6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 63

[EPA-HQ-OAR-2018-0794; FRL-10007-26-OAR]

RIN 2060-AU48

National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units – Subcategory of Certain Existing Electric Utility Steam Generating Units Firing Eastern Bituminous Coal Refuse for Emissions of Acid Gas Hazardous Air Pollutants

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is taking final action establishing a subcategory of certain existing electric utility steam generating units (EGUs) firing eastern bituminous coal refuse (EBCR) for acid gas hazardous air pollutant (HAP) emissions that was noticed in a February 7, 2019, proposed rule titled "National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units – Reconsideration of Supplemental Finding and Residual Risk and Technology Review" (2019 Proposal). After consideration of public comments, the EPA has determined that there is a need for such a subcategory under the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Coal- and Oil-Fired EGUs, commonly known as the Mercury and Air Toxics Standards (MATS), and the Agency is establishing acid gas HAP emission standards applicable

only to the new subcategory. The EPA's final decisions on the other two distinct actions in the 2019 Proposal (*i.e.*, reconsideration of the 2016 Supplemental Finding that it is appropriate and necessary to regulate EGUs under Clean Air Act (CAA) section 112 and the residual risk and technology review of MATS) will be announced in a separate final action.

DATES: This final rule is effective on **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: The EPA has established a docket for this action under Docket ID No. EPA-HQ-OAR-2018-0794. All documents in the docket are listed on the *https://www.regulations.gov/* website. Although listed, some information is not publicly available, *e.g.*, confidential business information or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically through *https://www.regulations.gov/*, or in hard copy at the EPA Docket Center, Room Number 3334, WJC West Building, 1301 Constitution Ave., NW, Washington, DC. The Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m., Eastern Standard Time (EST), Monday through Friday. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the EPA Docket Center is (202) 566-1742.

FOR FURTHER INFORMATION CONTACT: For questions about this final action, contact Mary Johnson, Sector Policies and Programs Division (D243-01), Office of Air Quality Planning and Standards, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711; telephone number: (919) 541-5025; and email address: *johnson.mary@epa.gov*. For information about the applicability of the NESHAP to a particular entity, contact your EPA Regional representative as listed in 40 CFR 63.13 (General Provisions).

SUPPLEMENTARY INFORMATION:

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

ARIPPA	Appalachian Region Independent Power Producers Association
CAA	Clean Air Act
CEMS	continuous emissions monitoring systems
CFR	Code of Federal Regulations
CRA	Congressional Review Act
DSI	dry sorbent injection
EBCR	eastern bituminous coal refuse
ECMPS	Emissions Collection and Monitoring Plan System
EGU	electric utility steam generating unit
EPA	Environmental Protection Agency
FBC	fluidized bed combustors
FGD	flue gas desulfurization
HAP	hazardous air pollutant(s)
HCl	hydrochloric acid
Hg	mercury
ICR	Information Collection Request
lb	pound
lb/MMBtu	pounds per million British thermal units
lb/MWh	pounds per megawatt-hour
MACT	maximum achievable control technology
MATS	Mercury and Air Toxics Standards
MMBtu	million British thermal units
MW	megawatt
MWh	megawatt-hour
NAAQS	National Ambient Air Quality Standards
NAICS	North American Industry Classification System
NESHAP	national emission standards for hazardous air pollutants
NTTAA	National Technology Transfer and Advancement Act
OMB	Office of Management and Budget
PM	particulate matter
$PM_{2.5}$	fine particulate matter

PRA	Paperwork Reduction Act
RFA	Regulatory Flexibility Act
SDA	spray dryer absorbers
SO_2	sulfur dioxide
tpy	tons per year
UMRA	Unfunded Mandates Reform Act

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

I. General Information

A. Executive Summary

In the 2012 MATS rulemaking, the EPA established one subcategory of coal-fired EGUs for purposes of regulating acid gas HAP emissions. The Agency specifically rejected a request from some commenters for a separate acid gas HAP standard for all coal refuse-fired EGUs because we determined that the emissions of such HAP from some units combusting coal refuse were among the best performing sources for acid gas HAP as determined consistent with CAA section 112(d)(3). The EPA has reevaluated the data available when the 2012 MATS rule was established, in addition to new data generated since promulgation of that rule, and we now recognize that there are differences in the acid gas HAP emissions from EGUs firing EBCR as compared to EGUs firing other types of coal, including those firing types of coal refuse other than EBCR. Specifically, the EPA recognizes that there are differences between anthracite coal refuse and bituminous coal refuse, and that the type of fuel used leads to differences in the acid gas HAP emissions from EGUs firing those respective fuels. In the February 7, 2019 Proposal (84 FR 2670), the EPA explained that these differences in acid gas HAP emissions support the establishment of a subcategory for such sources and solicited comment on the need to establish a subcategory of certain existing EGUs firing EBCR for acid gas HAP emissions and on potential emissions standards for affected EGUs in that subcategory. After reviewing public comments and other available information, the EPA concludes that such a subcategory is warranted. Thus, this final action establishes a subcategory of certain existing EBCR-fired EGUs for emissions of hydrochloric acid (HCl) and sulfur dioxide (SO_2) – both of which serve as a surrogate for all acid gas HAP emitted from EGUs under MATS. Under CAA section 112(d)(1), the EPA has the discretion to "...distinguish among classes, types, and sizes of sources within a category or subcategory in establishing... standards." Further, when separate subcategories are established,

the minimum level of control, referred to as the "maximum achievable control technology (MACT) floor," is determined separately for each subcategory.

The EPA has determined that emission limits reflecting a more stringent (*i.e.*, "beyond-the-floor") level of control than the MACT floor level of control are appropriate for the new subcategory. The SO_2 emission standard (set in pounds (lb) SO_2/million British thermal units (MMBtu)) that the EPA is promulgating here is an emission rate that the currently operating EBCR-fired EGUs have demonstrated an ability to achieve based on their emissions data and considering cost and non-air quality related environmental factors.[1] The EPA does not have corresponding emissions data for HCl[2] or output-based emissions of SO_2 (*i.e.*, lb SO_2/megawatt-hour (MWh)) and, therefore, the EPA has established the final beyond-the-floor standards for SO_2 (in lb/MWh) and for HCl (in both lb/MMBtu and lb/MWh) consistent with the percentage reduction in the SO_2 lb/MMBtu emissions rate between the MACT floor value and the beyond-the-floor value. This action establishes the following emission limits for the subcategory of existing EBCR-fired EGUs:[3]

HCl: 4.0E-2 lb/MMBtu or 4.0E-1 lb/MWh
SO_2:[4] 6.0E-1 lb/MMBtu or 9.0 lb/MWh.

A further description of what the EPA is promulgating here, the rationale for the final decisions, and discussion of the key comments received regarding the need for such a

[1] For context, the 2012 final MATS emission standard for SO_2 is 2.0E-1 lb/MMBtu.
[2] For MATS, affected sources may report emissions of either SO_2 or HCl. Most MATS-affected EGUs report emissions of SO_2 because they already have the monitoring infrastructure to do so, since most already report SO_2 emissions under the EPA's Acid Rain Program.
[3] Continuous compliance with the emission limits is required to be demonstrated on a 30-boiler operating day rolling average basis.
[4] As is the requirement for all coal-fired EGUs subject to MATS, the alternate SO_2 limit may be used if the EGU has some form of flue gas desulfurization (FGD) system and SO_2 continuous emissions monitoring systems (CEMS) and both are installed and operated at all times.

subcategory and the acid gas HAP emission standards appropriate for that subcategory are provided in section III of this preamble.

B. Does this action apply to me?

Categories and entities potentially regulated by this action are shown in Table 1 of this preamble.

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

NESHAP and Source Category	NAICS code[a]
Coal- and Oil-Fired EGUs	221112, 221122

[a] North American Industry Classification System.

Table 1 of this preamble is not intended to be exhaustive, but rather to provide a guide for readers regarding entities likely to be affected by the final action for the source category listed. Specifically, entities that own and/or operate certain existing EBCR-fired EGUs subject to the NESHAP for Coal- and Oil-Fired EGUs (40 CFR part 63, subpart UUUUU) will be affected by this final action. To determine whether your facility is affected, you should examine the applicability criteria in the NESHAP for Coal- and Oil-Fired EGUs and the amendatory text of this final action. If you have any questions regarding the applicability of any aspect of this NESHAP, please contact the appropriate person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section of this preamble.

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

In addition to being available in the docket, an electronic copy of this action is available on the Internet. Following signature by the EPA Administrator, the EPA will post a copy of this final action at *https://www.epa.gov/mats/regulatory-actions-final-mercury-and-air-toxics-standards-mats-power-plants*. Following publication in the **Federal Register**, the EPA will post the **Federal Register** version of the final rule and key technical documents at this same website.

D. Judicial Review and Administrative Reconsideration

Under CAA section 307(b)(1), judicial review of this final action is available only by filing a petition for review in the United States Court of Appeals for the District of Columbia Circuit (hereafter referred to as "the D.C. Circuit," or "the Court") by **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].** Under CAA section 307(b)(2), the requirements established by this final rule may not be challenged separately in any civil or criminal proceedings brought by the EPA to enforce the requirements.

Section 307(d)(7)(B) of the CAA further provides that only an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review. This section also provides a mechanism for the EPA to reconsider the rule if the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within the period for public comment or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule. Any person seeking to make such a demonstration should submit a Petition for Reconsideration to the Office of the Administrator, U.S. EPA, Room 3000, WJC South Building, 1200 Pennsylvania Ave., NW, Washington, DC 20460, with a copy to both the person(s) listed in the preceding **FOR FURTHER INFORMATION CONTACT** section of this preamble, and the Associate General Counsel for the Air and Radiation Law Office, Office of General Counsel (Mail Code 2344A), U.S. EPA, 1200 Pennsylvania Ave., NW, Washington, DC 20460.

II. Background

The NESHAP for Coal- and Oil-Fired EGUs (commonly referred to as MATS) was

proposed on May 3, 2011 (76 FR 24976), under title 40, part 63, subpart UUUUU. In that proposal, the EPA proposed a single acid gas HAP emission standard for all coal-fired power plants – using HCl as a surrogate for all acid gas HAP. The EPA also proposed an alternative equivalent emission standard for SO_2 as a surrogate for all the acid gas HAP for coal-fired EGUs with FGD systems and SO_2 CEMS installed and operational at all times. SO_2 is also an acidic gas – though not a HAP – and the controls used for SO_2 emission reduction are also effective at controlling the acid gas HAP emitted by EGUs. Further, most, if not all, affected EGUs already measure and report SO_2 emissions as a requirement of the EPA's Acid Rain Program, 40 CFR part 75.

The Appalachian Region Independent Power Producers Association (ARIPPA)[5] submitted comments on the 2011 MATS proposal arguing that the characteristics of all coal refuse made achievement of the standard too costly for its members and requested that the EPA create a subcategory for all EGUs burning coal refuse. The EPA determined that there was no basis to create such a subcategory and, on February 16, 2012 (77 FR 9304), finalized emission standards for both HCl and SO_2 that apply to all coal-fired EGUs, including the coal refuse-fired units subject to this final action. ARIPPA, along with other petitioners, challenged the EPA's determination in the D.C. Circuit, and the Court upheld the final rule. *White Stallion Energy Center, et. al. v. EPA*, 748 F.3d 1222, 1249-50 (D.C. Cir. 2014).

In addition to challenging the final rule, ARIPPA also petitioned the EPA for reconsideration, again requesting a subcategory for the acid gas standards for facilities combusting all types of coal refuse. The EPA denied the Petition for Reconsideration on grounds

[5] ARIPPA is a non-profit trade association comprised of independent electric power producers, environmental remediators, and service providers located in Pennsylvania and West Virginia that use coal refuse as a primary fuel to generate electricity.

that ARIPPA had adequate opportunity to comment on the ability of coal refuse-fired facilities to comply with the final standard. Furthermore, the EPA determined that the ARIPPA petition did not present any new information to support a change in the previous determination regarding the appropriateness of a subcategory for the acid gas HAP standard. ARIPPA subsequently sought judicial review of the denial of the Petition for Reconsideration. *ARIPPA v. EPA*, No. 15-1180 (D.C. Cir.).[6] In petitioner's briefs, ARIPPA claimed that the EPA had misunderstood its reconsideration petition and pointed to a distinction between the control of acid gas HAP emissions from units burning anthracite coal refuse and those burning bituminous coal refuse. *See* Industry Pets. Br. at 35-36, *ARIPPA*, No. 15-1180 (D.C. Cir. filed December 6, 2016). The EPA disagrees with the assertion that the Agency misunderstood the basis for ARIPPA's reconsideration petition as we could not find a single statement in the rulemaking record that clearly or even vaguely requested a separate acid gas HAP limit based on the distinction between anthracite coal refuse and bituminous coal refuse. Nonetheless, the EPA has since looked at emissions data from these sources and observed that there are differences in emissions based on the type of coal refuse used, and, consequently, recognized the differences in the 2019 Proposal.[7] Specifically, the EPA recognized that there are differences between anthracite coal refuse and bituminous coal refuse, and that the type of fuel used leads to differences in the acid gas HAP emissions from EGUs firing those respective fuels. The Agency also noted that the differences may impact the unit's ability to control those emissions. Additionally, the EPA recognized that there are differences between western bituminous coal refuse and subbituminous coal refuse as

[6] ARIPPA's petition for review is currently being held in abeyance. *ARIPPA v. EPA*, No. 15-1180, Order, No. 1672985 (April 27, 2017).

[7] The analysis is summarized in a separate memorandum titled *HCl and SO_2 Emissions for Coal Refuse-Fired EGUs*, available in Docket ID No. EPA-HQ-OAR-2018-0794.

compared to EBCR and announced in the 2019 Proposal that it was considering establishing a subcategory of certain existing EGUs firing EBCR for emissions of acid gas HAP. The proposal solicited comment on whether establishment of such a subcategory is needed and on the acid gas HAP emission standards that would be established if such a subcategory was created. 84 FR 2700-2703.

III. Summary of Final Action

After considering and evaluating comments and data provided in response to the solicitation of comment on establishing a subcategory of certain existing EGUs firing EBCR for emissions of acid gas HAP in its 2019 Proposal, the EPA is taking final action to establish a separate subcategory to address the issue. In this final action, the EPA is establishing a subcategory of certain existing EGUs firing EBCR for emissions of acid gas HAP and acid gas HAP emission standards that are applicable to the new subcategory. The final rule defines *Eastern bituminous coal refuse (EBCR)* to mean coal refuse generated from the mining of bituminous coal in Pennsylvania and West Virginia. The final rule defines *Unit designed for eastern bituminous coal refuse (EBCR) subcategory* to mean any existing (*i.e.*, construction was commenced on or before May 3, 2011) coal-fired EGU with a net summer capacity of no greater than 150 megawatts (MW) that is designed to burn and that is burning 75 percent or more (by heat input) *eastern bituminous coal refuse* on a 12-month rolling average basis. The 150 MW net summer capacity level selected by the EPA limits the universe of sources that are in the new subcategory to only those EGUs identified in Table 2 to this preamble. Net summer capacity is the maximum output that generating equipment can supply to system load at the time of summer peak demand (period of June 1 through September 30). The 75 percent or more heat input requirement selected by the EPA is consistent with the Federal Energy Regulatory Commission

requirement that to be considered a qualifying facility under the Public Utility Regulatory Policies Act, as the EGUs in the new subcategory are, at least 75 percent of the heat content must come from coal refuse.

The existing EBCR-fired EGUs in the new subcategory being established in this action are listed in Table 2 of this preamble and the applicable HCl and SO_2 limits being finalized in this action are provided in Table 3 of this preamble. Four existing EBCR-fired EGUs at two facilities that were listed in the 2019 Proposal as being part of the new subcategory, if established, are no longer part of the subcategory. The EPA has learned that the Cambria facility shut down in June 2019, and the facility and surrounding property have been sold to a salvage company which plans to dismantle the facility over time.[8] The EPA has also learned that the Morgantown Energy facility will be transformed into a natural gas-fueled steam-only production facility, and the closure of the waste coal-fired boilers and complete transformation of the facility to steam-only production are expected to be completed by early to mid-2020.[9]

TABLE 2. EBCR-FIRED EGUs IN SUBCATEGORY

ORIS Plant Code[a]	EGU	State	Summer Capacity (MW)	2016 Average Monthly Generation (MWh)[b]
10143	Colver Power Project	PA	110	60,905
10151	Grant Town Power Plant Unit 1A	WV	40	28,010
10151	Grant Town Power Plant Unit 1B	WV	40	28,010
10603	Ebensburg Power	PA	50	16,258
50974	Scrubgrass Generating Company LP Unit 1	PA	42	17,377
50974	Scrubgrass Generating Company LP Unit 2	PA	42	17,377

[8] *See https://www.tribdem.com/news/cambria-cogen-plant-to-be-leveled-after-shutting-down-over/article_005a162c-2381-11ea-8c53-5b85339774fd.html.*
[9] *See https://www.nsenergybusiness.com/news/starwood-energy-terminates-eepa/.*

[a] Unique plant identification code assigned by the Department of Energy's Energy Information Administration (EIA).
[b] 2016 annual generation is based on plant-level data reported on EIA Form 923, and annual totals are divided evenly to estimate 2016 average monthly generation. Unit-level estimates assume that generation is split evenly between all units at each plant.

TABLE 3. ACID GAS EMISSION LIMITATIONS FOR EBCR-FIRED EGUs SUBCATEGORY

Subcategory	Emission Limit[a]	
	HCl	SO_2[b]
Existing Eastern Bituminous Coal Refuse-Fired EGUs	4.0E-2 lb/MMBtu or 4.0E-1 lb/MWh	6.0E-1 lb/MMBtu or 9.0 lb/MWh

[a] Units of emission limits:
lb/MMBtu = pounds pollutant per million British thermal units fuel input; and
lb/MWh = pounds pollutant per megawatt-hour electric output (gross).
[b] Alternate SO_2 limit may be used if the EGU has some form of FGD system and SO_2 CEMS installed.

Sources in the new subcategory must comply with the applicable HCl or SO_2 requirements no later than the effective date of this final rule. Sources must demonstrate that compliance has been achieved, by conducting the required performance tests and other activities as specified in 40 CFR part 60, subpart UUUUU, no later than 180 days after the compliance date. To demonstrate initial compliance using either an HCl or SO_2 CEMS, the initial performance test consists of 30-boiler operating days. If the CEMS is certified prior to the compliance date, the test begins with the first operating day on or after that date. If the CEMS is not certified prior to the compliance date, the test begins with the first operating day after certification testing is successfully completed. Continuous compliance with the newly established emission limits is required to be demonstrated on a 30-boiler operating day rolling average basis.

The EPA's final decisions regarding establishing a subcategory for certain existing EGUs that fire EBCR and the acid gas HAP standards applicable to the new subcategory are provided

later in this section of this preamble. Specifically, the EPA's rationale for the final decisions and discussion relating to the key comments received regarding the need for such a subcategory and the attendant acid gas HAP emission standards are provided. A summary of all significant public comments regarding the EPA's consideration of establishing such a subcategory and the EPA's responses to those comments is available in the document titled *Summary of Public Comments and Responses Regarding Establishment of a Subcategory and Acid Gas HAP Emission Standards for Certain Existing Eastern Bituminous Coal Refuse-Fired EGUs* (response to comments document), Docket ID No. EPA-HQ-OAR-2018-0794. A "track changes" version of the regulatory language that incorporates the changes in this action is also available in the docket for this action.

A. Basis for Subcategory

Under CAA section 112(d)(1), the Administrator has discretion to "* * * distinguish among classes, types, and sizes of sources within a category or subcategory in establishing * * *" standards. Based on the EPA's better understanding of the differences in anthracite coal refuse and bituminous coal refuse, and the acid gas HAP emissions profile associated with each, the EPA has now determined that, contrary to its earlier position, it is appropriate to establish a new subcategory for certain units firing EBCR. Specifically, the EPA is establishing a new subcategory for certain units with a net summer capacity of 150 MW or lower that fire EBCR because there are differences between emissions of acid gas HAP from these units and larger units burning EBCR and units burning other types of coal, including other types of coal refuse. *See U.S. Sugar Corp. v. EPA*, 830 F.3d 579, 656 (D.C. Cir. 2016) (finding that "[s]ection 7412(d) gives the EPA discretion to create subcategories based on boiler type, and nothing in the statute forecloses the Agency from doing so based on the type of fuel a boiler was designed to

burn."). Units in this new subcategory of EGUs are smaller, were designed to burn EBCR, and were constructed in close proximity to legacy piles of EBCR for the primary purposes of reclaiming abandoned mining sites while reducing the environmental hazards attendant to such piles of coal refuse. The EPA cannot predict with certainty what the industry response would be absent the establishment of a new subcategory as discussed in greater detail elsewhere in this preamble and in a docketed memorandum on expected costs and benefits. Among those possible outcomes, many industry commenters and others have suggested that some – and maybe all – of the affected sources would shut down.[10] If that is the case, then the establishment of this new subcategory will allow those units to continue to achieve both of their purposes of reclaiming abandoned mining sites and preserving the environmental benefits of repurposing coal refuse, while also maintaining emissions of acid gas HAP at levels similar to current emissions levels.[11]

Immediately below and in the response to comments document, we discuss in more detail the basis for the new subcategory and address the significant comments on the new subcategory.

As stated in the 2019 Proposal, the EPA finds that the emissions of acid gas HAP from EGUs firing EBCR are distinct from acid gas HAP emissions from EGUs firing other types of coal – including other forms of coal refuse. Specifically, the EPA recognized in the 2019 Proposal that there are differences between anthracite coal refuse and bituminous coal refuse,

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[10] While the EPA cannot predict with certainty what the industry response would be in the absence of a new subcategory, commenters' claims that the units would shut down is plausible. Coal-fired power plants are currently facing tremendous competitive pressures. As a result, coal's share of total U.S. electricity generation has been declining for over a decade, while generation from natural gas and renewables has increased significantly. A large number of coal units – especially smaller ones like the EBCR-fired EGUs – have retired since 2010. As mentioned earlier, four of the ten units that were identified as affected by this action in the 2019 Proposal have now either retired or announced plans to convert to natural gas.

[11] EBCR-fired EGUs were designed to achieve a control level generally at or exceeding 90 percent SO_2 reduction (*see* EPA Docket ID Item Nos. EPA-HQ-OAR-2018-0794-1125, EPA-HQ-OAR-2018-0794-1154, and EPA-HQ-OAR-2018-0794-1187).

and that the type of fuel used leads to differences in the acid gas HAP emissions from EGUs firing those respective fuels. Bituminous coals (and, thus, bituminous coal refuse) from the Appalachian and Interior Regions of the U.S. have higher sulfur and chlorine contents than anthracite or coals of all types from the Western Region of the U.S. (and, thus, anthracite coal refuse or western bituminous and subbituminous coal refuse), and these differences lead to differences in emissions of acid gas HAP. These differences between the types of coal refuse used by EGUs to generate electricity may also impact a unit's ability to control those emissions. All coal refuse fuels are fired in fluidized bed combustors (FBC) that use limestone injection to reduce SO_2 emissions and to increase heat transfer efficiency. The EPA has been informed that limestone injection technology is generally adequate to allow EGUs that are firing anthracite coal refuse and western coal refuse to meet the 2012 final MATS alternative surrogate emission standard of 2.0E-1 lb/MMBtu for SO_2.[12] This is because anthracite coals are naturally much lower in impurities (including sulfur and chlorine) and western coals (western bituminous coal and subbituminous coal) have lower sulfur and chlorine content and higher free alkalinity (which can act as a natural sorbent to neutralize acid gases produced in the combustion process). The same is not generally true for EGUs combusting EBCR. Because all existing EGUs firing anthracite coal refuse and western bituminous coal refuse are currently emitting SO_2 at rates that are below the 2012 final MATS emission standard for SO_2 and the existing EGU firing subbituminous coal refuse is currently emitting HCl at a rate that is below the 2012 final MATS emission standard for HCl, the EPA believes there is no need to broaden the subcategory to include those units.

The EBCR-fired EGUs that will be included in the new subcategory are also small units

[12] *See* Table 2 to subpart UUUUU of 40 CFR part 63.

(all have capacities less than 120 MW and most are less than 100 MW). As contemplated in the 2019 Proposal, this final rule excludes the two EBCR-fired EGUs at the Seward Generating Station in Pennsylvania from the new subcategory. 84 FR 2702. Those units are the newest and, at 260 MW each, are, by far, the largest coal refuse-fired EGUs. The Seward units were also designed and constructed with downstream acid gas controls already incorporated, so they do not have the space limitations and other configurational challenges that may affect other smaller existing EBCR-fired EGUs attempting to retrofit air pollution controls. Retrofitting air pollution controls to an existing EGU can often be challenging due to lack of available space within the facility and the potential need to re-route the exhaust gas stream to accommodate such equipment configurational changes. Control equipment that results in pressure drop along the exhaust stream can challenge existing blowers. These challenges and space limitations can be considered in the design of a new facility. The Seward units were among the best performing EGUs – with respect to HCl emissions – when the EPA developed the final MATS emission standards and, based on MATS compliance reports for the Seward EGUs, currently emit HCl at well below the final MATS HCl standard of 2.0E-3 lb/MMBtu, applicable to coal-fired EGUs.[13]

In response to the 2019 Proposal's solicitation of comment, the EPA received comments both supporting and opposing the establishment of a subcategory of certain existing EGUs firing EBCR for emissions of acid gas HAP.

Several commenters pointed out the environmental benefits provided by EBCR-fired EGUs in the coal regions where they are located. Specifically, commenters pointed out that removal of coal refuse piles reduces surface and groundwater pollution from acidic drainage and reduces uncontrolled emissions of air pollutants that are released from self-ignited internal

[13] Ibid.

smoldering of the coal refuse piles. In addition, commenters pointed out that the alkaline ash produced by EBCR-fired EGUs is used to reclaim mining-affected lands by returning them to a productive use. Commenters further noted that the Pennsylvania Department of Environmental Protection has standards governing such beneficial use of coal ash in mine land reclamation (Title 25 PA Code, Chapter 290).[14]

Several commenters asserted that the 2012 final MATS limits for acid gas HAP and their SO_2 surrogate are not achievable by EBCR-fired EGUs and do not reflect the design, functionality, and economics of those units. Commenters stated that while limestone injection into the unit's combustion zone controls SO_2 and HCl emissions to a certain extent, there are operational and design limitations on the EGUs' ability to provide an adequate amount of limestone to reduce SO_2 and HCl emissions beyond a certain point. Commenters further stated that the reduction of SO_2 and acid gases through increased injection of limestone is asymptotic, and significant additional limestone does not result in further significant acid gas emission reduction. Commenters explained that the configuration of the EGUs and their combustion zone physically limit the amount of material that the unit can hold, which impacts and limits the amount of coal refuse and limestone that can be injected into the unit. Commenters explained, for example, that increasing the amount of limestone injected to achieve the 2012 final MATS SO_2 emission limit could result in less coal refuse being fired. This would result in a corresponding reduction in steam production and electricity generation, making it uneconomic to operate in the current power market.

The EPA does not have detailed information regarding the specific amount of limestone

[14] *See https://www.dep.pa.gov/Business/Land/Mining/BureauofMiningPrograms/Pages/CoalAshBeneficialUse.aspx*.

that is injected into the EBCR-fired EGUs. However, the Agency acknowledges that it is current industry practice to inject limestone into the FBC in amounts based on an optimized calcium-to-sulfur (Ca:S) molar ratio. Therefore, the optimum limestone injection amount will vary with the sulfur content of the coal refuse being burned. Along with the coal (fuel) and limestone that are injected and utilized, the fluidized bed units also contain an inert bed material (*e.g.*, sand or other). There is a limit to the amount of solid material – *i.e.*, the sand, the coal refuse, coal ash, and limestone – that can be in the combustor. An increase in limestone injection may necessarily result in a decrease in coal refuse utilization. Utilization of the limestone for acid gas neutralization is dependent upon decomposition (calcination) of the limestone to lime and subsequent reaction of the lime with the acid gases via the following reactions:

$CaCO_3$ + heat → $CaO + CO_2$

$SO_2 + CaO \rightarrow CaSO_3$

$2HCl + CaO \rightarrow CaCl_2 + H_2O$

The necessary calcination of the limestone and the desulfurization reactions occur within specific temperature ranges (typically around ~ 900 °Celsius or 1,650 °Fahrenheit) and the FBC operators must utilize sufficient fuel to maintain the boiler in the optimum temperature range. Lower temperatures result in insufficient calcination and lower boiler efficiency. Higher temperatures can result in materials sintering, which results in lower desulfurization capacity.

Commenters also noted concerns that a significant increase in limestone injection for control of SO_2 emissions could negatively impact the ability to beneficially use the combustion fly ash.[15] For example, for certain uses, the Pennsylvania Department of Environmental

[15] The combustion ash is beneficially used on mine sites to fill pits, create or amend soil, and as a low-permeability or high alkalinity material. In Pennsylvania the regulations governing the

Protection *Guidelines for Beneficial Use of Coal Ash at Coal Mines*[16] warns that mixing of coal ash with conventional alkaline materials (*e.g.*, limestone, lime, hydrated lime) may increase the likelihood of the coal ash becoming cementitious and reduce the neutralizing ability of the coal ash and the conventional material. In such cases, the captured fly ash would have to be disposed of in a lined landfill rather than beneficially reused. Commenters also contended that EBCR-fired EGUs may have to consider switching from EBCR as the primary fuel to firing less EBCR along with a lower sulfur fuel as a means of reducing SO_2 emissions to meet the 2012 final MATS SO_2 emission limit. Commenters stated that such practice, in addition to being uneconomical, could reduce EBCR usage to below the minimum 75-percent coal refuse heat input requirement to be considered a qualifying facility under the Public Utility Regulatory Policies Act. Commenters claimed that both approaches described earlier (*i.e.*, increased limestone injection and fuel switching) undermine the environmental benefits realized by the EBCR-fired EGUs through clean-up of waste coal refuse sites.

One commenter stated that regardless of limestone addition and fuel switching, meeting the 2012 final MATS SO_2 limit would require additional control technology and likely result in permanent retirement of the facility. Several commenters pointed out that they are not aware of any retrofit installation of back-end scrubbing technology or a back-end dry sorbent injection (DSI) system for an EBCR-fired EGU. Commenters asserted that downstream acid gas controls cannot be considered technically or economically feasible for EBCR-fired EGUs and provided

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beneficial use of coal ash are available at 25 PA Code Chapter 290. *See http://www.dep.pa.gov/Business/Land/Mining/BureauofMiningPrograms/Pages/CoalAshBeneficialUse.aspx*.

[16] Pennsylvania Department of Environmental Protection Bureau of Mining Programs; Document Number: 563-2112-228; *Guidelines for Beneficial Use of Coal Ash at Coal Mines*; Effective date: December 17, 2016.

information regarding evaluation of such technologies. Commenters claimed that adding on back-end control equipment would boost sulfur capture, but the capital and operating costs increases would not be supported by power sales revenues. Commenters further claimed that in addition to being cost prohibitive for the small EBCR units, control strategies such as wet FGD scrubbers and spray dryer absorbers (SDA) present installation difficulties given layout of the facilities, local topography, and needs of the systems to interface with existing EGU equipment.[17] Although commenters acknowledged that DSI systems do not present such technical challenges with deployment, they pointed out other problems associated with the alkaline sorbents (typically sodium- or calcium-based) injected in such systems. Several commenters stated that coal refuse-fired EGUs currently achieve extremely efficient mercury (Hg) control due, at least in part, to the relatively high levels of chlorine in coal refuse which can promote the oxidation of the Hg to the divalent form. This, coupled with the higher levels of unburned carbon in the fly ash, allows the Hg to be more readily captured in the downstream baghouse (*i.e.*, fabric filter particulate matter (PM) control device) and not emitted through the stack. Commenters explained that reducing the amount of chlorine (or HCl) in the flue gas prior to the oxidation reaction can have the effect of increasing Hg emissions from the facility. One commenter stated that their testing of both sodium- and calcium-based sorbents injected at the inlet of the baghouse (essentially in a DSI configuration) resulted in an increase in Hg emissions by a factor of 4 to 40 times resulting in levels exceeding the 2012 final MATS Hg emission

[17] *See* EPA Docket ID Item Nos. EPA-HQ-OAR-2018-0794-1154 and EPA-HQ-OAR-2018-0794-1160 for additional discussion of commenters' claims of physical and configurational difficulties in installing downstream control technologies.

limit.[18] Therefore, the commenter asserted that, even if technically feasible, the use of DSI could affect the unit's ability to meet other MATS emission limits. Several commenters stated that the potential for DSI technology to have a negative impact on the ability to use combustion ash for mine site reclamation and restoration activities would remove it as a viable alternative. Commenters explained that use of sodium-based sorbents (*e.g.*, trona or sodium bicarbonate) could alter the leaching characteristics of the ash such that it would no longer be of beneficial use and would have to be disposed of in a lined landfill. One commenter stated that testing at their facility confirmed such a change in the quality of the ash to the point that it was at risk of failing to satisfy leaching requirements of the standards for beneficial use in mine land reclamation. Commenters claimed that ash disposal costs, especially when considering the significant quantity of ash generated, would far exceed the revenue generated through the sale of electricity. Commenters also pointed out that significant environmental benefits provided by EBCR-fired EGUs would be eliminated if the ash cannot be beneficially used.

Several commenters asserted that there is no justification for establishing a subcategory of certain existing EGUs firing EBCR for emissions of acid gas HAP. Commenters claimed that the EPA has not provided a valid technical basis for the subcategory, stating that while the EPA has said that eastern bituminous coal is distinguished by higher sulfur content and lesser content of free alkali, the EPA offers nothing to distinguish the EGUs it would subcategorize from other EGUs burning the same coals and subject to MATS. Commenters further claimed that there is no basis for a subcategory for EBCR-fired EGUs because some of those EGUs currently emit SO_2

[18] This testing is described in materials provided to the EPA by ARIPPA during a March 13, 2013, meeting. The materials are available in the previous MATS rulemaking Docket ID Item No. EPA-HQ-OAR-2009-0234-20338 and in the current Docket ID No. EPA-HQ-OAR-2018-0794.

at rates below the 2012 final MATS SO_2 limit and have shown that the current standards are achievable because there are technologies that are feasible. Commenters stated that the assessment of the need for a subcategory cannot reasonably be based on data for the period of January 2015 through June 2018, terminating before EGUs reported results of installed pollution controls. Commenters added that even if limestone injection alone is not adequate to meet the MATS limits, the fact that certain EGUs would need to install additional controls is not a valid basis for a subcategory. Commenters also added that the EPA may not subcategorize based on cost, even if some add-on controls would be particularly expensive, and the EPA may not alter the MACT floor because some sources may not be able to meet it. Commenters further stated that the EPA notes that the use of some sorbents may negatively impact the salability of fly ash, but commenters contend that losing the ability to sell the ash—a consequence for all EGUs using DSI, not just those using eastern bituminous coal-waste—does not suggest any basis in the class, type, or size of the EGUs at the six plants that might allow the EPA to set different standards for those EGUs. Commenters pointed to a plant within the proposed subcategory that they contend demonstrates that units can meet the MATS acid gas limits while still re-using their ash. Commenters refuted the EPA's assertion that use of DSI technology results in a considerable increase in Hg emissions and would require the use of additional Hg controls, and, further, stated that even if true, it provides no lawful basis for the subcategory. Commenters pointed to EBCR-fired EGUs that they contend not only can meet both the MATS acid gas and Hg limits, they can achieve such low emissions of Hg that they qualify for low-emitting EGU status (*i.e.*, their emissions are less than 10 percent of the MATS limit) without any Hg-specific controls. Commenters added that CAA section 112 does not permit the EPA to loosen emission limitations based on the EPA's desired control configuration.

The EPA disagrees with comments opposed to establishing a new subcategory of certain existing EGUs firing EBCR for emissions of acid gas HAP. Under CAA section 112(d)(1), the Administrator has the discretion to "...distinguish among classes, types, and sizes of sources within a category or subcategory in establishing..." standards. The EPA generally establishes subcategories to address differences between units that make the nature of the HAP emissions different or if there are technical feasibility issues associated with different emission control approaches. Normally, the basis for subcategorizing (*e.g.*, type of unit) must be related to an effect on emissions, rather than some difference which does not affect emissions performance. EGUs are generally designed for a particular type of fuel, and the type of fuel being burned can impact the degree of combustion and the level and type of HAP emissions because the amount of fuel-borne HAP such as acid gases is primarily dependent upon the composition of the fuel. In addition, the type of fuel and attendant unit design can limit the availability and functionality of different types of controls, particularly for existing sources that must retrofit if add-on controls are required. Finally, the D.C. Circuit recently confirmed that the EPA may establish a subcategory based on the type of fuel a boiler is designed to burn. *See U.S. Sugar Corp. v. EPA*, 830 F.3d at 656. Consistent with the statute and case law, the EPA is establishing a subcategory based on the size (boiler 150 MW or less) and type (boiler designed to burn EBCR) to address the different acid gas HAP emissions from such sources.

To inform our consideration, the EPA reviewed EGU design, operating information, air emissions data compiled from the 2010 Information Collection Request (ICR) that was used by the EPA during development of the 2012 MATS final rule, and other available information for coal-fired EGUs in the source category. The EPA found that there are significant design and operational differences in coal-fired EGUs that are based on the expected source of fuel and the

design of the unit that affect the levels of emissions of HCl and SO_2--both of which serve as a surrogate for all acid gas HAP emitted from coal-fired EGUs under MATS. These differences support our decision to establish a subcategory for existing EGUs that burn EBCR and have a net summer capacity of 150 MW or lower. Specifically, the emissions data for HCl and SO_2 show a distinguishable difference in performance exists between coal-fired units with a net summer capacity of no greater than 150 MW designed to burn EBCR and other coal-fired units, including units that burn coal refuse other than EBCR.[19] [20] Because the EBCR-fired units have different emission characteristics for acid gas HAP, the EPA has determined that units that are designed to burn EBCR, and actually burn at least 75-percent EBCR, are a different type of unit and should be subcategorized for acid gas HAP emissions.[21]

The determination that EBCR-fired EGUs have different emission characteristics for acid gas HAP is reasonably based on the same 2010 ICR dataset used to establish the bases of subcategories and standards in the 2012 MATS final rule. An examination of the data shows that there were no coal-fired units with a net summer capacity of 150 MW or less designed to burn EBCR among the top performing 12 percent of coal-fired units for emissions of HCl or SO_2, even though the EPA used 12 percent of the entire source category (130 units) to establish the acid gas HAP standard for coal-fired EGUs. There were, however, EGUs firing bituminous coal, subbituminous coal, and lignite among the top performing units for HCl and EGUs firing

[19] As discussed earlier in this section of this preamble, the subcategory being established in this final rule excludes the two EBCR-fired EGUs at the Seward Generating Station, which are 260 MW each, from the new subcategory.

[20] *See* the memorandum titled *HCl and SO_2 Emissions for Coal Refuse-Fired EGUs*, available in Docket ID No. EPA-HQ-OAR-2018-0794.

[21] For all other HAP from these two subcategories of coal-fired units, the data did not show any difference in the level of the HAP emissions and, therefore, we have determined that it is not reasonable to establish separate emissions limits for the other HAP.

bituminous, subbituminous, lignite, and non-EBCR coal refuse among the top performers for SO_2. The EPA points out that the assessment of the need for a subcategory was not based on data for the period of January 2015 through June 2018 as suggested by commenters. As discussed in section III.B of this preamble, those data were used to determine the SO_2 lb/MMBtu emission rate for beyond-the-floor level of control. The EPA disagrees with commenters' assertions that the fact that some EBCR-fired EGUs have met the 2012 final MATS SO_2 limit means the new subcategory is unreasonable. The EPA is aware of EGUs at two plants[22] that have been able to meet the 2012 final MATS SO_2 limit. Historical SO_2 emissions data reported to the EPA's Emissions Collection and Monitoring Plan System (ECMPS) for those EGUs shows that those plants had lower SO_2 emissions than other EBCR-fired EGUs. Thus, the additional SO_2 emissions reductions required for those EGUs to meet the 2012 final MATS SO_2 limit are more likely to be achievable through means such as increased limestone injection and fuel switching without the limitations described by several commenters and summarized earlier in this section of the preamble. The EPA's understanding, however, is that the operational changes made to those EGUs with historically lower SO_2 emissions in order to meet the 2012 final MATS SO_2 limit result in less EBCR being disposed of and are not economically feasible in the long term. One facility has met the SO_2 limit by injecting more limestone and the other facility has met the limit by co-firing lower sulfur coal. Similarly, the ability of those same units to meet the 2012 final MATS acid gas HAP limit as well as the Hg limit or to meet the 2012 final MATS acid gas HAP limit while still re-using their ash does not mean a separate subcategory is unwarranted or unreasonable. The information in the record supports a conclusion that the existing EGUs in the

[22] Neither of these two plants with EBCR-fired EGUs that have met the 2012 final MATS SO_2 limit are the Seward Generating Station discussed earlier in this section of this preamble.

new subcategory are different from a fuel and design perspective and it is reasonable to establish a new subcategory based on the size and type of unit. In addition, this new subcategory is also reasonable because the alternative is to maintain a standard that requires the sources to operate in a manner that undermines the purpose for which they were constructed and may be technologically infeasible for certain units in the subcategory. Specifically, the coal refuse-fired EGUs at issue were constructed at or near legacy piles of EBCR for the primary purposes of reducing the health and environmental hazards associated with the coal piles and using the resultant coal ash to reclaim abandoned mining sites. The commenters in support of the rule provided information indicating the reasons the new subcategory is warranted and how requiring compliance with the 2012 MATS limit for acid gas HAP would undermine the continued viability of the EBCR-fired EGUs to perform both of these functions.

For all these reasons, we do not agree that the commenters have raised any significant objections to the EPA's determination that it is reasonable and appropriate to establish a new subcategory for EBCR-fired EGUs. Accordingly, we are finalizing the new subcategory.

B. Subcategory Emission Standards

As noted in the 2019 Proposal, the EPA conducted an analysis to determine the numerical acid gas emission standards for the subcategory of certain existing EGUs that fire EBCR should such a subcategory be established.[23] The EPA explained that it determined the MACT floor and the beyond-the-floor (*i.e.*, more stringent than the MACT floor) levels of control for HCl and SO_2 emissions. The EPA further explained that the SO_2 lb/MMBtu emission rate for beyond-the-

[23] The analysis is summarized in a separate memorandum titled *NESHAP for Coal- and Oil-Fired EGUs: MACT Floor Analysis and Beyond the MACT Floor Analysis for Subcategory of Existing Eastern Bituminous Coal Refuse-Fired EGUs Under Consideration*, available in Docket ID No. EPA-HQ-OAR-2018-0794.

floor level of control was determined for each currently operating EBCR-fired EGU using monthly SO_2 data available in the EPA's ECMPS for the period of January 2015 through June 2018.[24] The EPA stated that if a beyond-the-floor (with floor at 1.0 lb/MMBtu) SO_2 emissions limit was established, it would likely be in the range of 0.60 – 0.70 lb/MMBtu; a limit that, on average, the currently operating EBCR-fired EGUs have demonstrated an ability to achieve based on their monthly emissions data for January 2015 through June 2018. The EPA explained that due to data limitations (*i.e.*, no HCl lb/MMBtu or lb/MWh emissions data have been submitted for the currently operating EBCR-fired EGUs, and SO_2 lb/MWh emissions data are available for only two of the currently operating EBCR-fired EGUs), this same beyond-the-floor methodology used to determine the beyond-the-floor standards for SO_2 in lb/MMBtu could not be used to evaluate beyond-the-floor standards for SO_2 in lb/MWh or for HCl in either lb/MMBtu or lb/MWh. The EPA, therefore, further explained that it determined that beyond-the-floor standards for those pollutants, if established, should reasonably be set based on the same percentage reduction as the SO_2 lb/MMBtu described earlier (*i.e.*, the 40-percent reduction in the emissions rate for SO_2 between the calculated MACT floor value of 1.0 lb/MMBtu and the beyond-the-floor value of 0.60 lb/MMBtu). The EPA solicited comment on the analysis conducted to determine the numerical acid gas emission standards and, on its methodology, and results. Table 4 of this preamble shows the results of the MACT floor and beyond-the-floor analyses as discussed in the 2019 Proposal.

[24] At the time of the 2019 Proposal's analysis, SO_2 data through June 2018 were available. Data that have become available only after the 2019 Proposal is not a necessary basis of our discussion of that Proposal or the EPA's final action here, but it generally corroborates the basis already available and noticed to the public in February 2019. New data that have since become available to the EPA are discussed later in this section of this preamble.

TABLE 4. MACT FLOOR AND BEYOND-THE-FLOOR RESULTS FOR POTENTIAL EBCR-FIRED EGUs SUBCATEGORY

Subcategory	Parameter	HCl	SO_2
Existing Eastern Bituminous Coal Refuse-Fired EGUs	Number in MACT Floor	5	5
	99% UPL[a] of Top 5 (*i.e.*, MACT floor)	6.0E-2 lb/MMBtu	1.0 lb/MMBtu
		6.0E-1 lb/MWh	15 lb/MWh
	Beyond-the-floor Standard	4.0E-2 lb/MMBtu	6.0E-1 lb/MMBtu
		4.0E-1 lb/MWh	9.0 lb/MWh

[a] Upper prediction limit.

Immediately below and in the response to comments document, we discuss in more detail the basis for the acid gas HAP emission standards that are applicable to the new subcategory and address the significant comments on the standards for the new subcategory.

In response to the 2019 Proposal's solicitation of comment, the EPA received comments both supporting and opposing its analysis to determine the numerical acid gas emission standards for a subcategory of existing EBCR-fired EGUs. Several commenters agreed with the methodology that the EPA used to determine the MACT floor and beyond-the-floor levels of control for emissions of SO_2 and HCl. Commenters further stated that an SO_2 limit of 0.6 lb/MMBtu, as discussed in the 2019 Proposal, is reasonable, technologically and economically defensible, and would allow facilities to continue providing multimedia environmental benefits from coal refuse reclamation and remediation of mining-affected lands. Other commenters disagreed with the EPA's analyses of the MACT floor and beyond-the-floor levels of control and the resulting emission limits presented in the 2019 Proposal. Specifically, commenters disagreed with the data used in the analyses, claiming that it is not representative of the emissions reductions achieved in practice by the best-performing sources because it excludes time periods when controls were installed. In addition, commenters stated that the beyond-the-floor analysis fails to recognize that each plant in the subcategory already has acid gas controls sufficient to

meet the current standard and, instead, assumes that such controls are infeasible. Further, commenters stated that the only relevant cost for purposes of any beyond-the-floor standard is the cost of operating (rather than installing) the control.

The EPA disagrees with those comments opposing the data used in the MACT floor and beyond-the-floor analyses and the resulting emission limits. The MACT floor analyses for HCl and SO_2 for the subcategory of EBCR-fired EGUs are reasonably based on the same 2010 ICR dataset and methodology used to determine MACT floor emission values for pollutants regulated under the 2012 MATS final rule. HCl and SO_2 emissions data for the EBCR-fired EGUs that were operating at the time of the 2012 MATS final rule were used to calculate separate existing source MACT floors for HCl in lb/MMBtu and lb/MWh and SO_2 in lb/MMBtu and lb/MWh. Thus, the MACT floor analysis and resulting floor values are consistent with how MACT floors for other HAP emissions standards were calculated and are representative of the HCl and SO_2 emissions reductions achieved in practice by the best-performing EBCR-fired EGUs at that time, irrespective of the means that the reductions were achieved.

The beyond-the-floor analysis and resulting beyond-the-floor emission limit for SO_2 lb/MMBtu are reasonably based on the extensive data available in the EPA's ECMPS for each currently operating EBCR-fired EGU. As described in the 2019 Proposal, an SO_2 emission limit of 0.6 lb/MMBtu is a limit that the currently operating EBCR-fired EGUs have demonstrated an ability to achieve based on their monthly emissions data for January 2015 through June 2018. Any means being used to control acid gases during that time period would be reflected in the average SO_2 lb/MMBtu emission rate for those EBCR-fired EGUs. Thus, the EPA's analysis does not exclude time periods when controls were installed. We note, however, that we are unaware of any EBCR-fired EGUs that have installed any downstream acid gas controls in

addition to limestone injection into the FBC in response to the 2012 MATS rule. Further, the EPA has confirmed that extending the time horizon through March 2019 to include emissions data that have become available since the analysis for the 2019 Proposal would not result in changes to average SO_2 lb/MMBtu emission rates for the currently operating EBCR-fired EGUs nor to the SO_2 emission limit of 0.6 lb/MMBtu that, on average, those EGUs have achieved for that time period.[25]

Contrary to some comments, the beyond-the-floor analysis does recognize that each EBCR-fired EGU in the subcategory has controls to address acid gas emissions and, as explained earlier, average SO_2 lb/MMBtu emission rates reflect those controls. In addition, the 2019 Proposal, as well as section III.A of this preamble, point out that all coal refuse fuels are fired in FBC that use limestone injection to minimize SO_2 emissions and to increase heat transfer efficiency. As discussed in section III.A of this preamble, commenters have pointed out, however, that there are limitations on the ability of existing EBCR-fired EGUs to control acid gas emissions to the level of the 2012 final MATS acid gas standard by increasing the amount of limestone injected. As such, the EPA disagrees with comments claiming that the current controls are sufficient to meet the 2012 final MATS acid gas standard and that, therefore, the only relevant cost for purposes of any beyond-the-floor standard is the cost of operating (rather than installing) the control. As also discussed in section III.A of this preamble, commenters have

[25] Including EBCR-fired EGUs' SO_2 emissions data for the time period of July 2018 through March 2019 results in minor changes to average SO_2 emissions values for some EBCR-fired EGUs but does not result in a change to the beyond-the-floor emission limit for SO_2 lb/MMBtu. Nevertheless, the more recent SO_2 data is included in an addendum to the 2019 Proposal's analysis, titled *NESHAP for Coal- and Oil-Fired EGUs: Addendum to MACT Floor Analysis and Beyond the MACT Floor Analysis for Subcategory of Existing Eastern Bituminous Coal Refuse-Fired EGUs Under Consideration*, available in Docket ID No. EPA-HQ-OAR-2018-0794.

pointed out feasibility issues associated with installation and operation of various downstream acid gas control technologies in order to meet the 2012 final MATS acid gas standard. For those same reasons, the EPA determined that downstream acid gas control technologies such as scrubbers (either wet FGD scrubbers or SDA) or DSI systems are not beyond-the-floor options for acid gas HAP emissions from the subcategory of existing EBCR-fired EGUs.[26]

Based on a review of the public comments and other available information, the EPA is finalizing HCl and SO_2 emission limits reflecting beyond-the-floor level of control using the methodology described in the 2019 Proposal and earlier in this section of the preamble. Specifically, this action establishes the following emission limits for the new subcategory of existing EBCR-fired EGUs:

HCl: 4.0E-2 lb/MMBtu or 4.0E-1 lb/MWh
SO_2:[27] 6.0E-1 lb/MMBtu or 9.0 lb/MWh

The SO_2 lb/MMBtu emissions limit is a limit that, on average, the currently operating EBCR-fired EGUs have achieved based on their monthly emissions data for January 2015 through June 2018.[28] Because the EPA does not have such HCl emissions data or SO_2 lb/MWh emissions data,

[26] *See*, also, the memorandum titled *NESHAP for Coal- and Oil-Fired EGUs: Addendum to MACT Floor Analysis and Beyond the MACT Floor Analysis for Subcategory of Existing Eastern Bituminous Coal Refuse-Fired EGUs Under Consideration*, available in Docket ID No. EPA-HQ-OAR-2018-0794.

[27] As is the requirement for all coal-fired EGUs subject to MATS, the alternate SO_2 limit may be used if the EGU has some form of FGD system and SO_2 CEMS and both are installed and operated at all times. As specified in 40 CFR 63.10000(c)(1)(v) of the 2012 MATS final rule, limestone injection to an FBC unit is an "FGD system" that would allow the EBCR-fired EGUs to use the alternative SO_2 standard.

[28] As previously explained in this preamble, at the time of the 2019 Proposal's analysis, SO_2 data through June 2018 were available. Inclusion of data that has become available only after the 2019 Proposal does not result in a change to the beyond-the-floor emission limit for SO_2 lb/MMBtu. *See* the memorandum titled *NESHAP for Coal- and Oil-Fired EGUs: Addendum to MACT Floor Analysis and Beyond the MACT Floor Analysis for Subcategory of Existing Eastern Bituminous Coal Refuse-Fired EGUs Under Consideration*, available in Docket ID No. EPA-HQ-OAR-2018-0794.

beyond-the-floor standards for SO_2 in lb/MWh and for HCl in lb/MMBtu and lb/MWh are based on the percentage reduction in the SO_2 lb/MMBtu emissions rate between the MACT floor value and the beyond-the-floor value.

IV. Summary of Cost, Environmental, and Economic Impacts and Additional Analyses Conducted

A. What are the affected sources?

Affected sources are EGUs that are in the *unit designed for eastern bituminous coal refuse (EBCR) subcategory*, as defined under this final action. Based on available information, there are six currently operating EBCR-fired EGUs that are in the newly established subcategory and subject to the newly established acid gas HAP emission standards. The six EGUs, located at three facilities in Pennsylvania and one facility in West Virginia, are listed in Table 2 of this preamble.

B. What are the air quality impacts?

Absent the subcategory finalized in this action, many affected EBCR-fired EGUs would likely discontinue operations. Although the new emission standards will allow higher acid gas HAP and SO_2 emissions from these facilities compared to the emission standards in the original 2012 MATS, emissions of other HAP will not change under this action. These higher allowable emissions may, however, be partially offset. In the absence of this rule, closure of the units would likely result in reduced remediation of abandoned mine lands (AMLs) and potentially increase the risk and impact of emissions from refuse piles. Refuse piles at AMLs are prone to spontaneous internal combustion (smoldering) which emits uncontrolled air pollutants including acid gases and other HAP, and with less remediation, the potential for greater emissions from

smoldering increases. More detailed analysis of potential air impacts of this rule is presented in a docketed memorandum.[29]

C. What are the compliance cost impacts?

Relative to a baseline in which the subcategory is not finalized and the existing 2012 MATS acid gas HAP emissions limits are enforced, the new subcategory could reduce costs by eliminating the need for investment in additional compliance measures which have not yet been made by affected units. The magnitude of potential cost reductions is discussed in a docketed memorandum.[30]

D. What are the economic impacts?

The impact of the newly finalized subcategory of EBCR-fired EGUs for emissions of acid gas HAP on the broader electricity sector is likely to be minor due to the relatively small size of these facilities. Additionally, the risk of the affected EBCR-fired EGUs closing because of challenges in meeting MATS acid gas HAP limits is reduced by the new subcategory. As a result, the coal refuse reclamation services the units provide are more likely to be sustained in the future, potentially offsetting reclamation costs that may be otherwise incurred by the states of Pennsylvania and West Virginia. Additionally, because of the reduced risk of closure, the acid gas HAP subcategory finalized in this action could prevent labor market transitions for individuals who operate and perform support functions for these facilities. However, it may limit labor market opportunities that could result from AML reclamation by other means.

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[29] *See* the memorandum titled *Analysis of Potential Costs and Benefits for the National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units – Subcategory of Certain Existing Electric Utility Steam Generating Units Firing Eastern Bituminous Coal Refuse for Emissions of Acid Gas Hazardous Air Pollutants*, available in Docket ID No. EPA-HQ-OAR-2018-0794

[30] Ibid.

E. What are the forgone benefits?

Absent the subcategory finalized in this action, affected EBCR-fired EGUs would likely either discontinue operations or perform compliance measures to comply with the previous MATS acid gas HAP limits, which would have the effect of reducing acid gas HAP emissions. The newly finalized subcategory will likely increase emissions of SO_2 relative to a baseline in which the subcategory is not finalized; this in turn would form fine PM ($PM_{2.5}$) concentrations in the atmosphere and potentially adversely affect human health. The magnitude of those forgone co-benefits depends on the magnitude of the air quality impacts described earlier. Notably, most counties in Pennsylvania and bordering states attain the current $PM_{2.5}$ National Ambient Air Quality Standards (NAAQS), set at a level requisite to protect public health with an adequate margin of safety. The magnitude of potential forgone benefits is discussed in a docketed memorandum.[31]

In contrast, if plants continue to operate when they otherwise would not have absent this action, the continued remediation of AMLs could provide water quality co-benefits through reductions in toxic metal leaching and acid mine drainage. As noted earlier, removal of coal refuse piles reduces surface and groundwater pollution from acidic drainage and reduces uncontrolled emissions of air pollutants that are released from self-ignited internal smoldering of the coal refuse piles. In addition, commenters pointed out that the alkaline ash produced by EBCR-fired EGUs is used to reclaim mining-affected lands by returning them to a productive use.

Remediation of AMLs through the use of waste coal is supported by the state of Pennsylvania through policies such as tax credits and treatment of these units as renewable for

[31] Ibid.

purposes of the state's renewable portfolio standard. If these waste coal units are no longer able to operate, the state will need to find alternative means to remediate these sites leading to, at best, a delay in these benefits, if not a loss of these benefits altogether. These benefits are discussed qualitatively in greater detail in the docketed memorandum.

As noted earlier, while the EPA cannot predict with certainty what the industry response would be absent the establishment of a new subcategory, industry commenters have suggested that some – and maybe all – of the affected sources would shut down.[32] If that is the case, then the establishment of this new subcategory will allow those units to continue to achieve both of their purposes while also maintaining emissions of acid gas HAP at levels similar to current emissions levels.

While the EPA cannot predict with certainty what the industry response would be in the absence of a new subcategory, commenters' claim that the units would shut down is plausible. Coal-fired power plants are currently facing tremendous competitive pressures. As a result, coal's share of total U.S. electricity generation has been declining for over a decade, while generation from natural gas and renewables has increased significantly. A large number of coal units – especially smaller ones like the EBCR-fired EGUs – have retired since 2010. Indeed, as mentioned earlier, four of the ten units that were identified as affected by this action in the 2019 Proposal have now either retired or announced plans to convert to natural gas.

V. Statutory and Executive Order Reviews

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

[32] *See* EPA Docket ID Item Nos. EPA-HQ-OAR-2018-0794-1125 and EPA-HQ-OAR-2018-0794-1154.

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

This action is an economically significant regulatory action that was submitted to the Office of Management and Budget (OMB) for review. Any changes made in response to OMB recommendations have been documented in the docket. The EPA has conducted an analysis of all reasonably anticipated costs and benefits arising out of this rule, including those arising out of co-benefits pursuant to Executive Orders 12866 and 13563. That analysis can be found in a separate memorandum titled *Analysis of Potential Costs and Benefits for the National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units – Subcategory of Certain Existing Electric Utility Steam Generating Units Firing Eastern Bituminous Coal Refuse for Emissions of Acid Gas Hazardous Air Pollutants*, that is available in the docket.

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

This action is considered an Executive Order 13771 deregulatory action. This final rule provides meaningful burden reduction by revising the acid gas HAP emission standards for a new subcategory of certain existing EGUs that are currently subject to MATS and does not impose any additional regulatory requirements on the affected electric utility industry.

C. Paperwork Reduction Act (PRA)

This action does not impose any new information collection burden under the PRA. OMB has previously approved the information collection activities contained in the existing regulations and has assigned OMB control number 2060-0567. This action does not impose an information collection burden because the regulatory changes resulting from this action do not affect the currently approved information collection requirements. Specifically, this action

establishes acid gas HAP emission standards for a new subcategory of certain existing EGUs that are currently subject to MATS and the new emission standards do not result in any changes to the recordkeeping or reporting requirements that those impacted EGUs are currently subject to.

D. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden, or otherwise has a positive economic effect on the small entities subject to the rule. This is a deregulatory action, and the burden on all entities affected by this final rule, including small entities, is reduced compared to the 2012 MATS.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain an unfunded mandate of $100 million or more as described in UMRA, 2 U.S.C. 1531–1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local or tribal governments or the private sector.

F. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

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

This action does not have tribal implications as specified in Executive Order 13175. It will neither impose substantial direct compliance costs on tribal governments, nor preempt Tribal

law. Specifically, this action establishes acid gas HAP emission standards for a new subcategory of certain existing EGUs currently subject to MATS and located in Pennsylvania and West Virginia, states without any federally recognized tribal entities. Thus, Executive Order 13175 does not apply to this action.

Consistent with the EPA Policy on Consultation and Coordination with Indian Tribes, the EPA consulted with tribal officials during the development of this action. The EPA held consultations with the Blue Lake Rancheria and the Fond du Lac Band of Lake Superior Chippewa on April 2, 2019, and April 3, 2019, respectively. Neither tribe provided comments regarding the 2019 Proposal's solicitation of comment on establishing a subcategory of certain existing EGUs firing EBCR for acid gas HAP emissions.

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

This action is not subject to Executive Order 13045 because the EPA does not believe the environmental health risks or safety risks addressed by this action present a disproportionate risk to children. While children may experience forgone benefits as a result of this action, the potential forgone emission reductions (and related benefits) from the final amendments are small compared to the overall emission reductions (and related benefits) from the 2012 MATS.

Furthermore, this action does not affect the level of public health and environmental protection already being provided by existing NAAQS and other mechanisms in the CAA. This action does not affect applicable local, state, or federal permitting or air quality management programs that will continue to address areas with degraded air quality and maintain the air quality in areas meeting current standards. Areas that need to reduce criteria air pollution to meet the NAAQS will still need to rely on control strategies to reduce emissions. To the extent that

states use other mechanisms in order to comply with the NAAQS, and still achieve the criteria pollution reductions that would have otherwise occurred, this action will not have a disproportionate adverse effect on children's health.

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

This action is not a "significant energy action" because it is not likely to have a significant adverse effect on the supply, distribution, or use of energy. Further, the EPA concludes that this action is not likely to have any adverse energy effects because it establishes acid gas HAP emission standards for a new subcategory of certain existing EGUs that are currently subject to MATS and does not impose any additional regulatory requirements on the affected electric utility industry.

J. National Technology Transfer and Advancement Act (NTTAA)

This action does not involve technical standards.

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

The EPA believes that this action does not have disproportionately high and adverse human health or environmental effects on minority populations, low-income populations, and/or indigenous peoples, as specified in Executive Order 12898 (59 FR 7629, February 16, 1994). While these communities may experience forgone benefits as a result of this action, the potential forgone emission reductions (and related benefits) from the final action are small compared to the overall emission reductions (and related benefits) from the 2012 MATS.

Moreover, this action does not affect the level of public health and environmental protection already being provided by existing NAAQS, including ozone and $PM_{2.5}$, and other mechanisms in the CAA. This action does not affect applicable local, state, or federal permitting or air quality management programs that will continue to address areas with degraded air quality and maintain the air quality in areas meeting current standards. Areas that need to reduce criteria air pollution to meet the NAAQS will still need to rely on control strategies to reduce emissions.

L. Congressional Review Act (CRA)

This action is subject to the CRA, and the EPA will submit a rule report to each House of the Congress and to the Comptroller General of the United States. The CRA allows the issuing agency to make a rule effective sooner than otherwise provided by the CRA if the agency makes a good cause finding under the provisions of 5 U.S.C. 808(2). The EPA finds that there is good cause under the provisions of 5 U.S.C. 808(2) to make this final rule effective without full, prior Congressional review under 5 U.S.C. 801 and to make the rule effective on **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. The EPA finds that it is unnecessary to delay the date this rule could be effective because the Agency has determined that the owners or operators of affected MATS sources do not need time to adjust to this final action. This final action establishes a subcategory of certain existing EGUs firing EBCR and acid gas HAP emission standards applicable only to the new subcategory. Sources in the new subcategory will be subject to an SO_2 emissions limit that, on average, the currently operating six EBCR-fired EGUs have demonstrated an ability to achieve but, otherwise, will not be subject to any new regulatory requirements.[33]

[33] Affected sources may report emissions of either SO_2 or HCl. Most MATS-affected EGUs report emissions of SO_2 because they already report SO_2 emissions under the EPA's Acid Rain Program.

The EPA also finds that it is impracticable to delay the effective date of this rule. Three of the four facilities with EBCR-fired EGUs in the new subcategory are subject to EPA-issued Administrative Compliance Orders that provide interim SO_2 emission limits that terminate on April 15, 2020. Those facilities have asserted that they cannot meet the 2012 final MATS HCl emission standard, or the 2012 final MATS SO_2 acid gas HAP surrogate emission standard, while burning the coal refuse fuel for which their facilities were designed. By 11:59 pm on April 15, 2020, EBCR-fired EGUs at those facilities must achieve full compliance with MATS. Absent this final action's acid gas HAP emission standards for the new subcategory being effective by that date, EGUs at those three facilities would be subject to the 2012 final MATS acid gas HAP emission standards that they are not currently in compliance with, and, thus, in violation of their Orders. According to the facilities, if subject to the 2012 acid gas HAP emission standards, they would no longer be in a position to continue operating their EBCR-fired EGUs and, thus, provide the environmental benefits associated with removal of coal refuse piles and reclamation and remediation of mining-affected lands.

Accordingly, the EPA finds it would be unnecessary and impracticable to delay the effective date of this action and that there is good cause to dispense with the opportunity for a 60-day period of prior Congressional review and to publish this final rule with an effective date of **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

List of Subjects in 40 CFR Part 63

Environmental protection, Administrative practice and procedures, Air pollution control, Hazardous substances, Intergovernmental relations, Reporting and recordkeeping requirements.

_____.
Dated:

_____
Andrew Wheeler,
Administrator.

For the reasons set forth in the preamble, the Environmental Protection Agency amends 40 CFR part 63 as follows:

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

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

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

Subpart UUUUU—National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units

2. Section 63.9982 is amended by revising paragraph (d) to read as follows:

§ 63.9982 What is the affected source of this subpart?

* * * * *

(d) An EGU is existing if it is not new or reconstructed. An existing electric steam generating unit that meets the applicability requirements after April 16, 2012, due to a change in process (*e.g.*, fuel or utilization) is considered to be an existing source under this subpart.

3. Section 63.9984 is amended by revising paragraphs (b) and (f) and adding paragraph (g) to read as follows:

§ 63.9984 When do I have to comply with this subpart?

* * * * *

(b) If you have an existing EGU, you must comply with this subpart no later than April 16, 2015, except as provided in paragraph (g) of this section.

* * * * *

(f) You must demonstrate that compliance has been achieved, by conducting the required performance tests and other activities, no later than 180 days after the applicable date in paragraph (a), (b), (c), (d), (e), or (g) of this section.

(g) If you own or operate an EGU that is in the *Unit designed for eastern bituminous coal refuse (EBCR) subcategory* as defined in § 63.10042, you must comply with the applicable hydrogen chloride (HCl) or sulfur dioxide (SO_2) requirements of this subpart no later than **[INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

4. Section 63.9990 is amended by revising paragraph (a) to read as follows:

§ 63.9990 What are the subcategories of EGUs?

(a) Coal-fired EGUs are subcategorized as defined in paragraphs (a)(1) through (3) of this section and as defined in § 63.10042.

(1) EGUs designed for coal with a heating value greater than or equal to 8,300 Btu/lb,

(2) EGUs designed for low rank virgin coal, and

(3) EGUs designed for EBCR.

* * * * *

5. Section 63.10042 is amended by adding definitions for "Eastern bituminous coal refuse (EBCR)," "Net summer capacity," and "Unit designed for eastern bituminous coal refuse (EBCR) subcategory:" in alphabetical order to read as follows:

§ 63.10042 What definitions apply to this subpart?

* * * * *

Eastern bituminous coal refuse (EBCR) means coal refuse generated from the mining of bituminous coal in Pennsylvania and West Virginia.

* * * * *

Net summer capacity means the maximum output, commonly expressed in megawatts (MW), that generating equipment can supply to system load, as demonstrated by a multi-hour test, at the time of summer peak demand (period of June 1 through September 30.) This output reflects a reduction in capacity due to electricity use for station service or auxiliaries.

* * * * *

Unit designed for eastern bituminous coal refuse (EBCR) subcategory means any existing (*i.e.*, construction was commenced on or before May 3, 2011) coal-fired EGU with a net summer capacity of no greater than 150 MW that is designed to burn and that is burning 75 percent or more (by heat input) eastern bituminous coal refuse on a 12-month rolling average basis.

* * * * *

6. Table 2 to Subpart UUUUU of Part 63 is amended to read as follows:

Table 2 to Subpart UUUUU of Part 63—Emission Limits for Existing EGUs

As stated in §63.9991, you must comply with the following applicable emission limits:[1]

If your EGU is in this subcategory . . .	**For the following pollutants . . .**	**You must meet the following emission limits and work practice standards . . .**	**Using these requirements, as appropriate (*e.g.,* specified sampling volume or test run duration) and limitations with the test methods in Table 5 to this Subpart . . .**
1. Coal-fired unit not low rank virgin coal	a. Filterable particulate matter (PM)	3.0E-2 lb/MMBtu or 3.0E-1 lb/MWh[2]	Collect a minimum of 1 dscm per run.
	OR	OR	
	Total non-Hg HAP metals	5.0E-5 lb/MMBtu or 5.0E-1 lb/GWh	Collect a minimum of 1 dscm per run.
	OR	OR	
	Individual HAP metals:		Collect a minimum of 3 dscm per run.

	Antimony (Sb)	8.0E-1 lb/TBtu or 8.0E-3 lb/GWh	
	Arsenic (As)	1.1E0 lb/TBtu or 2.0E-2 lb/GWh	
	Beryllium (Be)	2.0E-1 lb/TBtu or 2.0E-3 lb/GWh	
	Cadmium (Cd)	3.0E-1 lb/TBtu or 3.0E-3 lb/GWh	
	Chromium (Cr)	2.8E0 lb/TBtu or 3.0E-2 lb/GWh	
	Cobalt (Co)	8.0E-1 lb/TBtu or 8.0E-3 lb/GWh	
	Lead (Pb)	1.2E0 lb/TBtu or 2.0E-2 lb/GWh	
	Manganese (Mn)	4.0E0 lb/TBtu or 5.0E-2 lb/GWh	
	Nickel (Ni)	3.5E0 lb/TBtu or 4.0E-2 lb/GWh	
	Selenium (Se)	5.0E0 lb/TBtu or 6.0E-2 lb/GWh	
	b. Hydrogen chloride (HCl)	2.0E-3 lb/MMBtu or 2.0E-2 lb/MWh	For Method 26A at appendix A-8 to part 60 of this chapter, collect a minimum of 0.75 dscm per run; for Method 26, collect a minimum of 120 liters per run. For ASTM D6348-03[3] or Method 320 at appendix A to part 63 of this chapter, sample for a minimum of 1 hour.
	OR		
	Sulfur dioxide (SO_2)[4]	2.0E-1 lb/MMBtu or 1.5E0 lb/MWh	SO_2 CEMS.
	c. Mercury (Hg)	1.2E0 lb/TBtu or 1.3E-2 lb/GWh	LEE Testing for 30 days with a sampling period consistent with that given in section 5.2.1 of appendix A to this subpart per Method 30B at appendix A-8 to part 60 of this chapter run or Hg CEMS or sorbent trap monitoring system only.

		OR	
		1.0E0 lb/TBtu or 1.1E-2 lb/GWh	LEE Testing for 90 days with a sampling period consistent with that given in section 5.2.1 of appendix A to this subpart per Method 30B run or Hg CEMS or sorbent trap monitoring system only.
2. Coal-fired unit low rank virgin coal	a. Filterable particulate matter (PM)	3.0E-2 lb/MMBtu or 3.0E-1 lb/MWh[2]	Collect a minimum of 1 dscm per run.
	OR	OR	
	Total non-Hg HAP metals	5.0E-5 lb/MMBtu or 5.0E-1 lb/GWh	Collect a minimum of 1 dscm per run.
	OR	OR	
	Individual HAP metals:		Collect a minimum of 3 dscm per run.
	Antimony (Sb)	8.0E-1 lb/TBtu or 8.0E-3 lb/GWh	
	Arsenic (As)	1.1E0 lb/TBtu or 2.0E-2 lb/GWh	
	Beryllium (Be)	2.0E-1 lb/TBtu or 2.0E-3 lb/GWh	
	Cadmium (Cd)	3.0E-1 lb/TBtu or 3.0E-3 lb/GWh	
	Chromium (Cr)	2.8E0 lb/TBtu or 3.0E-2 lb/GWh	
	Cobalt (Co)	8.0E-1 lb/TBtu or 8.0E-3 lb/GWh	
	Lead (Pb)	1.2E0 lb/TBtu or 2.0E-2 lb/GWh	
	Manganese (Mn)	4.0E0 lb/TBtu or 5.0E-2 lb/GWh	
	Nickel (Ni)	3.5E0 lb/TBtu or 4.0E-2 lb/GWh	
	Selenium (Se)	5.0E0 lb/TBtu or 6.0E-2 lb/GWh	

	b. Hydrogen chloride (HCl)	2.0E-3 lb/MMBtu or 2.0E-2 lb/MWh	For Method 26A, collect a minimum of 0.75 dscm per run; for Method 26 at appendix A-8 to part 60 of this chapter, collect a minimum of 120 liters per run. For ASTM D6348-03[3] or Method 320, sample for a minimum of 1 hour.
	OR		
	Sulfur dioxide (SO_2)[4]	2.0E-1 lb/MMBtu or 1.5E0 lb/MWh	SO_2 CEMS.
	c. Mercury (Hg)	4.0E0 lb/TBtu or 4.0E-2 lb/GWh	LEE Testing for 30 days with a sampling period consistent with that given in section 5.2.1 of appendix A to this subpart per Method 30B run or Hg CEMS or sorbent trap monitoring system only.
3. IGCC unit	a. Filterable particulate matter (PM)	4.0E-2 lb/MMBtu or 4.0E-1 lb/MWh[2]	Collect a minimum of 1 dscm per run.
	OR	OR	
	Total non-Hg HAP metals	6.0E-5 lb/MMBtu or 5.0E-1 lb/GWh	Collect a minimum of 1 dscm per run.
	OR	OR	
	Individual HAP metals:		Collect a minimum of 2 dscm per run.
	Antimony (Sb)	1.4E0 lb/TBtu or 2.0E-2 lb/GWh	
	Arsenic (As)	1.5E0 lb/TBtu or 2.0E-2 lb/GWh	
	Beryllium (Be)	1.0E-1 lb/TBtu or 1.0E-3 lb/GWh	
	Cadmium (Cd)	1.5E-1 lb/TBtu or 2.0E-3 lb/GWh	
	Chromium (Cr)	2.9E0 lb/TBtu or 3.0E-2 lb/GWh	
	Cobalt (Co)	1.2E0 lb/TBtu or 2.0E-2 lb/GWh	

	Lead (Pb)	1.9E+2 lb/TBtu or 1.8E0 lb/GWh	
	Manganese (Mn)	2.5E0 lb/TBtu or 3.0E-2 lb/GWh	
	Nickel (Ni)	6.5E0 lb/TBtu or 7.0E-2 lb/GWh	
	Selenium (Se)	2.2E+1 lb/TBtu or 3.0E-1 lb/GWh	
	b. Hydrogen chloride (HCl)	5.0E-4 lb/MMBtu or 5.0E-3 lb/MWh	For Method 26A, collect a minimum of 1 dscm per run; for Method 26, collect a minimum of 120 liters per run. For ASTM D6348-03[3] or Method 320, sample for a minimum of 1 hour.
	c. Mercury (Hg)	2.5E0 lb/TBtu or 3.0E-2 lb/GWh	LEE Testing for 30 days with a sampling period consistent with that given in section 5.2.1 of appendix A to this subpart per Method 30B run or Hg CEMS or sorbent trap monitoring system only.
4. Liquid oil-fired unit—continental (excluding limited-use liquid oil-fired subcategory units)	a. Filterable particulate matter (PM)	3.0E-2 lb/MMBtu or 3.0E-1 lb/MWh[2]	Collect a minimum of 1 dscm per run.
	OR	OR	
	Total HAP metals	8.0E-4 lb/MMBtu or 8.0E-3 lb/MWh	Collect a minimum of 1 dscm per run.
	OR	OR	
	Individual HAP metals:		Collect a minimum of 1 dscm per run.
	Antimony (Sb)	1.3E+1 lb/TBtu or 2.0E-1 lb/GWh	
	Arsenic (As)	2.8E0 lb/TBtu or 3.0E-2 lb/GWh	
	Beryllium (Be)	2.0E-1 lb/TBtu or 2.0E-3 lb/GWh	

	Cadmium (Cd)	3.0E-1 lb/TBtu or 2.0E-3 lb/GWh	
	Chromium (Cr)	5.5E0 lb/TBtu or 6.0E-2 lb/GWh	
	Cobalt (Co)	2.1E+1 lb/TBtu or 3.0E-1 lb/GWh	
	Lead (Pb)	8.1E0 lb/TBtu or 8.0E-2 lb/GWh	
	Manganese (Mn)	2.2E+1 lb/TBtu or 3.0E-1 lb/GWh	
	Nickel (Ni)	1.1E+2 lb/TBtu or 1.1E0 lb/GWh	
	Selenium (Se)	3.3E0 lb/TBtu or 4.0E-2 lb/GWh	
	Mercury (Hg)	2.0E-1 lb/TBtu or 2.0E-3 lb/GWh	For Method 30B sample volume determination (Section 8.2.4), the estimated Hg concentration should nominally be < ½ the standard.
	b. Hydrogen chloride (HCl)	2.0E-3 lb/MMBtu or 1.0E-2 lb/MWh	For Method 26A, collect a minimum of 1 dscm per run; for Method 26, collect a minimum of 120 liters per run. For ASTM D6348-03[3] or Method 320, sample for a minimum of 1 hour.
	c. Hydrogen fluoride (HF)	4.0E-4 lb/MMBtu or 4.0E-3 lb/MWh	For Method 26A, collect a minimum of 1 dscm per run; for Method 26, collect a minimum of 120 liters per run. For ASTM D6348-03[3] or Method 320, sample for a minimum of 1 hour.
5. Liquid oil-fired unit—non-continental (excluding limited-use liquid oil-fired subcategory units)	a. Filterable particulate matter (PM)	3.0E-2 lb/MMBtu or 3.0E-1 lb/MWh[2]	Collect a minimum of 1 dscm per run.
	OR	OR	
	Total HAP metals	6.0E-4 lb/MMBtu or 7.0E-3 lb/MWh	Collect a minimum of 1 dscm per run.
	OR	OR	

	Individual HAP metals:		Collect a minimum of 2 dscm per run.
	Antimony (Sb)	2.2E0 lb/TBtu or 2.0E-2 lb/GWh	
	Arsenic (As)	4.3E0 lb/TBtu or 8.0E-2 lb/GWh	
	Beryllium (Be)	6.0E-1 lb/TBtu or 3.0E-3 lb/GWh	
	Cadmium (Cd)	3.0E-1 lb/TBtu or 3.0E-3 lb/GWh	
	Chromium (Cr)	3.1E+1 lb/TBtu or 3.0E-1 lb/GWh	
	Cobalt (Co)	1.1E+2 lb/TBtu or 1.4E0 lb/GWh	
	Lead (Pb)	4.9E0 lb/TBtu or 8.0E-2 lb/GWh	
	Manganese (Mn)	2.0E+1 lb/TBtu or 3.0E-1 lb/GWh	
	Nickel (Ni)	4.7E+2 lb/TBtu or 4.1E0 lb/GWh	
	Selenium (Se)	9.8E0 lb/TBtu or 2.0E-1 lb/GWh	
	Mercury (Hg)	4.0E-2 lb/TBtu or 4.0E-4 lb/GWh	For Method 30B sample volume determination (Section 8.2.4), the estimated Hg concentration should nominally be < ½ the standard.
	b. Hydrogen chloride (HCl)	2.0E-4 lb/MMBtu or 2.0E-3 lb/MWh	For Method 26A, collect a minimum of 1 dscm per run; for Method 26, collect a minimum of 120 liters per run. For ASTM D6348-03[3] or Method 320, sample for a minimum of 2 hours.
	c. Hydrogen fluoride (HF)	6.0E-5 lb/MMBtu or 5.0E-4 lb/MWh	For Method 26A, collect a minimum of 3 dscm per run. For ASTM D6348-03[3] or Method 320, sample for a minimum of 2 hours.
6. Solid oil-derived fuel-fired unit	a. Filterable particulate matter (PM)	8.0E-3 lb/MMBtu or 9.0E-2 lb/MWh[2]	Collect a minimum of 1 dscm per run.

	OR	OR	
	Total non-Hg HAP metals	4.0E-5 lb/MMBtu or 6.0E-1 lb/GWh	Collect a minimum of 1 dscm per run.
	OR	OR	
	Individual HAP metals:		Collect a minimum of 3 dscm per run.
	Antimony (Sb)	8.0E-1 lb/TBtu or 7.0E-3 lb/GWh	
	Arsenic (As)	3.0E-1 lb/TBtu or 5.0E-3 lb/GWh	
	Beryllium (Be)	6.0E-2 lb/TBtu or 5.0E-4 lb/GWh	
	Cadmium (Cd)	3.0E-1 lb/TBtu or 4.0E-3 lb/GWh	
	Chromium (Cr)	8.0E-1 lb/TBtu or 2.0E-2 lb/GWh	
	Cobalt (Co)	1.1E0 lb/TBtu or 2.0E-2 lb/GWh	
	Lead (Pb)	8.0E-1 lb/TBtu or 2.0E-2 lb/GWh	
	Manganese (Mn)	2.3E0 lb/TBtu or 4.0E-2 lb/GWh	
	Nickel (Ni)	9.0E0 lb/TBtu or 2.0E-1 lb/GWh	
	Selenium (Se)	1.2E0 lb/Tbtu or 2.0E-2 lb/GWh	
	b. Hydrogen chloride (HCl)	5.0E-3 lb/MMBtu or 8.0E-2 lb/MWh	For Method 26A, collect a minimum of 0.75 dscm per run; for Method 26, collect a minimum of 120 liters per run. For ASTM D6348-03[3] or Method 320, sample for a minimum of 1 hour.
	OR		
	Sulfur dioxide (SO_2)[4]	3.0E-1 lb/MMBtu or 2.0E0 lb/MWh	SO_2 CEMS.

	c. Mercury (Hg)	2.0E-1 lb/TBtu or 2.0E-3 lb/GWh	LEE Testing for 30 days with a sampling period consistent with that given in section 5.2.1 of appendix A to this subpart per Method 30B run or Hg CEMS or sorbent trap monitoring system only.
7. Eastern Bituminous Coal Refuse (EBCR)-fired unit	a. Filterable particulate matter (PM)	3.0E-2 lb/MMBtu or 3.0E-1 lb/MWh[2]	Collect a minimum of 1 dscm per run.
	OR	OR	
	Total non-Hg HAP metals	5.0E-5 lb/MMBtu or 5.0E-1 lb/GWh	Collect a minimum of 1 dscm per run.
	OR	OR	
	Individual HAP metals:		Collect a minimum of 3 dscm per run.
	Antimony (Sb)	8.0E-1 lb/TBtu or 8.0E-3 lb/GWh	
	Arsenic (As)	1.1E0 lb/TBtu or 2.0E-2 lb/GWh	
	Beryllium (Be)	2.0E-1 lb/TBtu or 2.0E-3 lb/GWh	
	Cadmium (Cd)	3.0E-1 lb/TBtu or 3.0E-3 lb/GWh	
	Chromium (Cr)	2.8E0 lb/TBtu or 3.0E-2 lb/GWh	
	Cobalt (Co)	8.0E-1 lb/TBtu or 8.0E-3 lb/GWh	
	Lead (Pb)	1.2E0 lb/TBtu or 2.0E-2 lb/GWh	
	Manganese (Mn)	4.0E0 lb/TBtu or 5.0E-2 lb/GWh	
	Nickel (Ni)	3.5E0 lb/TBtu or 4.0E-2 lb/GWh	
	Selenium (Se)	5.0E0 lb/TBtu or 6.0E-2 lb/GWh	

	b. Hydrogen chloride (HCl)	4.0E-2 lb/MMBtu or 4.0E-1 lb/MWh	For Method 26A at appendix A-8 to part 60 of this chapter, collect a minimum of 0.75 dscm per run; for Method 26, collect a minimum of 120 liters per run. For ASTM D6348-03[3] or Method 320 at appendix A to part 63 of this chapter, sample for a minimum of 1 hour.
	OR		
	Sulfur dioxide (SO_2)[4]	6E-1 lb/MMBtu or 9E0 lb/MWh	SO_2 CEMS.
	c. Mercury (Hg)	1.2E0 lb/TBtu or 1.3E-2 lb/GWh	LEE Testing for 30 days with a sampling period consistent with that given in section 5.2.1 of appendix A to this subpart per Method 30B at appendix A-8 to part 60 of this chapter run or Hg CEMS or sorbent trap monitoring system only.
		OR	
		1.0E0 lb/TBtu or 1.1E-2 lb/GWh	LEE Testing for 90 days with a sampling period consistent with that given in section 5.2.1 of appendix A to this subpart per Method 30B run or Hg CEMS or sorbent trap monitoring system only.

[1]For LEE emissions testing for total PM, total HAP metals, individual HAP metals, HCl, and HF, the required minimum sampling volume must be increased nominally by a factor of 2.
[2]Gross output.
[3]Incorporated by reference, *see* §63.14.
[4]You may not use the alternate SO_2 limit if your EGU does not have some form of FGD system and SO_2 CEMS installed.