrotreating, hydrorefining, isomerization, polymerization, lube oil processing, and hydrogen production. The Refinery MACT 1 rule specifically excludes three types of process vents: catalytic cracking unit catalyst regeneration vents, catalytic reforming unit catalyst regeneration vents, and sulfur plant vents. These specific vents are regulated by the NESHAP for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units (Refinery MACT 2) in 40 CFR part 63, subpart UUU. It is important to note that equipment leaks and wastewater produced from catalytic cracking units, catalytic reforming units, and sulfur recovery units are subject to Refinery MACT 1; only the process vent emissions associated with these units are subject to Refinery MACT 2.

C. What are the emissions sources at petroleum refineries?

The emissions sources subject to the Refinery MACT 1 rule include miscellaneous process vents, storage vessels, wastewater

streams, and equipment leaks associated with petroleum refining process units, as well as gasoline loading racks and marine tank vessel loading operations located at a petroleum refinery. Storage vessels and equipment leaks associated with a bulk gasoline terminal or pipeline breakout station located at a petroleum refinery and under common control of the refinery are also subject to Refinery MACT 1. Cooling towers associated with petroleum refining process units are part of the MACT 1 source category although no specific emission limitations were established for cooling towers in the original Refinery MACT 1 rule. Thus, there are seven general types of emission sources under Refinery MACT 1: miscellaneous process vents, storage vessels, wastewater streams, equipment leaks, gasoline loading racks, marine tank vessel loading operations, and cooling towers. Each of these emission sources are described briefly in sections II.C.1 through II.C.7 of this preamble.

1. Miscellaneous Process Vents

Many unit operations at petroleum refineries generate gaseous streams that contain HAP. These streams may be routed to other unit operations for additional processing (i.e., a gas stream from a reactor that is routed to a distillation unit for separation) or they may be sent to a blowdown system or vented to the atmosphere. Miscellaneous process vents emit gases to the atmosphere, either directly or after passing through

recovery and/or control devices.

2. Storage Vessels

Storage vessels contain crude oil, intermediate products, and finished products. Different types of vessels are used to store various types of products. Gases are stored in pressurized vessels that are not vented to the atmosphere during normal operations while liquids are stored in horizontal, fixed roof, or floating roof tanks, depending on properties and volumes to be stored. Liquids with vapor pressures greater than 11 pounds per square inch of air (psia) are typically stored in fixed roof tanks that are vented to a control device. Volatile liquids with vapor pressures up to 11 psia are usually stored in floating roof tanks because such vessels have lower emission rates than fixed roof tanks within this vapor pressure range. Emissions from storage vessels typically occur as working losses. As a storage vessel is filled, HAP-laden vapors inside the tank become displaced and can be emitted to the atmosphere. Also, diurnal temperature changes result in breathing losses of organic HAP-laden vapors from storage vessels.

3. Wastewater Streams

Many refinery process units generate wastewater streams that contain HAP. Significant wastewater sources include the crude desalting unit, process waters, steam stripper blowdown, and storage tank draws. Organic HAP compounds in the wastewater

can volatilize and be emitted to the atmosphere from wastewater collection and treatment units if these units are open or vented to the atmosphere. Potential sources of HAP emissions associated with wastewater collection and treatment systems include drains, manholes, trenches, surface impoundments, oil/water separators, storage and treatment tanks, junction boxes, sumps, basins, and biological treatment systems.

4. Equipment Leaks

Equipment leaks are releases of process fluid or vapor from processing equipment, including pump and compressor seals, process valves, pressure relief devices, open-ended lines, flanges and other connectors, agitators, and instrumentation systems. These releases occur primarily at the interface between connected components of equipment or in sealing mechanisms.

5. Gasoline Loading Racks

Loading racks are the collection of equipment, including loading arms, pumps, meters, shutoff valves, relief valves, and other piping and valves used to fill gasoline cargo tanks. Emissions from loading racks may be released when gasoline loaded into cargo tanks displaces vapors inside these containers.

6. Marine Vessel Loading Operations

Marine vessel loading operations load and unload liquid

commodities in bulk, such as crude oil, gasoline and other fuels, and naphtha. The cargo is pumped from the terminal's large, above-ground storage tanks through a network of pipes and into a storage compartment (tank) on the vessel. The HAP emission result from the displaced vapors during the filling operation.

7. Cooling Towers

Cooling tower systems include closed loop recirculation systems and once through systems that receive non-contact process water from a heat exchanger for the purposes of cooling the process water prior to returning the water to the heat exchanger or discharging the water to another process unit, waste management unit, or to a receiving water body. Cooling towers typically use force draft air ventilation of the process water to cool the process water. Heat exchangers occasionally develop leaks which result in process fluids entering the cooling tower process water. The HAP and other organics in these process fluids are then emitted to the atmosphere due to stripping in the cooling tower. Cooling tower emissions arising from the addition of chemicals to the cooling water to prevent fouling or to decontaminate the water are not covered by this standard, but are instead covered under the Industrial Process Cooling Tower NESHAP.

D. What hazardous air pollutants are emitted from petroleum

refineries?

The specific HAP emitted by petroleum refineries varies by facility and process operations but can include a variety of organic and inorganic compounds and metals. Emissions originate from various process vents, storage vessels, wastewater streams, loading racks, marine tank vessel loading operations, and equipment leaks associated with refining facilities. Process vents, wastewater streams, and storage vessels generally emit organic HAP. Organic compounds account for the majority of the total mass of HAP emitted by petroleum refinery sources, with toluene, hexane, mixed and individual isomers of xylenes, benzene, methanol, methyl tert-butyl ether, and ethyl benzene accounting for about 90 percent of the HAP mass emitted. Other HAP emissions may include biphenyl, 1,3-butadiene, cumene, carbon disulfide, carbonyl sulfide, cresols, ethylene dibromide, 1,2 dichloroethane, diethanolamine, ethylene glycol, methyl isobutyl ketone, 2,2,4-trimethylpentane, naphthalene, and phenol.

The HAP emitted from emissions sources subject to the Refinery MACT 1 rule are associated with a variety of health effects, depending on the specific pollutants involved and the degree and duration of exposure. The range of adverse health effects include cancer and a number of other chronic health disorders (e.g., aplastic anemia, panctopenia, pernicious

anemia, lung structural changes) and a number of acute health disorders (difficulty in breathing, upper respiratory tract irritation, conjunctivitis, tremors, delirium, coma, convulsions). More details on the health effects of individual HAP may be found in numerous sources, including www.epa.gov/iris.html, www.atsdr.cdc.govlmrls.html, and www.oehha.ca.gov/air/acute_rels/index.html.

E. What does the NESHAP require?

The Refinery MACT 1 rule (40 CFR part 63, subpart CC) applies to petroleum refining process units and their collocated emissions points that are part of a plant site that is a major source and that emit or have equipment containing or contacting one or more of the 28 HAP listed in Table 1 in the appendix to the rule. Section 63.640(c) of the rule specifies that emissions points subject to the rule include an individual miscellaneous process vent, storage vessel, wastewater stream, or equipment leak associated with a petroleum refining process unit; an individual storage vessel or equipment leak associated with a bulk gasoline terminal or pipeline breakout station classified under Standard Industrial Classification (SIC) code 2911 located at a petroleum refinery; a gasoline loading rack classified under SIC code 2911 located at a petroleum refinery and under common control with the refinery; or a marine tank vessel loading operation located at a petroleum refinery. The

rule establishes applicability criteria to distinguish between Group 1 emissions points and Group 2 emissions points. Controls are required only for emissions points meeting the Group 1 criteria. Group 2 emissions points are subject to recordkeeping requirements only. We estimate that the 1995 rule reduces HAP emissions by 53,000 tons per year (tpy) – a 59 percent reduction (60 FR 43248, August 18, 1995).

Section 63.641 of the rule defines Group 1 miscellaneous process vents as those with volatile organic compound (VOC) emissions equal to or greater than 33 kilograms per day (kg/day) (72 pounds per day (lb/day)) for existing sources and 6.8 kg/day (15 lb/day) for new sources. Under §63.643, the owner or operator of a Group 1 miscellaneous process vent must reduce organic HAP using a flare that meets the equipment specifications in 40 CFR 63.11 of the general provisions (subpart A) or use a control device to reduce organic HAP emissions by 98 weight-percent or to a concentration of 20 parts per million by volume (ppmv dry basis, corrected to 3 percent oxygen).

Section 63.646(a) of the Refinery MACT 1 rule requires each Group 1 storage vessel to comply with 40 CFR 63.119 through 63.121 of subpart G (National Emission Standards for Organic Hazardous Air Pollutants From the Synthetic Organic Chemical Manufacturing Industry for Process Vents, Storage Vessels,

Transfer Operations, and Wastewater). A Group 1 storage vessel at an existing refinery has a design storage capacity and maximum true vapor pressure greater than the values specified in the existing rule. Under 40 CFR 63.119, a Group 1 storage vessel must be equipped with an internal floating roof with proper seals, an external floating roof with proper seals, an external floating roof converted to an internal floating roof with proper seals, or a closed vent system to a control device that reduces HAP emissions by 95 percent or to 20 ppmv. Storage vessels at existing sources are not subject to certain equipment specifications and inspection requirements for automatic bleeder vents, gaskets, slotted membranes, and sleeve seals. See 40 CFR 63.640(c). The requirements for a Group 1 storage vessel at a new refinery apply to tanks with a smaller design capacity and lower vapor pressures and HAP liquid concentration. These tanks also must comply with the storage vessel requirements in 40 CFR part 63, subpart G.

Each Group 1 wastewater stream at a new or existing refinery must comply with 40 CFR 61.340 through 61.355 of the National Emission Standard for Benzene Waste Operations (BWON) in 40 CFR part 61, subpart FF. Group 1 wastewater streams are those wastewater streams (at a petroleum refinery that has a total annual benzene loading of 10 megagrams per year (Mg/yr) or greater) that have a flow rate greater than 0.02 liters per

minute, a benzene concentration of 10 parts per million by weight (ppmw) or greater, and are not exempt from control requirements under the BWON. The BWON requires affected waste streams to comply with one of several options for controlling benzene emissions from waste management units and treating the benzene containing wastes.

The Refinery MACT 1 rule requires the owner or operator of an existing refinery to comply with the equipment leak provisions in 40 CFR part 60, subpart VV (Standards of Performance for Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry) for all equipment in organic HAP service. The term "in organic HAP service" means that a piece of equipment either contains or contacts a fluid (liquid or gas) that is at least 5 percent by weight of total organic HAP. The owner or operator of a new facility must comply with a modified version of 40 CFR part 63, subpart H (National Emission Standards for Organic Hazardous Air Pollutants for Equipment Leaks). Both subpart VV of part 60 and modified subpart H of part 63 require inspection and repair of leaking equipment. The leak definition under subpart VV that triggers repair requirements is an instrument reading of 10,000 ppmv. In the modified version of subpart H, the leak definition for pumps and valves begins at 10,000 ppmv but drops to 2,000 ppmv or 1,000 ppmv, respectively, in subsequent years.

Group 1 gasoline loading racks at refineries must comply with the requirements of the National Emission Standards for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations) in 40 CFR part 63, subpart R. Marine tank vessel loading operations at refineries must comply with the requirements in 40 CFR part 63, subpart Y (National Emission Standards for Marine Tank Vessel Loading Operations).

III. Summary of Proposed Amendments to NESHAP for Petroleum Refineries

A. What options are we proposing?

We are proposing regulatory options for storage vessels with external floating roofs and regulatory options for an enhanced biodegradation unit (EBU) to meet the requirements of CAA sections 112(f)(2) and (d)(6). We are also proposing options to require a leak detection and repair program for cooling towers under section 112(d)(2) and (f)(2).

A detailed summary of the proposed amendments under the requirements of CAA section 112(f)(2) and (d)(6) is provided below. This section also includes our discussion of the proposal to regulate cooling towers under CAA section 112(d)(2) and (f)(2). Our rationale for the proposed amendments is provided in section IV of this preamble.

B. What are the proposed requirements to meet CAA sections 112(f)(2) and (d)(6) for storage vessels?

Currently, the Refinery MACT 1 rule requires Group 1 storage vessels at an existing source to comply with the requirements in 40 CFR 63.119 through 63.121 of 40 CFR part 63, subpart G, except where specifically noted. Under 40 CFR 63.640(c) of the rule, storage vessels at existing sources are not subject to the requirements in 40 CFR 63.119(b)(5), (b)(6), (c)(2), and (d)(2) of subpart G. The requirements in 40 CFR 63.119(c)(2) contain equipment specifications for storage tanks with external floating roofs.

EPA is proposing two regulatory options for storage vessels. We believe that either of these options might achieve an ample margin of safety as described in the Benzene NESHAP. The Agency's basis for selecting one of these options in the final rule would reflect our consideration of the relative risk reduction and cost of the options, as well as consideration of other relevant factors as identified in the Benzene NESHAP. For existing storage vessels, Option 1 requires no revisions to the Refinery MACT 1 rule to meet the requirements of CAA section 112(d)(6) and (f)(2). Option 2 would remove the current exemption for the requirements in 40 CFR 63.119(c)(2)(ix) and (x) for slotted guide poles. Removal of this exemption would require the owner or operator of a Group 1 storage vessel at an existing source that is equipped with an external floating roof to equip each slotted guide pole with a gasketed sliding cover

or flexible fabric sleeve seal and a gasketed cover or other device which closes off the liquid surface from the atmosphere. The proposed amendments also revise related inspection requirements in 40 CFR 63.646(e) and reporting requirements in 40 CFR 63.654(f)(1)(A)(1), (g)(1), and (g)(3)(iii)(A) to account for the requirements for slotted guide poles.

C. What are the proposed requirements to meet CAA sections 112(f)(2) and (d)(6) for EBU used to treat Group 1 wastewater streams?

EPA is proposing two regulatory options for EBU. We believe that either of these options might achieve an ample margin of safety as described in the Benzene NESHAP. The Agency's basis for selecting one of these options in the final rule would reflect our consideration of the relative risk reduction and cost of the options, as well as consideration of other relevant factors as identified in the Benzene NESHAP.

Option 1 requires no revisions to the Refinery MACT 1 rule to meet the requirements of CAA sections 112(f)(2) and (d)(6). Option 2 for EBU proposes to revise the wastewater provisions in the Refinery MACT 1 rule to add a specific performance standard and monitoring requirement for EBU. The proposed amendments require owners or operators to operate and maintain EBU to achieve a minimum treatment efficiency for benzene of 90 percent. The owner or operator would be required to conduct an

initial performance demonstration using the procedures in 40 CFR part 63, appendix C (Determination of the Fraction Biodegraded (F_{bio}) in a Biological Treatment Unit). Based on the demonstration results, facilities would establish operating limits for the mixed liquor volatile suspended solids (MLVSS) concentration and the food-to-microorganism ratio according to the rule requirements. The operating parameters would be monitored at least once a week. Exceedance of an operating limit would be a deviation that must be reported in the periodic (semiannual) report required by 40 CFR 63.654.

D. What are the proposed requirements for cooling towers under CAA sections 112(d)(2) and (f)(2)?

Because the Refinery MACT 1 rule does not address HAP emissions from cooling towers, we are proposing to regulate cooling towers under CAA section 112(d)(2) and (d)(3) in this action. As we are proposing later in the preamble, once cooling towers have been regulated pursuant to CAA section (d)(2) and (d)(3), no additional controls are needed to provide an adequate margin of safety under CAA section (f)(2).

We are proposing work practice standards for cooling towers which would require the owner or operator of a new or existing source to monitor for leaks in the cooling tower return lines from heat exchangers in organic HAP service (i.e., lines that contain or contact fluids with 5 weight percent or greater of

total organic HAP listed in Table 1 of the rule) and, where leaks are detected, to repair such leaks within a specified period of time. The two options that are being co-proposed differ in the detection methods used to identify leaks for existing sources, and in the frequency of monitoring for new sources. The first option reflects our MACT floor analysis and would reject imposing controls beyond the MACT floor. Under this option, the owner or operator of existing source cooling towers receiving cooling water from heat exchangers in organic HAP service would be required to monitor chemical addition rates or other surrogate indicators of leaks. If the surrogate indicators suggest a leak, the owner or operator would conduct sampling and analyses to determine if the indicated leak is an organic HAP leak. For existing sources, an organic HAP leak is defined as an organic HAP concentration in the cooling tower water of 1 ppmw or greater. Owner and operators of new source cooling towers receiving cooling water from heat exchangers in organic HAP service would be required to conduct quarterly sampling and analyses to identify any organic HAP leaks into the cooling tower water and to take appropriate corrective action to fix the leaks.

Under the second option, we would select a control option based on our beyond the floor analysis and would require the owner or operator of new and existing sources to conduct monthly

sampling and analyses to identify any organic HAP leaks into the cooling tower water.

Under both options, a leak into the cooling tower water would be defined as either a mass leak rate of 100 pounds of total organic HAP per day or greater or a mass leak rate of 10 pounds of any single organic HAP per day or greater. Under both options, if a leak is detected, the owner or operator would be required to identify the source of the leak as soon as practicable but not later than 30 days after receiving the sampling results. Unless a delay in repair is allowed under the proposed requirements, the owner or operator would be required to repair the leak no later than 30 days after identifying the source of the leak. The proposed rule would allow a delay in repair of the leak if repair of the leak would require the process unit served by the leaking heat exchanger to be shut down, and the shutdown would result in greater emissions than the potential emissions from the cooling tower leak from the time the leaking heat exchanger was first identified and the next planned shutdown. The owner or operator would be required to continue monthly monitoring and repair the heat exchanger within 30 days if sampling results show that the projected emissions from the cooling tower exceed the startup and shutdown emissions estimates. The proposed rule would also allow a delay in repair if the necessary parts are not reasonably available.

In this case, the owner or operator would be required to complete the repair as soon as practicable upon receiving the necessary parts, but no later than 120 days after identifying the leaking heat exchanger. All new or existing refineries with a cooling tower system also would be required to prepare and follow a monitoring plan for cooling towers. The plan is necessary to document emissions potential for employing the delay of repair provisions.

E. What other revisions are we proposing?

We are also proposing clarifications to the requirements in the Refinery MACT 1 rule. The proposed amendments clarify that the control requirements for gasoline loading racks apply to Group 1 gasoline loading racks. "Group 1 gasoline loading rack" is the term used to define the affected emissions source subject to emissions control requirements. This clarification would amend 40 CFR 63.640 of subpart CC.

F. What is the compliance schedule for the proposed amendments?

The proposed amendments to the Refinery MACT 1 rule would become effective on the date of publication of the final amendments in the **Federal Register**. Under section 112 (i)(1) of the CAA, any new facility would be required to comply upon startup. For existing sources, CAA section 112(i)(3)(A) requires compliance no later than 3 years after the effective date of the standard. The proposed 3-year compliance date is

appropriate because it will allow facilities time to perform monitoring and install required controls. For cooling towers, we are allowing 3 years to identify which towers are affected, to identify the ability to repair these cooling towers without a process unit turnaround, to determine the HAP emissions that would occur if a shutdown is required to control a heat exchanger leak, and to establish an appropriate monitoring program that meets the requirements of the proposed rule. For EBU, 3 years is necessary to perform tests of benzene destruction efficiency, to calculate the overall effectiveness of the EBU using the procedures in Appendix C, to establish appropriate monitoring provisions and install and test necessary equipment, and to make modifications to the EBU if necessary to increase the efficiency of the system to meet the proposed requirements. For storage tanks, 3 years are being proposed to allow flexibility in the addition of the guidepole controls for safety and operational concerns. In promulgating similar requirements for storage tanks, we have extended the compliance time until the next scheduled turnaround requiring emptying and degassing of the tank or 10 years, whichever is sooner. This is because the emissions that occur during emptying and degassing exceed the HAP emission reductions that would occur as a result of applying the controls. We are requesting comments on whether it is necessary to empty and degas tanks for retrofitting the

proposed controls.

IV. Rationale for Proposed Amendments

A. What actions are we proposing under CAA section 112(d)(2)?

We did not establish standards for cooling towers in the Refinery MACT 1 rule. Industry emissions information and data demonstrate that organic HAP emissions from cooling towers at petroleum refineries are significant, and we are proposing to add emissions standards for organic HAP from cooling towers at petroleum refineries under the authority of CAA section 112(d)(2). Because the emissions from cooling towers are not emitted through a stack and are not practically measurable, we have established work practice standards as provided for under CAA section 112(h)(2) to address these emissions.

In evaluating the MACT floor, we must determine the average emissions limitations achieved by the top 12 percent of the affected sources. We have often interpreted the average of the top 12 percent as the performance of the 6th percentile unit. Of the 150 refineries, the 6th percentile is represented by the 9th ranked top-performing unit. Based on available information, we have determined that the top 12 percent of the industry currently implements cooling tower monitoring programs to detect and repair leaks of process fluids into cooling water using chemical usage rates or other surrogate indicators of heat exchanger leaks. Therefore, we have determined that the MACT floor for existing cooling towers is monitoring of surrogate indicators of heat exchanger leaks in cooling water and to

repair leaks. The nationwide total annual cost (TAC) to conduct cooling tower monitoring of surrogate indicators and repairs is estimated to be $750,000. This cost includes a product recovery credit of $1.2 million, and includes no costs for repair of heat exchangers under that assumption that refiners would repair leaking heat exchangers when they are made aware of the leak as part of their routine operations. For large leaks, reasons for repairing leaks immediately could be safety concerns or the recovery of large product losses. For smaller leaks, these concerns might not be valid and therefore refiners might incur additional costs beyond routine operations. EPA requests comment on the extent to which immediate repairs would be based on these concerns, and on typical costs of repair. The HAP emissions reduction for the MACT floor is estimated to be 373 tpy total HAP and 28.3 tpy of benzene. The HAP baseline for cooling towers was estimated to be 3,024 tpy.

The MACT floor for new sources is represented by the best-performing similar unit. Based on all of the information available, the best performance standard currently being implemented is direct organic chemical concentration monitoring of their Refinery MACT 1 cooling towers on a quarterly basis. Based on emissions data for the facility implementing this program, we have determined that the performance of this cooling tower monitoring program would limit leaks into the cooling water to less than 10 lbs/day of a single organic HAP and less than 100

lbs/day of total organic HAP. Therefore, we have determined that the MACT floor for new cooling towers is quarterly organic chemical-specific monitoring with an action level of 10 lbs/day or greater of a single organic HAP and 100 lbs/day or greater of total organic HAP.

EPA has concluded, based on available data, that existing industry monitoring of surrogate parameters will only detect large leaks, which would miss leaks that would generate significant organic HAP emissions (see memorandum to docket: Cooling towers: Control Options and Impact Estimates). EPA analyzed the amount of HAP that could be emitted from cooling water based on HAP concentration data and flow rates for cooling towers at several petroleum refinery facilities and decided to structure regulatory options to account for variable cooling water flow and minimum detection limit capabilities of 10 parts per billion by weight (ppbw) for the concentrations of individual HAP in water. For example, at a petroleum refinery with total organic HAP concentration of 30 ppbw and a cooling water flow rate of 40,000 gallons per minute (gal/min), the potential organic HAP emissions from the cooling tower are 14 lbs/day or over 2.5 tons if the leak lasted for a year.

As part of our beyond the floor analysis, we considered alternatives more stringent than the MACT floor option for existing and new sources. For existing and new sources, we identified two alternatives that would require monitoring by collecting a cooling water sample and analyzing for speciated HAP. In both alternatives, the cost of the monitoring is likely

less than the value of the product that would no longer be lost to the atmosphere. Additionally, we have not included repair costs in any of the options as we considered these costs to be routine operational costs. The costs discussed also apply to new as well as existing sources, since there are no retrofit issues associated with the proposed monitoring program.

One alternative more stringent than the MACT floor includes quarterly monitoring of cooling water by water sampling and a leak definition of greater than or equal to 10 pounds of any single organic HAP or greater than or equal to 100 pounds organic HAP per day and results in a total annualized cost saving of $2.1 million. This savings includes a product recovery credit of $4.4 million. The organic HAP emissions reduction for this alternative regulatory option 1 is 1,330 tpy and the cost-effectiveness is -$1,600/ton.

Another alternative more stringent than the MACT floor includes monthly monitoring of cooling water by water sampling and a leak definition of greater than or equal to 10 pounds of any single organic HAP or greater than or equal to 100 pounds organic HAP per day. The nationwide TAC is a savings of $1.6 million, including a recovery credit of $5.7 million. The organic HAP emissions reduction for this alternative is 1,720 tpy. The cost-effectiveness of this alternative is -$920/ton.

EPA is co-proposing two options for finalizing MACT standards for new and existing cooling towers. Option 1 represents the MACT floor for new and existing units, as discussed above. Option 2 is more stringent than the MACT floor

and is described above as requiring monthly (as opposed to quarterly) monitoring of individual (speciated) organic HAP. Table 1 of this preamble summarizes nationwide impacts of the proposed options.

Table 1. Nationwide Impacts for Cooling Tower Options

Option	Monitoring Cost ($1,000)	Product Recovery Credit ($1,000/yr)	Total Annual Cost ($1,000/yr)	HAP Emissions (tons/yr HAP)	Cost-Effectiveness ($/ton)	
					Overall	Incremental
Baseline	0	0	0	3,024	0	0
1 (MACT Floor)	1,990	-1,240	750	2,647	1,980	1,980
2 (Beyond the floor)	4,100	-5,680	-1,590	1,304	-920	-1,750

Note: the monthly monitoring alternative is projected to result in a positive incremental cost-effectiveness of $1,400 per ton (as compared to the quarterly alternative).

This analysis indicates that Option 2 will result in an overall cost savings. Further, the incremental cost-effectiveness of Option 2 monitoring compared to Option 1 is a negative $1,750/ton of HAP emissions controlled, which indicates a cost savings above the MACT floor option and is reasonable given these assumptions. However, there are some fundamental assumptions that may affect this analysis, for example, the amount of recovery credit generated by each program is uncertain and we did not consider repair costs or production downtime costs in our analysis. Therefore, we are co-proposing Option 1, the MACT floor option, and Option 2 in the event that the costs and feasibility of going beyond the floor are not reasonable. We are requesting comments on this analysis and on these options.

Additionally, under both options, a delay in repair is allowed under the proposed requirements if repair of the leak would require the process unit served by the leaking heat exchanger to be shut down, and the shutdown would result in greater HAP emissions than the projected HAP emissions from the cooling tower leak or if the necessary parts are not reasonably available. We request comments on other possible criteria for delay of repair in addition to these. In addition, we are requesting comments on another option for heat exchanger systems that cannot be repaired without a shutdown that would allow delay of repair until the next unit shutdown. This allowance could be contingent on factors such as the level of HAP emissions from the cooling tower or the duration to the next scheduled shutdown. Finally, we request comments on tracking the HAP emissions that occur during the delayed repair and relationship between this monitoring and emission measurement and the reportable quantity requirements under CERCLA.

B. How did we estimate residual risk?

EPA modeled available data on the emissions from petroleum refineries to assess the risks associated with petroleum refinery HAP emissions after compliance with the Refinery MACT 1 standard but prior to the proposed MACT amendments for cooling towers. Consistent with previous residual risk assessments, standard air toxics risk assessment practices and principles

were used to conduct assessments of potential chronic and acute exposures and risks for both inhalation and non-inhalation pathways. In addition, the potential for an adverse environmental effect arising from these sources was also evaluated. Complete documentation for the methods used and results from the risk assessment is available in a report entitled, draft Residual Risk Assessment for MACT 1 Petroleum Refining Sources, which is available in the docket.

Emissions data for 153 petroleum refineries nationwide were developed starting from the EPA's 2002 National Emissions Inventory (NEI), incorporating site-specific emissions and source information which were provided by the American Petroleum Institute (API) for 22 facilities. The emissions database was published for public comment through an Advanced Notice of Proposed Rulemaking (ANPRM). Comments and corrections to the database received during the public comment period were evaluated by technical reviewers for quality and consistency with engineering data; valid corrections to the database were incorporated for an additional 50 facilities (beyond the 22). No comments or corrections were received on the emissions or source data for 81 facilities.[2] The 153 refineries included in the database are believed to be all of the sources in the

[2] For an explanation of the corrections we accepted and the corrections we did not accept, see docket.

category.

C. What are the residual risks from petroleum refineries?

Table 2 of this preamble summarizes the results of the inhalation risk assessment. These estimates characterize the lifetime risk of developing cancer or noncancer health effects for individuals living within 50 kilometers (km) of any petroleum refinery.

Table 2. Risk Estimates Due to HAP Exposure Based on 70-Year Exposure Duration

Parameter	Results for Refinery MACT 1 Source Category
Maximum individual lifetime cancer risk (in 1 million)	70
Maximum hazard index[1] (chronic respiratory effects)	0.3
Estimated size of population at risk: greater than 1-in-1 million	90,000,000 460,000
greater than 10-in-1 million	6,000
greater than 100-in-1 million	0
Annual cancer incidence (number of cases per year)	0.04-0.09

[1] If the hazard index (HI) is calculated to be less than or equal to 1, then no adverse heath effects are expected as a result of the exposure.

We estimate that approximately 90 million people live within 50 km of a refinery. Results from the risk assessment indicate that none of the facilities posed a cancer risk greater than 100-in-1 million. Approximately 60 percent of the refineries have a maximum individual lifetime cancer risk (MIR) of greater than 1-in-1 million, and about 14 percent are associated with a MIR greater than 10-in-1 million. The highest

MIR value at any facility is 70-in-1 million. The cumulative cancer incidence from all MACT 1 refinery emission sources is estimated to be between 0.04 and 0.09 cases per year, or 1 case every 11 to 25 years. Benzene, naphthalene, polycyclic organic matter, and ethylene dibromide emissions are responsible for most of the estimated cancer incidence. Since the benzene cancer unit risk estimate (URE) is reported as a range of values, each end of which is considered to be equally plausible, the range of incidence reflects calculated risks using either end of the range, as well as different methods for extrapolating the risks from subsets of facility emission estimates. Additionally, the maximum noncancer hazard index (HI) associated with emissions from any refinery is estimated to be less than 1. This allows us to conclude that human inhalation exposures to pollution from Refinery MACT 1 sources are without appreciable risk of chronic noncancer health effects, and that direct atmospheric exposures of these pollutants to ecological receptors should not result in any potential environmental impact.

We performed acute screening-level assessments of potential acute impacts of concern on each facility and refined those assessments by analyzing aerial photographs of facilities with potential exceedances of acute benchmarks to determine which potential exceedances were truly outside facility boundaries.

The results indicated that 12 facilities show a potential to exceed 1-hour California acute Reference Exposure Levels (REL) for 3 pollutants (benzene, acrolein, and arsenic). The acute 1-hour REL is defined as the concentration level at or below which no adverse health effects are anticipated for a 1-hour exposure. Acute REL values are designed to protect the most sensitive individuals in a population by including margins of safety. The highest potential exceedance of any REL was for acrolein, and the REL was exceeded by a factor of 70. Other pollutants showing potential exceedances of the REL value are benzene (exceeded by a factor of 40), and arsenic (exceeded by a factor of 30). In spite of the fact that potential exceedances of these 3 acute REL values are shown by this analysis, none of the facilities investigated showed any potential to exceed available mild 1-hour Acute Exposure Guideline Levels (AEGL-1) for any of the modeled pollutants. The AEGL-1 is the airborne concentration 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.

Given the definitions of the acute REL and the AEGL-1, it is reasonable to conclude that (1) health effects in humans could occur as exposures increase above the AEGL-1, and (2) exposures below the REL are very unlikely to result in adverse

health effects. Potential exposures in between these values (which is what this analysis shows) are more difficult to interpret in terms of health risk. That is, these potential exposures are in the "gray area" of uncertainty where the true threshold for adverse effects lies, and thus it is not clear if adverse effects could actually occur at the levels determined by this analysis. Further, we did not refine these results by incorporating actual site-specific short-term emission variability into the analysis, so these results are believed to be very conservative and should be interpreted with care.

We also performed a screening-level multipathway risk assessment on the emissions of mercury, cadmium, lead, and polycyclic aromatic hydrocarbons (PAH), all compounds which are considered to be persistent and bioaccumulative HAP. Based on the results of this screening, noncancer human health risks due to the ingestion of these pollutants were all below levels considered to be without appreciable risk of adverse health effect. One of these pollutants, PAH, showed a potential to cause individual cancer risks as high as 40-in-1 million, exceeding 1-in-1 million, but less than 100-in-1 million. However, because of our inability to accurately speciate and estimate risks for individual compounds within the PAH class, we believe that this result is highly conservative, and that the true risks associated with these PAH are likely to be less than

1-in-1 million.

For the ecological assessment, two exceedances (cadmium and PAH) of ecological toxicity benchmarks were observed when examining the predicted TRIM.FaTE media concentrations (see Draft Residual Risk Assessment for MACT I Petroleum Refining Sources document). Given the conservative nature of the screening scenario, the results of the comparisons and a review of additional information available on the ecological toxicity of cadmium and PAH, we concluded that it is highly unlikely that these two exceedances are of concern. Overall, the potential for emissions from petroleum refinery sources to result in an adverse environmental impact is likely to be very low for all persistent bioaccumulative HAP emitted.

D. What are the uncertainties in risk assessments?

Uncertainty and the potential for bias are inherent in all risk assessments, including those performed for the petroleum refineries source categories affected by this proposal. A full discussion of uncertainties is found in the Draft Residual Risk Assessment for Petroleum Refining Sources (August 2007), available in the docket.

Although the development of the risk and technology review (RTR) database involved quality assurance/quality control processes, the accuracy of emissions values will vary depending on the source of the data present, incomplete or missing data,

errors in estimating emissions values, and other factors. Our review of the data indicates that there may be a low bias in reported emissions for many facilities. It appears that data from several processes and operations are not included in the reported emissions from many facilities. These include exclusion of upset, malfunction, startup, and shutdown events as well as omission of emissions sources that are unexpected, not measured, or not considered in inventories, such as leaks in heat exchanger systems; emissions from process sewers and wastewater systems; fugitive emissions from delayed coking units; and emissions from tank roof landings. Further, the emissions values considered in this analysis are annual totals for a single calendar year (2002) and do not reflect actual fluctuations during the course of the year, as well as variations from year to year. Finally, although we have performed a significant amount of quality control on the data set, for many facilities the physical characteristics (i.e., stack height, physical location) of the reported sources may be inaccurate for detailed risk characterization purposes.

We recently discovered that certain area source location attributes may have been incorrectly incorporated into our atmospheric dispersion simulations, resulting in a positional translation error which may locate certain emission points closer to or farther from potentially-exposed populations.

While the impact of this error has not been fully evaluated, we believe that it will not dramatically alter the MIR value for the source category, and that it will have very little impact on the total cancer incidence. Nonetheless, we will investigate and correct this error between proposal and promulgation of the final petroleum refineries MACT 1 residual risk decision and will consider any impact of this error in our final decision.

The uncertainties in our risk assessment can be generally divided into uncertainties in our ability to characterize exposures and uncertainties in our ability to characterize dose-response. We believe that the primary source of uncertainty in our exposure assessment is the uncertainty in the underlying emissions data, which are generally thought to be biased low, based on recent studies indicating that emission points such as cooling towers and wastewater treatment units are historically underestimated or even omitted from petroleum refinery emission inventories. Elsewhere in this notice, we request comment on methods that might reduce these emission uncertainties through moderate efforts to conduct ambient monitoring. The assessment uses toxicological dose-response values typically extrapolated from high-dose animal exposure or occupational exposures, to estimate risk. Consistent with EPA guidance, RfCs are developed by using order-of-magnitude factors to account for uncertainties in developing values protective of sensitive subpopulations.

Most of the URE in this assessment were developed using linearized low-dose extrapolation. Risks could be overestimated if the true dose-response relationship (which is usually unknown) is sublinear. Impacts have been extrapolated from short-duration, high-dose animal or occupational exposures to longer durations and lower doses, using uncertain interspecies scaling methods. In general, EPA considers these URE's to be upper-bound estimates based on the method of extrapolation, meaning they represent a plausible upper limit to the true value. (Note that this is usually not a true statistical confidence limit.) The true risk is therefore likely to be less, could be as low as zero, but also could be greater. As previously noted, benzene cancer risks were estimated from the reported URE range, which is considered to be based on maximum likelihood exposure and risk estimates.

E. What is our proposed decision under CAA Section 112(f)?

Based on the emissions data we have, we estimate that the MIR associated with exposures to HAP emissions from the sources covered by the Refinery MACT 1 rule is 70-in-1 million. Because the MIR is less than 100-in-1 million, the risk is acceptable. However, since the MIR is greater than 1-in-1 million, we must consider whether to require additional controls to protect public health with an ample margin of safety.

In making the ample margin of safety determination, we

consider the estimate of health risk and other health-related information (such as the weight of evidence for carcinogenicity or the severity of the noncancer health effect) along with additional factors relating to the appropriate level of control, including costs and economic impacts of controls, technological feasibility, uncertainties, and other relevant factors, consistent with the approach of the 1989 Benzene NESHAP, as summarized earlier.

In developing our proposed options under CAA section 112(f)(2), we considered control options for each of the Refinery MACT 1 emissions sources. In developing the control options, we wanted to target further emission reductions to the extent possible to reduce public health risks. The following provides a discussion of the control options that we evaluated for each of the Refinery MACT 1 emission sources.

1. Control Options Considered

a. Miscellaneous Process Vents, Gasoline Loading Racks, and Marine Vessel Loading Control Measures

Group 1 miscellaneous process vents and transfer loading operations (gasoline loading racks and marine vessel loading) are regulated by performance standards based on the use of technologies such as thermal oxidizers and carbon. We did not identify any other technically feasible control technologies that would reduce HAP emissions beyond these levels. Therefore,

the only way to reduce residual risk would be to change the applicability (i.e., certain Group 2 emission points under the original rule would become Group 1 emission points under a revised rule). We could not identify any cost-effective control options; the control option based on lowering the Group 1 thresholds exceeds $40,000 per ton of HAP reduced and $400,000 per ton of benzene reduced.

b. Equipment Leak Control Measures

For equipment leaks, we evaluated reducing the leak definition and requiring monitoring of open-ended lines. The cost-effectiveness of this option is approximately $20,000 per ton of HAP reduced and approximately $300,000 per ton of benzene reduced. We rejected these options due to their unreasonable cost-effectiveness.

c. Storage Vessel Control Measures

For storage vessels, we evaluated two control alternatives for Group 1 external floating roof storage vessels. First, we considered requiring a gasketed sliding cover or a flexible fabric sleeve and requiring a gasketed float or other device which closes off the liquid surface from the atmosphere for slotted guide poles. Next, we considered requiring geodesic domes. The slotted guide pole sleeve control option would reduce HAP by 1,046 tpy and benzene emissions by 105 tpy. The annualized cost of this control option would be completely

offset by the value of the organic products that would not be emitted by the addition of controls. The geodesic dome control option is not cost-effective when added to the proposed requirement for slotted guide pole sleeves.

d. Wastewater Control Measures

For refinery wastewater systems, the refinery MACT standard is based on the BWON requirements (55 FR 8346, 58 FR 3095). The BWON was developed under the two-step Benzene NESHAP approach and at that time we concluded that the controls provided an ample margin of safety. Because the BWON was incorporated by reference into the Petroleum Refineries MACT standard, we must now determine whether the BWON protects public health with an ample margin of safety. We believe that additional controls may be necessary to ensure an ample margin of safety.

We worked with industry to improve the emissions data used in the risk assessment. As part of this effort, refinery trade organizations provided EPA with detailed benzene emissions data from 22 petroleum refineries expected to be representative of the industry (see docket). Most refineries reported zero or minimal emissions from wastewater systems. For systems with EBU operating at 92 percent benzene reduction efficiency (the benzene reduction we estimated would be achieved in the BWON), we would expect benzene emissions on the order of 3 to 10 tpy, depending on the load into the system. The wastewater emissions

reported the 22 refineries are much less than this amount, approximately 20 tpy, which leads us to believe that the emission estimates exclude or significantly under-report benzene emissions from the EBU.

For well-operated EBU, the benzene emissions are expected to be small; however, there are no requirements in the Refinery MACT 1 rule or the BWON to demonstrate the proper performance of EBU. Since the BWON was promulgated, we have developed procedures and test methods to verify the performance of EBU.

Analysis of the potential emissions and associated risks from EBU when the biological treatment efficiency is less than 90 percent indicates that these sources could contribute significantly to risk. Therefore, we are evaluating a control option that the EBU demonstrate a fraction biodegraded of 90 percent or greater for benzene through an initial performance demonstration. This would be coupled with weekly monitoring of process parameters.

e. Cooling Tower Control Measures

The Refinery MACT 1 rule does not include provisions for cooling towers; we are proposing MACT requirements for cooling towers to address total organic HAP emissions under CAA section 112(d)(2). Those requirements are described in section IV.A of this preamble. In that section, we discuss our floor and beyond the floor analysis pursuant to CAA section 112(d)(2) and (d)(3).

We could not identify any additional control requirements that could cost-effectively reduce emissions from cooling towers beyond the options described above in our beyond-the-floor analysis.

More information of our evaluation of the control options considered for the Refinery MACT 1 emission sources is contained in memoranda in the docket.

f. Fenceline Monitoring

Numerous commenters on the ANPR for Phase II risk and technology review, including the Residual Risk Coalition representing the American Petroleum Institute, expressed concern about the quality and accuracy of emissions data available to conduct refined risk assessments. Based on our review of these data, we agree that there appears to be significant uncertainty, not only in identifying and characterizing emissions sources within facilities, but also in the amount and types of HAP emitted. In addition to inherent uncertainty in the development and use of emission factors, our review of the data indicates that there may be a low bias in reported emissions, as discussed earlier. Additional discussion of the potential low bias in emission estimates is available in the docket.

Our concerns regarding the potential low bias in the emission estimates leads us to request public comment on requiring fenceline monitoring of ambient benzene. A fenceline

monitoring program may provide an effective method to assess the general magnitude of uncertainty in facility emissions estimates for benzene. Additional information on fenceline monitoring may be found in a technical memorandum in the docket.

2. Regulatory Decisions under CAA section 112(f)(2)

a. Regulatory Decision for Storage Vessels

We are proposing two options for our rulemaking on whether to establish additional emission standards to protect public health with an ample margin of safety. Option 1 is to maintain the current level of control in the Refinery MACT 1 rule with no further modifications. Option 2 includes controls for storage vessels.

Impacts of the proposed control option requiring existing storage vessels with external floating roofs to install and operate a gasketed sliding cover or a flexible fabric sleeve and a gasketed float or other device which closes off the liquid surface from the atmosphere for slotted guide poles were evaluated and are presented in Table 3 of this preamble along with the associated costs and emissions reductions. These controls prevent the loss of products from storage vessels. Therefore, the control costs are offset by the increased product sales that are available by this pollution prevention. The VOC credit was calculated to be $480 per ton of VOC reduced, resulting in a net cost savings presented below.

Table 4 of this preamble presents the risk reduction associated with the control option for storage vessels.

Table 3. Cost and Emissions Impacts of Option 2 for Storage Vessels

Control Requirement	Total Capital Investment ($ million)	Total Annualized Cost without Recovery ($ million)	Product Recovery Credit ($ million)	Total Annualized Cost ($ million)	HAP Emissions (tpy)	Average Cost per Ton of HAP ($/ton)
Option 1 (Baseline)	0	0	0	0	1,867	0
Option 2 Storage Vessel Controls	2.76	1.1	-4.6	-3.5	821	-3,340

Table 4. Risk Impacts of Regulatory Alternative for Storage Vessels

Parameter		Option 1 Baseline	Option 2 Storage Vessel Control
Risk to Most Exposed Individual	Cancer (in 1 million)	70	70
	Noncancer (HI)	.3	.3
Size of Population at Cancer Risk[1]	> 100-in-1 million	0	0
	> 10-in-1 million	6,000	5,100
	> 1-in-1 million	460,000	393,000
Number of Plants at Cancer Risk Level[1]	> 100-in-1 million	0	0
	> 10-in-1 million	21	15
	> 1-in-1 million	96	91
Population with HI > 1[2]		0	0
No of Plants		0	0

with HI > 1			
Cancer Incidence		0.04-.09	0.03-.08
Cancer Incidence Reduction (Percent)		NA	10-25
HAP Emission Reduction (Percent)		NA	15

[1] Population risks and plant risk bin estimates are based on utilizing the high end of the reported cancer URE range for benzene. These estimates may be as much as 30 percent lower when estimated using the lower end of the benzene URE range.
[2] If the Hazard Index (HI) is calculated to be less than or equal to 1, then no adverse health effects are expected as a result of the exposure.

Under option 1, we are proposing to make no changes to the current Refinery MACT rule, instead proposing to find that the current level of control called for by the existing MACT standard represents both an acceptable level of risk (the cancer risk to the most exposed individual is approximately 70-in-1 million) and provides public health protection with an ample margin of safety. This proposed finding is based on considering the uncertainty of the cost impacts of further control for individual refineries and the relatively small reductions in health risks that are achieved by further control.

The Agency would conclude under proposed option 1 that the $3.5 million per year nationwide cost savings is uncertain and that some refineries may have positive net costs under Option 2, and that these costs would be unreasonable given the minor associated risk reductions. Baseline cancer incidence under the

current Refinery MACT 1 rule is estimated at 0.04 to .09, or 0.07 cases per year, on average. Proposed Option 2 would reduce incidence by about 0.01 cases per year. Statistically, this level of risk reduction means that Option 2 would prevent 1 cancer case every 100 years. Accordingly, if we were to conclude that there were not cost savings, the cost of this option could be considered to be disproportionate to the level of incidence reduction achieved. In addition, the Agency proposes to conclude that there are no changes in the distribution of risks reflected in Table 4 of this preamble (i.e., the MIR is not reduced from 70-in-1 million by additional control), and there are no noncancer HI values above 1. Consequently, under Option 1, we are proposing that it is not necessary to impose any additional controls on the industry to provide an ample margin of safety to protect public health.

Alternatively, we are also proposing that Option 2 provides an ample margin of safety to protect public health. This option reduces HAP emissions and risks beyond the current MACT standard using controls that are technically and economically feasible and that pose no adverse environmental impacts. We estimate that these changes would reduce the number of people at cancer risk greater than one in a million by 67,000 individuals and the cancer incidence by 0.01 cases per year (i.e., prevent one cancer case every 100 years). Option 2 would reduce emissions

of VOC by 9,500 tpy. Reducing VOC provides the added benefit of reducing ambient concentrations of ozone and may reduce fine particulate matter. The annualized cost impacts of Option 2 are estimated to be a cost savings of $3.5 million. Our economic analysis (summarized later in this preamble) indicates that this cost will have little impact on the price and output of petroleum products.

b. Regulatory Decision for EBU

We are proposing two options for our rulemaking on whether to establish additional emission standards to protect public health with an ample margin of safety. Option 1 maintains the current level of control in the Refinery MACT 1 rule with no further modifications. Option 2 requires refinery owners and operators of EBU to demonstrate and ensure a fraction biodegraded of 90 percent or greater for benzene through an initial performance demonstration coupled with weekly monitoring of process parameters to ensure the EBU are achieving the ample margin of safety as intended by the BWON rule. Impacts of the proposed Option 2 are presented in Table 5.

Table 5. Cost and Emissions Impacts of Option 2 for EBU

Control Requirement	Total Installed Capital Cost ($ Million)	Total Annualized Cost ($ million)	HAP Emissions (tpy)	Average Cost Per Ton of HAP ($/Ton)
Option 1 (Baseline)	0	0	5,000	0
Option 2	0	1.1	3,200	600

EBU Performance Demonstra-tion and Monitoring				

Impacts presented in Table 5 assume that 50 percent of EBU may degrade benzene at an efficiency of 80 percent. In the development of the BWON, we estimated that EBU would achieve between 88 to 93 percent control efficiency (Final NESHAP Standards for Waste Operations: Basis for Impact Calculations, Feb. 1990), on average, and made the finding that the reductions achieved from EBU would result in acceptable risk, and we did not require further reductions as part of our ample margin of safety decision. At that time, we had no consistent method of characterizing the performance of these treatment systems. Since the promulgation of the Refinery MACT 1 rule, we have promulgated procedures in appendix C of 40 CFR Part 63 to estimate the performance of biological treatment systems and have required the use of appendix C to demonstrate treatment efficiencies on other industries that use biological treatment systems. Our experience with other industries suggest that, while high biological treatment efficiencies can be achieved for low volatility, oxygenated compounds, achievement of high control efficiencies for benzene and other aromatic compounds is more difficult. As noted previously, many refineries who

provided data to the Agency reported zero or minimal emissions from wastewater treatment systems, many of which employ EBU for treatment. For EBU operating at 92 percent benzene reduction efficiency, we would expect benzene emissions ranging from 3 to 10 tons/year. The emissions reported by the 22 refineries are much less than this amount, which leads us to believe that the emission estimates exclude or significantly under-report benzene emissions from EBU. We specifically request comments on additional data that would address these concerns. Further, the use of appendix C by refineries at the present time is very limited, and, therefore, there is no data to either confirm or refute the validity of the original assumption of 92 percent made under the BWON.

The costs are based on the initial performance demonstration averaged over 5 years, so that the annual cost of the performance evaluation was $5,000/year. Once the performance evaluation is completed, refineries are expected to develop operating limits for the minimum MLVSS concentration and the maximum food to microorganism ratio, which must be determined on a weekly basis. Although owners and operators of EBU are expected to routinely conduct these analyses, we estimated that an additional cost of $5,000/year would be incurred for these analyses and the associated recordkeeping and reporting requirements. Additionally, we assumed that by

altering the operating characteristics of the unit (e.g., increasing system mixing characteristics, increasing biomass or submerged aeration), we assumed that all of the units not originally achieving 90 percent treatment efficiency could achieve 90 percent treatment efficiency at no cost. EPA understands that significant material and/or labor costs actually might be incurred by owners/operators who implement treatment process changes such as adding or modifying aerators, or implementing other process improvements, and specifically requests comment on this assumption. Nevertheless, we currently estimate that refineries using EBU for treatment of affected wastewater streams would incur, on average, a cost of $10,000/year over the first 5 years.

Table 6 presents the estimated risk reductions for the EBU control Option. Table 6 also presents the risk impacts assuming a hypothetical baseline based on the addition of emissions from cooling towers and wastewater operations to the RTR dataset. It is important to note that the risk impacts resulting from a higher HAP baseline estimated assuming that 50 percent of EBU are achieving an average of 80 percent, rather than 92 percent control, and that this is an assumption (an estimate of hypothetical emissions) based on our judgment of what could be occurring in the industry, and is not based on actual emissions estimates or modeling. EPA specifically requests comment and

data related to the validity of this assumption. The baseline benzene emissions were assumed to increase from 136 tpy benzene (in the RTR database) to 388 tpy benzene, and the reductions achieved as a result of imposing demonstration requirements leading to better EBU process controls were calculated to be 138 tpy benzene. Finally, based on a ratio of 7.7 percent benzene to HAP for wastewater, we calculated reductions of 1,800 tpy HAP from this option. Additionally, we also increased the adjusted baseline to account for unreported cooling tower emissions of 285 tpy benzene. Accordingly, risk impacts for the baseline were scaled linearly, and the EBU controls were estimated to reduce cancer incidence from the hypothetical baseline by .01 to .02. It should be noted that this is not a rigorous risk analysis, but a rough estimate of risk impacts based on projected wastewater emissions.

Table 6. Risk Impacts of Regulatory Alternative for EBU

Parameter		RTR Baseline	Option 1 Adjusted (Hypothetical) Baseline	Option 2 EBU Controls (Hypothetical)
Risk to Most Exposed Individual	Cancer (in 1 million)	70	70	70
	Noncancer (HI)	0.3	0.3	0.3
Size of Population at Cancer Risk[1]	> 100-in-1 million	0	0	0
	> 10-in-1 million	6,000	10,500	9,300
	> 1-in-1	460,000	805,000	716,000

	million			
Number of Plants at Cancer Risk Level[1]	> 100-in-1 million	0	0	0
	> 10-in-1 million	21	41	36
	> 1-in-1 million	96	108	104
Population with HI > 1[2]		0	0	0
No of Plants with HI > 1		0	0	0
Cancer Incidence		0.04-0.09	0.07-.16	0.06-.14
Cancer Incidence Reduction (Percent)			NA	15
HAP Emission Reduction (Percent)			NA	11

[1] Population risks and plant risk estimates are based on utilizing the high end of the reported cancer URE range for benzene. These estimates may be as much as 30 percent lower when estimated using the lower end of the benzene URE range.
[2] If the Hazard Index (HI) is calculated to be less or equal to 1, then no adverse health effects are expected as a result of the exposure.

Under Option 1, we are proposing to make no changes to the current Refinery MACT rule, and are proposing that the current level of control under the existing MACT standard represents both an acceptable level of risk (the cancer risk to the most exposed individual is approximately 70-in-1 million) and provides public health protection with an ample margin of safety. This proposed finding is based on the existing data

(emissions estimates from 22 refineries, the NEI, and from public review of the NEI data) that indicate that risks posed wastewater treatment systems are low and that further reduction of such low risk is not warranted and is not necessary to achieve an ample margin of safety.

We are also proposing that Option 2 provides an ample margin of safety to protect public health. This option may reduce HAP emissions and risks beyond the current MACT standard using controls that are technically and economically feasible and that pose no adverse environmental impacts. Further, the option addresses the uncertainty in emissions estimates by requiring that owners and operators of EBU demonstrate their systems are effective as reflected by the low reported emissions estimates for wastewater treatment systems. We believe this option addresses the consideration of uncertainty in the ample margin of safety decision.

We estimate that these changes could reduce the number of people at cancer risk greater than one in a million by 89,000 individuals. In addition, Option 2 could reduce the cancer incidence by between 0.01 and 0.02 cases per year (i.e., prevent one cancer case every 100 to 50 years), depending on the accuracy of our assumptions, and resulting in a cost of $110 to $55 million per cancer case avoided. The annualized cost impacts of Option 2 are estimated at 1.1 million. Our economic

analysis (summarized later in this preamble) indicates that this cost will have little impact on the price and output of petroleum products.

c. Regulatory Decision for Cooling Towers

Section 112(f)(2) of the CAA requires that we evaluate residual risk and set standards as necessary to protect human health with an ample margin of safety within 8 years of promulgation of a MACT standard. We are performing the CAA section 112(f)(2) review for all petroleum refinery MACT 1 sources, including cooling towers, in this proposal.

As stated previously, the petroleum refinery risks are now acceptable. We believe that with the controls proposed as meeting CAA sections (d)(2) and (d)(3), no additional controls for cooling towers are needed to provide an ample margin of safety under CAA section (f)(2). In the final rule we will select MACT as one of these two options or other options that are a logical outgrowth of public comments. We will then assess the risk that remains and also perform the ample margin of safety analysis in the manner described above.

F. What is EPA proposing pursuant to CAA section 112(d)(6)?

Section 112(d)(6) of the CAA requires us to review and revise MACT standards, as necessary, every 8 years, taking into account developments in practices, processes, and control technologies that have occurred during that time. This

authority provides us with broad discretion to revise the MACT standards as we determine necessary, and to account for a wide range of relevant factors.

We do not interpret CAA section 112(d)(6) as requiring another analysis of MACT floors for existing and new sources. Rather, we interpret the provision as essentially requiring us to consider developments in pollution control in the industry ("taking into account developments in practices, processes, and control technologies"), and assessing the costs of potentially stricter standards reflecting those developments (69 FR 48351). As the U.S. Court of Appeals for the District of Columbia Circuit has found regarding similar statutory provisions directing EPA to reach conclusions after considering various enumerated factors, we read this provision as providing EPA with substantial latitude in weighing these factors and arriving at an appropriate balance in revising our standards. This discretion also provides us with substantial flexibility in choosing how to apply modified standards, if necessary, to the affected industry.

In an earlier rulemaking, we elaborated on how we expect we would address the need for future reviews under certain circumstances and our position regarding when revisions may be likely under CAA section 112(d)(6). For more information on this subject, see Nation Emission Standards for Hazardous Air

Pollutants for Organic Hazardous Air Pollutants from the Synthetic Organic Chemical Manufacturing Industry (71 FR 34437-34438, June 14, 2006).

We could not identify any other developments in practices, processes, and control technologies for Refinery MACT 1 sources. Therefore, as a result of this CAA section 112(d)(6) review, we are proposing the same two options as we proposed to meet section 112(f)(2). Based on the uncertainty of the cost of control for individual refineries and the relatively small reductions in health risks that are achieved by these controls, we are proposing that these controls are not necessary under 112(d)(6). Alternately, if we conclude in the final rule that there are cost savings associated with requiring slotted guidepole controls for storage vessels, we are proposing to require those controls pursuant to CAA section 112 (d)(6).

The consent decree also requires us to consider and address the application of subpart A to subpart CC of part 63, as appropriate. The requirements of 40 CFR part 63, subpart A are contained in Table 6 of 40 CFR part 63, subpart CC. As a result of our review, no changes are currently proposed to Table 6 of the rule. However, as discussed in section V of this preamble, we are requesting comments on entries to the table that may be confusing to owners and operators.

V. Request for Comments

We request comment on all aspects of the proposed rule. All significant comments received during the comment period will be considered in the development and selection of the final rule. In addition to general comments on the proposed options, we particularly request comments and data on the following issues. Comments must provide supporting documentation in sufficient detail to allow characterization of the quality and representativeness of the data or information.

1. Fenceline Monitoring

Based on the residual risk results, one of the primary risk drivers from the Refinery MACT 1 emission sources is benzene. The primary releases of benzene are fugitive emissions from process equipment, wastewater treatment, storage tanks, and loading operations and generally occur near ground level. Thus, the highest benzene concentrations outside the facility will likely occur near ground level at the property boundaries. Consequently, monitoring at the property boundary (fenceline) would provide a measure of the annual average benzene concentrations immediately surrounding the refinery, which might be useful in efforts to eliminate uncertainties in emissions estimates.

As noted in section IV.H of this preamble, we are requesting comment on: the need for a fenceline monitoring program, potential monitoring methods (e.g., diffusive sampling

or alternative active sampling methods, alternative sorbents for measuring HAP other than benzene), monitor siting, monitoring frequency, feasibility of various monitoring approaches/methods, sampling and analytical precision and accuracy, reliability of monitoring methods and devices, consideration of non-facility related emissions, and sampling and analytical costs.

2. Test Methods for Wastewater

We are also requesting comment on the applicability and feasibility of Method 5220 for the measurement of chemical oxygen demand (COD) in wastewater treated by EBU and alternative COD methods.

3. Applicability of Subpart A to Subpart CC

In addition, we request comments on Table 11 of the Appendix to subpart CC of 40 CFR part 63. The Appendix to subpart CC addresses the application of the 40 CFR part 63 General Provisions in subpart A to subpart CC of 40 CFR part 63. We have tried to make the Appendix to subpart CC consistent with the Appendix A in subpart UUU, the other 40 CFR part 63 MACT standard affecting petroleum refineries.

VI. Statutory and Executive Order Reviews

A. Executive Order 12866: Regulatory Planning and Review

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is a "significant regulatory action" because it may raise novel legal or policy issues. Accordingly, EPA submitted

this action to the Office of Management and Budget (OMB) for review under Executive Order 12866, and any changes made in response to OMB recommendations have been documented in the docket for this action.

B. Paperwork Reduction Act

The information collection requirements in the proposed amendments to the NESHAP for Petroleum Refining (40 CFR part 63, subpart CC) will be submitted for approval to OMB under the Paperwork Reduction Act, 44 U.S.C. 3501, et seq. A separate notice seeking public comment on these information collection requirements will be published in the **Federal Register**.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not

required to, respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR part 63 are listed in 40 CFR part 9.

C. Regulatory Flexibility Act

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

For the purposes of assessing the impacts of this proposed rule on small entities, small entity is defined as: (1) a small business that meets the Small Business Administration size standards for small businesses at 13 CFR 121.201 (a firm having no more than 1,500 employees and no more than 125,000 barrels per day of capacity of petroleum-based inputs[3], including crude oil or bona fide feedstocks for NAICS code 32411); (2) a small

[3] Capacity includes owned or leased facilities as well as facilities under a processing agreement or an agreement such as an exchange agreement or a throughput. The total product to be delivered under the contract must be at least 90 percent refined by the successful bidder from either crude oil or bona fide feedstocks.

governmental jurisdiction that is a government of a city, county, town, school district, or special district with a population of less than 50,000; and (3) a small organization that is any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.

After considering the economic impacts of this proposed rule on small entities, I certify that this action will not have a significant economic impact on a substantial number of small entities. Based on our analyses of both options, the amendments would either result in a nationwide net cost of about $1.0 million or achieve a nationwide net savings (i.e., a return) of about $4.0 million per year due to reductions in product losses. Only one affected small firm would incur net costs as a result of the proposed amendments; all other small or large firms owning affected refineries would have net savings. Net costs for the affected small firm are well below 0.01 percent of its revenue; therefore, no adverse economic impacts are expected for any small entity. Thus, the costs associated with the proposal would not result in any "significant" adverse economic impact for any small entity.

Although the proposed rule will not have a significant economic impact on a substantial number of small entities, we nonetheless tried to reduce the impact of the proposed rule on small entities. We held meetings with industry trade

associations and company representatives to discuss the proposed rule and have included provisions for small facilities that address their concerns. We continue to be interested in the potential impacts of the proposed action on small entities and welcome comments on issues related to such impacts.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104-4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with "Federal mandates" that may result in expenditures by State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any 1 year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the

Administrator publishes with the final rule an explanation why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

The EPA has determined that the proposed amendments do not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or to the private sector in any 1 year. As discussed earlier in this preamble, these amendments result in nationwide net savings to the private sector. Thus, the proposed rule is not subject to the requirements of sections 202 and 205 of the UMRA. In addition, the proposed amendments do not significantly or uniquely affect small governments. The proposed amendments contain no requirements that apply to such governments, and impose no obligations upon them. The proposed rule is not subject to section 203 of the UMRA.

E. Executive Order 13132: Federalism

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

The proposed amendments do not have federalism implications. They would not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132. These proposed amendments add control and performance demonstration requirements. They do not modify existing responsibilities or create new responsibilities among EPA Regional offices, States, or local enforcement agencies. Thus, Executive Order 13132 does not apply to the proposed amendments.

In the spirit of Executive Order 13132, and consistent with EPA policy to promote communications between EPA and State and

local governments, EPA specifically solicits comments on these proposed amendments from State and local officials.

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

Executive Order 13175, entitled Consultation and Coordination with Indian Tribal Governments (65 FR 67249, November 9, 2000), requires EPA to develop an accountable process to ensure "meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications." The proposed amendments do not have tribal implications, as specified in Executive Order 13175. They would not have substantial direct effects on tribal governments, on the relationship between the Federal government and Indian tribes, or on the distribution of power and responsibilities between the Federal government and Indian tribes, as specified in Executive Order 13175. The proposed amendments impose no requirements on tribal governments. Thus, Executive Order 13175 does not apply to the proposed amendments.

EPA specifically solicits additional comment on these proposed amendments from tribal officials.

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

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April

23, 1997), applies to any rule that: (1) is determined to be "economically significant," as defined under Executive Order 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, EPA must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

The proposed rule is not subject to the Executive Order because they are not economically significant as defined in Executive Order 12866, and because the Agency does not have reason to believe the environmental health or safety risks addressed by this action present a disproportionate risk to children.

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

The proposed amendments are not a "significant energy action" as defined in Executive Order 13211, Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use (66 FR 28355, May 22, 2001) because they are not likely to have a significant adverse effect on the supply, distribution, or use of energy. Further, we have concluded that the proposed amendments are not likely to have

any adverse energy effects because they result in overall savings due to product recovery.

I. National Technology Transfer and Advancement Act

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

This proposed rule involves technical standards. EPA cites the following methods in this rule: EPA Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), in Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (incorporated by reference-see 40 CFR 63.14), for analysis of water samples taken from cooling tower return lines; 40 CFR 61.355(c)(3) of the National Emission Standards for Benzene Waste Operations for water sample collection; and 40 CFR part 63, appendix C, for the fraction biodegradation of benzene in EBU. This proposed rule also cites the following VCS: Method 5210, Biochemical Oxygen Demand

(BOD), for measuring BOD_5 (for 5-day BOD), Method 5220, Chemical Oxygen Demand (COD), for measuring COD, and Method 2540E, Fixed and Volatile Solids Ignited at 500 degrees C, for measuring MLVSS concentration, all in Standard Methods for the Examination of Water and Wastewater (incorporated by reference-see 40 CFR 63.14).

Consistent with the NTTAA, EPA conducted searches to identify VCS in addition to the methods cited in this proposed rule. One VCS was found that could potentially be applicable to this rule in lieu of Standard Method 5220, Chemical Oxygen Demand (COD), for measuring COD. This potential standard is ASTM D1252-06, Standard Test Methods for Chemical Oxygen Demand (Dichromate Oxygen Demand) of Water. The EPA requests comments on whether this standard should be reviewed for relevancy to today's proposed rule. Based on the comments received, the EPA will review this method for inclusion in the final rule. No VCS were found for the other methods cited in this rule.

For the methods required or referenced by these proposed amendments, a source may apply to EPA for permission to use alternative test methods or alternative monitoring requirements in place of any required testing methods, performance specifications, or procedures under 40 CFR 63.7(f) and 40 CFR 63.8(f) of subpart A of the General Provisions. In general, EPA welcomes comments on this aspect of the proposed amendments and,

specifically, invites the public to identify other potentially-applicable VCS and to explain why such standards should be used in this regulation.

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

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

EPA has determined that these proposed amendments will not have disproportionately high and adverse human health or environmental effects on minority or low-income populations because they increase the level of environmental protection for all affected populations without having any disproportionately high and adverse human health or environmental effects on any

population, including any minority or low-income population. These proposed amendments add new control requirements to established national standards for petroleum refineries.

List of Subjects in 40 CFR Part 63

Environmental protection, Air pollution control, Hazardous substances, Incorporation by reference, Reporting and recordkeeping requirements.

_____
Dated:

_____
Stephen L. Johnson,
Administrator.

For the reasons stated in the preamble, title 40, chapter I, part 63 of the Code of Federal Regulations is proposed to be amended as follows:

Part 63--[AMENDED]

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

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

Subpart A--[AMENDED]

[Option 1 for §63.14]

2. Section 63.14 is amended by adding paragraph (k)(1)(iv) to read as follows:

§63.14 Incorporations by reference.

* * * * *

(k) * * *

(1) * * *

(iv) Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 2 (and subsequent revisions), dated December 1996 and in Update III, IBR approved for §63.654(a)(1) and (b) of Subpart CC of this part.

* * * * *

[Option 2 for §63.14]

3. Section 63.14 is amended by adding paragraphs (k)(1)(iv) and (l) to read as follows:

§63.14 Incorporations by reference.

* * * * *

(k) * * *

(1) * * *

(iv) Method 8260B, Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 2 (and subsequent revisions), dated December 1996 and in Update III, IBR approved for §63.654(a)(1) and (b) of Subpart CC of this part.

* * * * *

(l) The following material is available from the American Public Health Association, 1015 15th Street, NW, Washington, DC 20005 or at http://www.standardmethods.org:

(1) The following methods as published in Standard Methods for the Examination of Water and Wastewater, A.D. Eaton (ed.), et al, 21st Edition (and subsequent editions), dated 2005:

(i) Method 2540E, Solids, dated 1997, IBR approved for §63.647(d)(5) of Subpart CC of this part.

(ii) Method 5210, Biochemical Oxygen Demand (BOD), dated 2001, IBR approved for §63.647(d)(6) of Subpart CC of this part.

(iii) Method 5220, Chemical Oxygen Demand (COD), dated 1997, IBR approved for §63.647(d)(6) of Subpart CC of this part.

(2) [Reserved]

Subpart CC--[AMENDED]

[Option 1 for §63.640]

4. Section 63.640 is amended by:

a. Revising paragraph (a), introductory text;

b. Revising paragraph (c), introductory text;

c. Revising paragraphs (c)(6) and (7);

d. Adding paragraph (c)(8);

e. Revising paragraph (h), introductory text;

f. Adding paragraph (h)(6);

g. Revising the first sentence in paragraph (l), introductory text and the first sentence in paragraph (l)(3), introductory text; and

h. Adding paragraph (s).

§63.640 Applicability and designation of affected source.

(a) This subpart applies to petroleum refining process units and to related emissions points that are specified in paragraphs (c)(5) through (8) of this section that are located at a plant site and that meet the criteria in paragraphs (a)(1) and (2) of this section:

* * * * *

(c) For the purposes of this subpart, the affected source shall comprise all emissions points, in combination, listed in paragraphs (c)(1) through (8) of this section that are located at a single refinery plant site.

* * * * *

(6) All marine vessel loading operations located at a refinery meeting the criteria in paragraph (a) of this section and the applicability criteria of subpart Y, §63.560;

(7) All storage vessels and equipment leaks associated with a bulk gasoline terminal or pipeline classified under Standard Industrial Classification code 2911 located within a contiguous area and under common control with a refinery meeting the criteria in paragraph (a) of this section; and

(8) All cooling tower systems associated with petroleum refining process units meeting the criteria in paragraph (a) of this section and which meets the criteria in either paragraph (a)(8)(i) or (a)(8)(ii) of this section:

(i) The cooling tower system provides non-contact cooling water to any heat exchanger in Table 1 HAP service.

(ii) The cooling tower system receives cooling water from multiple heat exchangers which serve different petroleum refinery process units and any of the heat exchangers are in Tab1e 1 HAP service.

* * * * *

(h) Except as provided in paragraphs (k), (l), or (m) of this section, sources subject to this subpart are required to achieve compliance on or before the dates specified in paragraphs (h)(1) through (6) of this section.

* * * * *

(6) Cooling tower systems that are part of an existing source shall be in compliance with §63.654 no later than 3 years and 90 days after the date of publication of the final amendments in the **Federal Register.**

* * * * *

(l) If an additional petroleum refining process unit is added to a plant site or if a miscellaneous process vent, storage vessel, gasoline loading rack, marine tank vessel loading operation, or cooling tower system that meets the criteria in paragraphs (c)(1) through (8) of this section is added to an existing petroleum refinery or if another deliberate operational process change creating an additional Group 1 emissions point(s) (as defined in §63.641) is made to an existing petroleum refining process unit, and if the addition or process change is not subject to the new source requirements as determined according to paragraphs (i) or (j) of this section, the requirements in paragraphs (l)(1) through (3) of this section shall apply. * * *

* * * * *

(3) The owner or operator of a petroleum refining process unit or of a storage vessel, miscellaneous process vent, wastewater stream, gasoline loading rack, marine tank vessel loading operation, or cooling tower system meeting the criteria in paragraphs (c)(1) through (8) of this section that is added

to a plant site and is subject to the requirements for existing sources shall comply with the reporting and recordkeeping requirements that are applicable to existing sources including, but not limited to, the reports listed in paragraphs (l)(3)(i) through (vii) of this section. * * *

* * * * *

(s) Overlap of subpart CC with other regulations for cooling tower systems. After the compliance date specified in paragraph (h) of this section, the owner or operator of a cooling tower system that is also subject to another subpart in this part (e.g., subpart F, YY, FFFF) is exempt from the monitoring requirements in §63.654(a) through (d).

[Option 2 for §63.640]

5. Section 63.640 is amended by:

a. Revising paragraph (a), introductory text;

b. Revising paragraph (c), introductory text;

c. Revising paragraphs (c)(6) and (7);

d. Adding paragraph (c)(8);

e. Revising paragraph (h), introductory text;

f. Adding paragraphs (h)(6) through (8);

g. Revising the first sentence in paragraph (l), introductory text and the first sentence in paragraph (l)(3), introductory text; and

h. Adding paragraph (s).

§63.640 Applicability and designation of affected source.

(a) This subpart applies to petroleum refining process units and to related emissions points that are specified in paragraphs (c)(5) through (8) of this section that are located at a plant site and that meet the criteria in paragraphs (a)(1) and (2) of this section:

* * * * *

(c) For the purposes of this subpart, the affected source shall comprise all emissions points, in combination, listed in paragraphs (c)(1) through (8) of this section that are located at a single refinery plant site.

* * * * *

(6) All marine vessel loading operations located at a refinery meeting the criteria in paragraph (a) of this section and the applicability criteria of subpart Y, §63.560;

(7) All storage vessels and equipment leaks associated with a bulk gasoline terminal or pipeline classified under Standard Industrial Classification code 2911 located within a contiguous area and under common control with a refinery meeting the criteria in paragraph (a) of this section; and

(8) All cooling tower systems associated with petroleum refining process units meeting the criteria in paragraph (a) of the section and which meets the criteria in either paragraph (a)(8)(i) or paragraph (a)(8)(ii) of this section:

(i) The cooling tower system provides non-contact cooling water to any heat exchanger in Table 1 HAP service.

(ii) The cooling tower system receives cooling water from multiple heat exchangers which serve different petroleum refinery process units and any of the heat exchangers are in Table 1 HAP service.

* * * * *

(h) Except as provided in paragraphs (k), (l), or (m) of this section, sources subject to this subpart are required to achieve compliance on or before the dates specified in paragraphs (h)(1) through (8) of this section.

* * * * *

(6) Group 1 storage vessels that are part of an existing source shall be in compliance with §63.646(c) and (e) no later than 3 years and 90 days after the date of publication of the final amendments in the **Federal Register.**

(7) Group 1 wastewater streams that are part of an existing source shall be in compliance with §63.647(d) no later than 3 years and 90 days after the date of publication of the final amendments in the **Federal Register.**

(8) Cooling tower systems that are part of an existing source shall be in compliance with §63.654 no later than 3 years and 90 days after the date of publication of the final amendments in the **Federal Register.**

* * * * *

(l) If an additional petroleum refining process unit is added to a plant site or if a miscellaneous process vent, storage vessel, gasoline loading rack, marine tank vessel loading operation, or cooling tower system that meets the criteria in paragraphs (c)(1) through (8) of this section is added to an existing petroleum refinery or if another deliberate operational process change creating an additional Group 1 emissions point(s) (as defined in §63.641) is made to an existing petroleum refining process unit, and if the addition or process change is not subject to the new source requirements as determined according to paragraph (i) or paragraph (j) of this section, the requirements in paragraphs (l)(1) through (3) of this section shall apply. * * *

* * * * *

(3) The owner or operator of a petroleum refining process unit or of a storage vessel, miscellaneous process vent, wastewater stream, gasoline loading rack, marine tank vessel loading operation, or cooling tower system meeting the criteria in paragraphs (c)(1) through (8) of this section that is added to a plant site and is subject to the requirements for existing sources shall comply with the reporting and recordkeeping requirements that are applicable to existing sources, including, but not limited to, the reports listed in paragraphs (l)(3)(i)

through (vii) of this section. * * *

* * * * *

(s) Overlap of subpart CC with other regulations for cooling tower systems. After the compliance date specified in paragraph (h) of this section, the owner or operator of a cooling tower system that is also subject to another subpart in this part (e.g., subpart F, YY, FFFF) is exempt from the monitoring requirements in §63.654(a) through (d).

6. Section 63.641 is amended by adding, in alphabetical order, definitions for "Cooling tower system," "Cooling water return lines," and "Point of measurement for leak determination," to read as follows:

§63.641 Definitions

* * * * *

Cooling tower system means a closed loop recirculation system or a once through system.

Cooling water return lines means the main water trunk lines at the inlet to the cooling tower before exposure to the atmosphere.

* * * * *

Point of measurement for leak determination means any location in the cooling water return line or lines prior to exposure of the cooling water to the atmosphere.

* * * * *

[Option 2 for §63.646; Option 1 would not revise §63.646]

7. Section 63.646 is amended by revising paragraphs (c) and (e) to read as follows:

§63.646 Storage vessel provisions.

* * * * *

(c) On and after the compliance date specified in §63.640(h)(6), the owner or operator of a storage vessel that is equipped with an external floating roof and that is part of an existing source shall comply with the requirements for slotted guide poles in §63.119(c)(2)(ix) and (x). The following requirements do not apply to storage vessels at existing sources subject to this subpart: §§63.119(b)(5); (b)(6); (c)(2)(i) through (viii), (xi), and (xii); and (d)(2).

* * * * *

(e) On and after the compliance date in §63.640(h)(6), when complying with the inspection requirements of §63.120(b) of subpart G, owners and operators of a storage vessel that is equipped with an external floating roof and that is part of an existing source shall comply with the provisions of §63.120(b)(10) and (b)(10)(i) for slotted guide poles as described in paragraph (e)(1) and (2) of this section. The owner or operator is not required to comply with the requirements for slotted membranes.

(1) As part of the inspection required in §63.120(b)(10),

the owner or operator shall visually check the gasketed cover or flexible fabric sleeve seal and gasketed float or other device for each slotted guide pole.

(2) If the external floating roof has defects; the primary seal has holes, tear, or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or seal fabric; or the gaskets (including a gasketed cover or gasketed float for a slotted guide pole) no longer close off the liquid surface from the atmosphere; or the flexible fabric sleeve seal for a slotted guide pole has holes, tears, or other openings in the seal or seal fabric; or the slotted membrane has more than 10 percent open area, the owner or operator shall repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with organic HAP.

* * * * *

[Option 2 for §63.647; Option 1 would not revise §63.647]

8. Section 63.647 is amended by adding paragraph (d) to read as follows:

§63.647 Wastewater provisions.

* * * * *

(d) On and after the compliance date specified in §63.640(h)(7), the owner or operator of an enhanced biodegradation unit (EBU) that receives a Group 1 wastewater

stream from a petroleum refinery shall comply with the requirements in paragraphs (d)(1) through (6) of this section. The provisions in §61.348(b)(2)(ii)(B) for the recommended range for the food-to-microorganism ratio, the mixed liquor suspended solids concentration, and residence time do not apply, and the requirements in §§61.348(b)(2)(i), 61.354(b)(2), and 61.355(k)(4)(i) for monitoring the benzene concentration at the inlet to the EBU and maintaining it below 10 parts per million by weight (ppmw) do not apply.

(1) The fraction biodegraded of benzene in each EBU shall be 90 percent or greater.

(2) The mixed liquor volatile suspended solids (MLVSS) concentration shall not fall below the operating limit established during the initial performance test.

(3) The food-to-microorganism ratio shall not exceed the operating limit established during the initial performance test.

(i) Food can be measured as either grams per liter (g/l) of 5-day biological oxygen demand (BOD_5) or g/l of chemical oxygen demand (COD), but you must use the same measure used to develop your operating limit.

(ii) Determine the food-to-microorganism ratio operating limit using Equation 1 of this section:

$$Food - to - microorganism\,ratio = \frac{BOD_5\ x\ Q_{in}}{[MLVSS]\,x\,V_{EBU}} \qquad \text{(Eq. 1)}$$

Where:
BOD_5 = 5-day biological oxygen demand or chemical oxygen demand of EBU influent wastewater (g/l = kg/m^3);
Q_{in} = Influent wastewater volumetric flow rate to the EBU (m^3/day);
[MLVSS] = Concentration of mixed liquor volatile suspended solids (g/l = kg/m^3); and
V_{EBU} = Average volume of wastewater in the EBU during normal process operations (m^3).

(4) The owner or operator shall conduct an initial performance test to demonstrate compliance with the treatment efficiency standard of each EBU using the following procedures:

(i) Determine the fraction biodegraded of benzene as determined according to the procedures in appendix C to part 63 (Determination of the Fraction Biodegraded (F_{bio}) in a Biological Treatment Unit).

(ii) Use the multiple zone concentration method with separate "inlet" zones for each inlet location containing an applicable benzene waste stream. The inlet zone is defined as the depth of the EBU times the 100 square foot area surrounding each benzene wastewater inlet.

(iii) The remainder of the EBU may be modeled as a single zone or multiple zones depending on the mixing zones present in the EBU as described in appendix C to part 63.

(iv) The volume-weighted average MLVSS concentration used in the multiple zone F_{bio} test must be used as the operating limit for MLVSS. The volume-weighted average food-to-microorganism ratio used in the multiple zone F_{bio} test must be

used as the operating limit for the food-to-microorganism ratio.

(5) Measure the MLVSS in the EBU no less frequently than once per week using Method 2540 (incorporated by reference-see §63.14); and

(6) Measure the EBU influent biological oxygen demand (BOD) using Method 5210 (incorporated by reference-see §63.14) or the COD MLVSS using Method 5220 (incorporated by reference-see §63.14) in the EBU no less frequently than once per week. Calculate the food-to-microorganism ratio once a week using Equation 1 of this section and record the results.

9. Section 63.650 is amended by revising paragraph (a) to read as follows.

§63.650 Gasoline loading rack provisions.

(a) Except as provided in paragraphs (b) through (c) of this section, each owner or operator of a Group 1 gasoline loading rack classified under Standard Industrial Classification code 2911 located within a contiguous area and under common control with a petroleum refinery shall comply with subpart R, §§63.421, 63.422(a) through (c), 63.425(a) through (c), 63.425(e) through (h), 63.427(a) and (b), and 63.428(b), (c), (g)(1), and (h)(1) through (3).

* * * * *

10. Sections 63.654 and 63.655 are redesignated as §§63.655 and 63.656.

11. Revise existing references to §63.654 to §63.655. These references to §63.654 appear in §63.640(b)(2), (e)(2)(iii), (f)(5), (k)(2)(ii), (k)(2)(iii), (l) introductory text, (l)(3)(i), (l)(3)(ii); the definition of "continuous record" in §63.641; §63.642(k)(1) and (l)(2); §63.644(b) introductory text, (c)(1), (d), and (e); §63.645(h)(2); §63.646(j) and (k); §63.652(e)(5), (f)(3), and (l)(1); §63.653(a)(7), (b), (c), (d) introductory text, (d)(2)(vii), and (d)(2)(viii)(G); §63.654(i)(1)(ii); entries for §§63.6(b)(5), 63.7(a)(2), 63.7(g), 63.7(h)(3), 63.8(c)(1)(ii), 63.8(c)(4), 63.8(f)(4)(i), 63.8(g), 63.9(b)(1)(i), 63.9(b)(4), 63.9(b)(5), , 63.10(d)(2), and 63.10(d)(5) of Table 6 to subpart CC; and Footnotes d, f, and (g) of Table 10 to subpart CC.

[Option 1 for §63.654]

13. Section 63.654 is added to read as follows:

§63.654 Cooling tower systems.

(a) On and after the compliance date specified in §63.650(h)(8), the owner or operator of an existing source shall monitor each cooling tower system subject to this subpart to detect and repair leaks of organic HAP into the cooling water. The owner or operator may elect to monitor the total organic HAP listed in Table 1 of this subpart on a quarterly basis according to the requirements in paragraphs (a)(1) of this section or monitor chemical usage or other surrogates according to the

requirements in paragraph (a)(2) of this section.

(1) The owner or operator shall conduct quarterly monitoring of total organic HAP listed in Table 1 of this subpart according to the methods and procedures in paragraphs (a)(1)(i) through (iii) of this section.

(i) Collect a water sample from each cooler water return line(s) prior to air stripping or exposure to air. You must collect each sample using the sampling procedures in §61.355(c)(3) of the National Emission Standard for Benzene Waste Operations.

(ii) Analyze each sample using EPA Method 8260B (incorporated by reference—see §63.14). Determine the total organic HAP concentration as the sum of the individual HAP concentrations of the HAP listed in Table 1 of this subpart.

(iii) If the total organic HAP concentration exceeds 1 part per million by weight (ppmw), a leak is detected.

(2) The owner or operator shall monitor chlorine or bromine usage at least once each day, free chlorine at least twice each day, oxidation reduction potential (ORP) at least six times per day, hydrocarbons (using an online analyzer) at least twice each day, or volatile organic compounds (VOC) El Paso at least once each month according to the procedures in paragraphs (a)(2)(i) through (iii).

(i) Conduct an initial analysis of the cooling water using

EPA Method 8260B (incorporated by reference—see §63.14) to demonstrate that the total organic HAP concentration is less than 1 ppmw.

(ii) Establish operating limits for the parameters to be monitored. You must identify the parameters to be monitored and the established operating limits in your Notification of Compliance Status and written monitoring plan.

(iii) If the monitored operating parameter exceeds the operating limit, you must sample the cooling water to determine the total organic HAP concentration. If the total organic HAP concentration exceeds 1 ppmw, a leak is detected.

(b) On and after the compliance date specified in §63.650(h)(8), the owner or operator of a new source shall monitor the concentration of HAP from each cooling tower system subject to this subpart on a quarterly basis to identify and repair any leak with a potential mass leak rate of 10 pounds per day (lb/day) or greater of any single HAP listed in Table 1 of this subpart or 100 lb/day or greater of total HAP listed in Table 1 of this subpart. A heat exchange system may consist of an entire heat exchange system or a combination of heat exchangers such that, based on the rate of cooling water and the sensitivity of the test method, a leak of 10 lb/day or greater of any single HAP listed in Table 1 of this subpart or 100 lb/day or greater of total HAP would be detected. The owner or

operator shall conduct the quarterly monitoring according to the methods and procedures in paragraphs (a)(1) through (4) of this section.

(1) Collect a water sample from each cooler water return line(s) prior to air stripping or exposure to air. You must collect each sample using the sampling procedures in §61.355(c)(3) of the National Emission Standard for Benzene Waste Operations.

(2) Analyze each sample using EPA Method 8260B (incorporated by reference—see §63.14). Determine the total HAP concentration as the sum of the individual HAP concentrations of the HAP listed in Table 1 of this subpart.

(3) Calculate and record the potential mass leak rate using Equation 1 of this section:

$$L = 0.012\, C_{HAP}\, Q_{CT} \qquad \text{(Eq. 1)}$$

Where:

L	=	Potential mass leak rate of HAP (lb/day);
0.012	=	Constant for unit conversion (lb/gallon × minutes/day × part per million parts);
C_{HAP}	=	Concentration of individual or total organic HAP in the cooling tower water prior to exposure to the air (ppmw); and
Q_{CT}	=	Volumetric flow rate of cooling water to the cooling tower (gallons per minute).

(4) If the results of Equation 1 of this section indicate a leak with a mass leak rate of 10 lb/day of any single HAP or 100 lb/day of total HAP per day or greater, a leak is detected.

(c) If a leak is detected, the owner or operator must identify the source of the leak as soon as practicable, but no later than 30 days after receiving the sampling results that indicate the presence of a leak.

(d) Except for a delay allowed under paragraph (e) of this section, the owner or operator must repair any leak as soon as practicable, but no later 30 days after identifying the source of leak. Repairs may include:

(1) Physical repairs to the leaking heat exchanger;

(2) Blocking the leaking tube within the heat exchanger;

(3) Changing the pressure so that water flows into the process fluid; or

(4) Replacing the heat exchanger.

(e) The owner or operator may delay the repair of a leak if the conditions in paragraph (e)(1) or paragraph (e)(2) of this section are met.

(1) Repairing the leak would require the process unit served by the leaking heat exchanger to be shut down, and a shutdown for repair would cause greater emissions than the potential emissions from the cooling tower from the time the leaking exchanger was first identified and the next planned shutdown.

(i) The facility must use the startup and shutdown emissions estimates in the cooling tower monitoring plan

required by paragraph (f) of this section for the estimate of total organic HAP emissions for the process unit serviced by the leaking heat exchanger.

(ii) The owner or operator must conduct monthly monitoring of the total organic HAP concentration using EPA Method 8260B (incorporated by reference—see §63.14).

(iii) The owner or operator shall recalculate the potential air emissions from the cooling tower using the new sampling results and the time period between the most recent sampling results and the next planned shutdown. If the potential air emissions from the cooling tower exceed the startup and shutdown emission estimates for any month, the owner or operator must repair the heat exchanger within 30 days of receiving the sampling results that voided the delay of repair; or

(2) The necessary parts are not reasonably available, in which case the owner or operator must complete the repair as soon as practicable upon receiving the necessary parts, but no later than 120 days after identifying the leaking exchanger. The owner or operator can not further delay the repair when a sampling result voids the delay of repair under paragraph (e)(1)(iii) of this section.

(f) The owner or operator shall prepare, implement, and maintain onsite at all times a cooling tower monitoring plan

that includes the information specified in paragraphs (f)(1) through (11) of this section.

(1) Identification of all cooling tower systems at the facility;

(2) Identification of the cooling tower systems subject to this subpart;

(3) Identification of the cooling tower systems receiving cooling water from a heat exchanger that are exempt from this subpart according to §63.640(s);

(4) Identification of the heat exchanger(s) and process unit(s) serviced by each cooling tower system that is subject to this subpart;

(5) The HAP concentration of the process fluids in each heat exchanger serviced by a cooling tower system subject to this subpart;

(6) The surrogate parameters to be monitored, the monitoring frequency, and parameter operating limits for each cooling tower system subject to this subpart;

(7) The methods used to identify the leaking heat exchanger once a leak is detected;

(8) Standard repair procedures that reduce emissions from leaks;

(9) Procedures for reporting leaks into the cooling water system;

(10) List of critical spare parts that must be maintained in inventory;

(11) Engineering estimates of startup and shutdown organic HAP emissions for each process unit serviced by a cooling tower subject to this subpart.

[Option 2 for §63.654]

14. Section 63.654 is added to read as follows:

§63.654 Cooling tower systems.

(a) On and after the compliance date specified in §63.650(h)(8), the owner or operator of a new or existing source shall monitor the concentration of HAP from each cooling tower system subject to this subpart on a monthly basis to identify and repair any leak with a potential mass leak rate of 10 pounds per day (lb/day) or greater of any single HAP listed in Table 1 of this subpart or 100 lb/day or greater of total HAP listed in Table 1 of this subpart. A heat exchange system may consist of an entire heat exchange system or a combination of heat exchangers such that, based on the rate of cooling water and the sensitivity of the test method, a leak of 10 lb/day or greater of any single HAP listed in Table 1 of this subpart or 100 lb/day or greater of total HAP would be detected. The owner or operator shall conduct the monthly monitoring according to the methods and procedures in paragraphs (a)(1) through (3) of this section.

(1) Collect a water sample from each cooler water return line(s) prior to air stripping or exposure to air. You must collect each sample using the sampling procedures in §61.355(c)(3) of the National Emission Standard for Benzene Waste Operations.

(2) Analyze each sample using EPA Method 8260B (incorporated by reference—see §63.14). Determine the total organic HAP concentration as the sum of the individual HAP concentrations of the HAP listed in Table 1 of this subpart.

(3) Calculate and record the potential mass leak rate using Equation 1 of this section:

$$L = 0.012\, C_{HAP}\, Q_{CT} \qquad \text{(Eq. 1)}$$

Where:

L = Potential mass leak rate of HAP (lb/day);
0.012 = Constant for unit conversion (lb/gallon × minutes/day × part per million parts);
C_{HAP} = Concentration of individual or total organic HAP in the cooling tower water prior to exposure to the air (ppmw); and
Q_{CT} = Volumetric flow rate of cooling water to the cooling tower (gallons per minute).

(b) If the results of Equation 1 of this section indicate a leak with a mass leak rate of 10 lb/day of any single HAP or 100 lb/day of total HAP per day or greater, the owner or operator must identify the source of the leak as soon as practicable, but no later than 30 days after receiving the sampling results that indicate the presence of a leak.

(c) Except for a delay allowed under paragraph (d) of this

section, the owner or operator must repair any leak with a mass leak rate of 10 pounds of any single Table 1 HAP or 100 pounds of total Table 1 HAP per day or greater as soon as practicable, but no later 30 days after identifying the source of leak. Repairs may include:

(1) Physical repairs to the leaking heat exchanger;

(2) Blocking the leaking tube within the heat exchanger;

(3) Changing the pressure so that water flows into the process fluid; or

(4) Replacing the heat exchanger.

(d) The owner or operator may delay the repair of a leak if the conditions in paragraph (d)(1) or paragraph (d)(2) of this section are met.

(1) Repairing the leak would require the process unit served by the leaking heat exchanger to be shut down, and a shutdown for repair would cause greater emissions than the potential emissions from the cooling tower from the time the leaking exchanger was first identified and the next planned shutdown.

(i) The facility must use the startup and shutdown emissions estimates in the cooling tower monitoring plan required by paragraph (e) of this section for the estimate of HAP emissions for the process unit serviced by the leaking heat exchanger.

(ii) The owner or operator must continue monthly monitoring of HAP as required by paragraph (a) of this section.

(iii) The owner or operator shall recalculate the potential air emissions from the cooling tower using the new sampling results and the time period between the most recent sampling results and the next planned shutdown. If the potential air emissions from the cooling tower exceed the startup and shutdown emission estimates for any month, the owner or operator must repair the heat exchanger within 30 days of receiving the sampling results that voided the delay of repair; or

(2) The necessary parts are not reasonably available, in which case the owner or operator must complete the repair as soon as practicable upon receiving the necessary parts, but no later than 120 days after identifying the leaking exchanger. The owner or operator can not further delay the repair when a sampling result voids the delay of repair under paragraph (d)(1)(iii) of this section.

(e) The owner or operator shall prepare, implement, and maintain onsite at all times a cooling tower monitoring plan that includes the information specified in paragraphs (e)(1) through (10) of this section.

(1) Identification of all cooling tower systems at the facility;

(2) Identification of the cooling tower systems subject to this subpart;

(3) Identification of the cooling tower systems receiving cooling water from a heat exchanger that are exempt from this subpart according to §63.640(s);

(4) Identification of the heat exchanger(s) and process unit(s) serviced by each cooling tower system that is subject to this subpart;

(5) The HAP concentration of the process fluids in each heat exchanger serviced by a cooling tower system subject to this subpart;

(6) The methods used to identify the leaking heat exchanger once a leak is detected;

(7) Standard repair procedures that reduce emissions from leaks;

(8) Procedures for reporting leaks into the cooling water system;

(9) List of critical spare parts that must be maintained in inventory;

(10) Engineering estimates of startup and shutdown HAP emissions for each process unit serviced by a cooling tower subject to this subpart.

[Option 1 for §63.655]

15. Newly redesignated §63.655 is amended by:

a. Revising paragraph (f)(1), introductory text, and adding paragraph (f)(1)(vi);

b. Revising paragraph (g), introductory text and adding paragraph (g)(9);

c. Redesignating existing paragraph (i)(4) as (i)(5); and

d. Adding paragraph (i)(4).

§63.655 Reporting and recordkeeping requirements.

* * * * *

(f) * * *

(1) The Notification of Compliance Status report shall include the information specified in paragraphs (f)(1)(i) through (vi) of this section.

* * * * *

(vi) For each cooling tower system, identification of the cooling tower systems that are subject to the requirements of this subpart and cooling tower systems that are exempt from the requirements of this subpart.

* * * * *

(g) The owner or operator of a source subject to this subpart shall submit Periodic Reports no later than 60 days after the end of each 6-month period when any of the compliance exceptions specified in paragraphs (g)(1) through (6) of this section or paragraph (g)(9) of this section occur. The first 6-month period shall begin on the date the Notification of

Compliance Status report is required to be submitted. A Periodic Report is not required if none of the compliance exceptions identified in paragraph (g)(1) through (6) of this section or paragraph (g)(9) of this section occurred during the 6-month period unless emissions averaging is utilized. Quarterly reports must be submitted for emission points included in emission averages, as provided in paragraph (g)(8) of this section. An owner or operator may submit reports required by other regulations in place of or as part of the Periodic Report required by this paragraph if the reports contain the information required by paragraphs (g)(1) through (9) of this section.

* * * * *

(9) For cooling tower systems, Periodic Reports must include the following information:

(i) A summary of the leak monitoring data, including the number of leaks determined to be equal to or greater than 10 lbs/day of any one HAP or 100 lb/day of total HAP;

(ii) If applicable, the date a leak was identified, the date the source of the leak was identified, and the date of repair.

(iii) If applicable, a summary of the reason for delayed repair of any leak and the date of repair.

* * * * *

(i) * * *

(4) The owner or operator of a cooling tower system subject to the monitoring requirements in §63.654 shall comply with the recordkeeping requirements in paragraphs (i)(4)(i) through (iii) of this section.

(i) HAP analytical results.

(ii) The date when a leak was identified by sampling results, the date when the heat exchanger leak source was identified, and the date when the leak source was repaired or taken out of service.

(iii) If a repair is delayed, the reason for the delay. If the daily is based on startup and shutdown emissions, the initial and monthly calculations of the potential cooling tower emissions and the date of the next planned shutdown.

* * * * *

[Option 2 for §63.655]

16. Newly redesignated §63.655 is amended by:

a. Revising paragraph (f)(1) introductory text, revising paragraph (f)(1)(i)(A)*(*1*)*, and adding paragraphs (f)(1)(vi) and (vii);

b. Revising paragraphs (g) introductory text, (g)(1), and (g)(3)(iii)(A) and adding paragraphs (g)(9) and (g)(10);

c. Redesignating existing paragraph (i)(4) as (i)(5); and

d. Adding paragraph (i)(4).

§63.655 Reporting and recordkeeping requirements.

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(f) * * *

(1) The Notification of Compliance Status report shall include the information specified in paragraphs (f)(1)(i) through (f)(1)(vi) of this section.

(i) * * *

(A) * * *

(1) For each Group 1 storage vessel complying with §63.646 that is not included in an emissions average, the method of compliance (i.e., internal floating roof, external floating roof, or closed vent system and control device) and for each Group 1 storage vessel that is equipped with an external floating roof and that is part of an existing source, the method of compliance with the requirements for slotted guidepoles (i.e., gasketed cover or sleeveless seal and gasketed float or other device).

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(vi) For each cooling tower system, identification of the cooling tower systems that are subject to the requirements of this subpart and cooling tower systems that are exempt from the requirements of this subpart.

(vii) For each EBU, identification of the operating limits for the mixed liquor volatile suspended solids concentration and

food-to-microorganism ratio established during the performance test and a full copy of the performance test report.

(g) The owner or operator of a source subject to this subpart shall submit Periodic Reports no later than 60 days after the end of each 6-month period when any of the compliance exceptions specified in paragraphs (g)(1) through (6) of this section or paragraph (g)(9) of this section occur. The first 6-month period shall begin on the date the Notification of Compliance Status report is required to be submitted. A Periodic Report is not required if none of the compliance exceptions identified in paragraph (g)(1) through (6) of this section or paragraph (g)(9) of this section occurred during the 6-month period unless emissions averaging is utilized. Quarterly reports must be submitted for emission points included in emission averages, as provided in paragraph (g)(8) of this section. An owner or operator may submit reports required by other regulations in place of or as part of the Periodic Report required by this paragraph if the reports contain the information required by paragraphs (g)(1) through (9) of this section.

(1) For storage vessels, Periodic Reports shall include the information specified for Periodic Reports in paragraphs (g)(2) through (5) of this section except that information related to gaskets, slotted membranes, and sleeve seals is not

required for a storage vessel that is part of an existing source and that is equipped with a fixed roof and an internal floating roof or an external floating roof converted to an internal floating roof. Information related to gaskets and sleeve seals for slotted guide poles is required for a storage vessel that is part of an existing source and that is equipped with an external floating roof.

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(3) * * *

(iii) * * *

(A) A failure is defined as any time in which the external floating roof has defects; or the primary seal has holes or other openings in the seal or the seal fabric; or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, or the gaskets (including a gasketed cover or gasketed float for a slotted guide pole) no longer closes off the liquid surface from the atmosphere; or a flexible fabric sleeve seal for a slotted guide pole has holes or other openings or, for a new source, the gaskets no longer close off the liquid surface from the atmosphere; or, for a storage vessel that is part of a new source, the slotted membrane has more than 10 percent open area.

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(9) For cooling tower systems, Periodic Reports must

include the following information:

(i) A summary of the leak monitoring data, including the number of leaks determined to be equal to or greater than 10 lbs/day of any one HAP or 100 lbs/day of total HAP;

(ii) If applicable, the date a leak was identified, the date the source of the leak was identified, and the date of repair.

(iii) If applicable, a summary of the reason for delayed repair of any leak and the date of repair.

(10) For EBU, the periodic report must clearly identify any excursion from the operating limit for the concentration of mixed liquor volatile suspended solids or the food-to-microorganism ratio established in the initial performance test.

* * * * *

(i) * * *

(4) The owner or operator of a cooling tower system subject to the monitoring requirements in §63.654 shall comply with the recordkeeping requirements in paragraphs (i)(4)(i) through (iii) of this section.

(i) HAP analytical results.

(ii) The date when a leak was identified by sampling results, the date when the heat exchanger leak source was identified, and the date when the leak source was repaired or taken out of service.

(iii) If a repair is delayed, the reason for the delay. If the delay is based on startup and shutdown emissions, the initial and monthly calculations of the potential cooling tower emissions and the date of the next planned shutdown.

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17. Table 11 of the appendix to subpart CC of part 63 is added as follows:

Table 11--Applicability of NESHAP General Provisions (40 CFR Part 63, Subpart A) to Subpart CC

Citation	Applies to Subpart CC	Comment
63.1(a)(1)-63.1(a)(3)	Yes	General Applicability
63.1(a)(4)	No	This table specifies applicability of General Provisions to Subpart CC
63.1(a)(5)	No	[Reserved]
63.1(a)(6)	No	
63.1(a)(7)-(9)	No	[Reserved]
63.1(a)(10)	No	Subpart CC specifies calendar or operating day
63.1(a)(11)-63.1(a)(12)	Yes	
63.1(b)(1)	No	Initial Applicability

		Determination Subpart CC specifies applicability
63.1(b)(2)	No	[Reserved]
63.1(b)(3)	No	
63.1(c)(1)	No	Subpart CC specifies requirements
63.1(c)(2)	No	Area sources are not subject to subpart CC
63.1(c)(3)-(4)	No	[Reserved]
63.1(c)(5)	Yes	Except that notification requirements in subpart CC apply
63.1(d)	No	[Reserved]
63.1(e)	Yes	Applicability of Permit Program
63.2	Yes	Definitions §63.641 specifies that if the same term is defined in subparts A and CC, it shall have the meaning given in subpart CC
63.3	Yes	Units and Abbreviations
63.4(a)(1)-(2)	Yes	
63.4(a)(4)-(5)	Yes	[Reserved]
63.4(b)- 63.4(c)	Yes	Circumvention/ Fragmentation
63.5(a)(1)	Yes	Construction and

		Reconstruction-Applicability Replace term "source" and "stationary source" in §63.5(a)(1) with "affected source"
63.5(a)(2)	Yes	
63.5(b)(1)	Yes	Existing, New, Reconstructed Sources - Requirements
63.5(b)(2)	No	[Reserved]
63.5(b)(3)	Yes	
63.5(b)(4)	Yes	
63.5(b)(5)	No	[Reserved]
63.5(b)(6)	Yes	
63.5(c)	No	[Reserved]
63.5(d)(1)(i)	Yes	Application for Approval of Construction or Reconstruction Except subpart CC specifies the application is submitted as soon as practicable before startup but no later than 90 days (rather than 60) after the promulgation date where construction or reconstruction had commenced and initial startup had not occurred

		before promulgation
63.5(d)(1)(ii)	Yes	Except that emission estimates specified in §63.5(d)(1)(ii)(H) are not required
63.5(d)(1)(iii)	Yes	
63.5(d)(2)	Yes	
63.5(d)(3)	Yes	
63.5(d)(4)	Yes	
63.5(e)	Yes	Approval of Construction or Reconstruction
63.5(f)(1)	Yes	Approval of Construction or Reconstruction Based on State Review
63.5(f)(2)	Yes	Except that 60 days is changed to 90 days and cross-reference to (b)(2) does not apply
63.6(a)	Yes	Compliance with Standards and Maintenance - Applicability
63.6(b)(1)	No	
63.6(b)(2)	Yes	
63.6(b)(3)	Yes	
63.6(b)(4)	No	
63.6(b)(5)	Yes	Notification Requirements

63.6(b)(6)	No	[Reserved]
63.6(b)(7)	Yes	
63.6(c)(1)	Yes	
63.6(c)(2)	No	Subpart CC specifies compliance dates
63.6(c)(3)-(4)	No	[Reserved]
63.6(c)(5)	Yes	
63.6(d)	No	[Reserved]
63.6(e)(1)	Yes	Operation and Maintenance Requirements
63.6(e)(2)	No	[Reserved]
63.6(e)(3)(i)	Yes	Startup, Shutdown, and Malfunction Plan (SSM)
63.6(e)(3)(ii)	No	[Reserved]
63.6(e)(3)(iii)	Yes	
63.6(e)(3)(iv)	Yes	Except that reports of actions not consistent with plan are not required within 2 and 7 days of action but rather must be included in next periodic report
63.6(e)(3)(v)-(ix)	Yes	
63.6(f)(1)	Yes	Compliance with Emission Standards
63.6(f)(2)(i)	Yes	

63.6(f)(2)(ii)	Yes	Subpart CC specifies use of monitoring data in determining compliance
63.6(f)(2)(iii)(A)-63.6(f)(2)(iii)(C)	Yes	
63.6(f)(2)(iii)(D)	No	
63.6(f)(2)(iv)-(v)	Yes	
63.6(f)(3)	Yes	
63.6(g)	Yes	Alternative Standard
63.6(h)	No	Compliance with Opacity/VE Standards Subpart CC does not include opacity/VE standards
63.6(i)(1)-63.6(i)(14)	Yes	Extension of Compliance
63.6(i)(15)	No	[Reserved]
63.6(i)(16)	Yes	
63.6(j)	Yes	Exemption from Compliance
63.7(a)(1)	No	Performance Test Requirements - Applicability and Dates Subpart CC specifies the applicable test and demonstration procedures
63.7(a)(2)	No	Test results must be submitted in the notifi-cation of compliance status report due 150

		days after the compliance date
63.7(a)(3)	Yes	
63.7(b)	Yes	Notifications Except Subpart CC specifies notification at least 30 days prior to the scheduled test date rather than 60 days
63.7(c)	Yes	Quality Assurance/Test Plan
63.7(d)	Yes	Testing Facilities
63.7(e)(1)- 63.7(e)(2)	Yes	Conduct of Tests
63.7(e)(3)	No	Subpart CC specifies the applicable methods and procedures
63.7(e)(4)	Yes	
63.7(f)	Yes	Alternative Test Method Subpart CC specifies the applicable methods and provides alternatives
63.7(g)	No	Data Analysis, Recordkeeping, Reporting Subpart CC specifies performance test reports and requires additional records for continuous emission monitoring systems

63.7(h)(1)- 63.7(h)(3)	Yes	Waiver of Tests
63.7(h)(4)	No	
63.7(h)(5)	Yes	
63.8(a)	No	Monitoring Requirements - Applicability
63.8(b)(1)	Yes	Conduct of Monitoring
63.8(b)(2)	Yes	
63.8(b)(3)	Yes	
63.8(c)(1)(i)	Yes	CMS Operation and Maintenance
63.8(c)(1)(ii)	Yes	
63.8(c)(1)(iii)	Yes	
63.8(c)(2)	Yes	
63.8(c)(3)	Yes	Except that operational status verification includes completion of manufacturer written specifications or installation operation, and calibration of the system or other written procedures that provide adequate assurance that the equipment will monitor accurately
63.8(c)(4)	No	Monitoring frequency is specified in subpart CC

63.8(c)(5)- 63.8(c)(8)	No	
63.8(d)	Yes	Quality Control
63.8(e)	Yes	CMS Performance Evaluation May be required by Administrator
63.8(f)(1)	Yes	Alternative Monitoring Method
63.8(f)(2)	Yes	
63.8(f)(3)	Yes	
63.8(f)(4)(i)-(iv)	Yes	
63.8(f)(5)(i)-(iii)	Yes	
63.8(f)(6)	No	
63.8(g)	No	Subpart CC specifies data reduction for CMS
63.9(a)	Yes	Notification Requirements - Applicability Duplicate notification of compliance status report to RA may be required
63.9(b)(1)(i)	Yes	Initial Notifications
63.9(b)(1)(ii)	Yes	
63.9(b)(1)(iii)	Yes	
63.9(b)(2)	Yes	
63.9(b)(3)	No	[Reserved]
63.9(b)(4)	Yes	

63.9(b)(5)	Yes	
63.9(c)	Yes	Request for Compliance Extension
63.9(d)	Yes	New Source Notification for Special Compliance Requirements
63.9(e)	Yes	Except notification is required at least 30 days before test
63.9(f)	Yes	Notification of VE/Opacity Test
63.9(g)	No	
63.9(h)	Yes	
63.9(i)	Yes	Adjustment of Deadlines
63.9(j)	No	Change in Previous Information
63.10(a)	Yes	Recordkeeping/Reporting-Applicability
63.10(b)(1)	Yes	
63.10(b)(2)(i)-(xiv)	Yes	
63.10(b)(3)	Yes	
63.10(c)	Yes	Additional CMS Recordkeeping
63.10(d)(1)	No	General Reporting Requirements
63.10(d)(2)	Yes	Performance Test Results

63.10(d)(3)	Yes	
63.10(d)(4)	Yes	Progress Reports
63.10(d)(5)(i)	Yes	Startup, Shutdown, and Malfunction Reports Except that reports are not required if actions are consistent with SSM plan, unless requested by permitting authority
63.10(d)(5)(ii)	Yes	Except that actions taken during a startup, shut-down, or malfunction that are not consistent with the plan do not need to be reported within 2 and 7 days of commencing and completing the action, respectively, but must be included in next periodic report
63.10(e)(1)	Yes	Additional CMS Reports
63.10(e)(2)	No	
63.10(e)(3)	Yes	Excess Emissions/CMS Performance Reports
63.10(e)(4)	No	
63.10(f)	Yes	Recordkeeping/Reporting Waiver
63.11	Yes	Control Device Requirements

		Applicable to flares
63.12	Yes	State Authority and Delegations
63.13	Yes	Addresses
63.14	Yes	Incorporation by Reference
63.15	Yes	Availability of Information/ Confidentiality