COMMENTS FROM THE EDISON ELECTRIC INSTITUTE ON THE ENVIRONMENTAL PROTECTION AGENCY'S PROPOSED RULE NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS: COAL- AND OIL-FIRED ELECTRIC UTILITY STEAM GENERATING UNITS REVIEW OF THE RESIDUAL RISK AND TECHNOLOGY REVIEW

Docket No. EPA-HQ-OAR-2018-0794

June 23, 2023

The Edison Electric Institute (EEI) appreciates the opportunity to comment on the U.S. Environmental Protection Agency's (EPA's or Agency's) proposed rule, *National Emissions Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units Review of the Residual Risk and Technology Review (RTR)* (Proposed Rule), which is commonly known as the Mercury and Air Toxics Standards (MATS). 88 *Fed. Reg.* 24,854 (Apr. 24, 2023).

EPA proposes stricter limitations for filterable particulate matter (fPM) and mercury (Hg) emissions from lignite units, as well as new monitoring and startup/shutdown requirements. EPA proposes to retain the remainder of the hazardous air pollutant (HAP) limits that make up MATS, following both a residual risk and a technology review as mandated by Clean Air Act (CAA) Section 112. This proposed RTR updates the original RTR conducted in May 2020.

EEI is the association that represents all U.S. investor-owned electric companies. EEI members provide electricity for more than 235 million Americans and operate in all 50 states and the District of Columbia. The electric power industry supports more than seven million jobs in communities across the United States. EEI members invest more than $140 billion annually to make the energy grid smarter, cleaner, more dynamic, more flexible, and more secure; to

diversify the nation's energy mix; and to integrate new technologies that benefit both customers and the environment. Across the nation, investor-owned electric companies are leading a clean energy transformation, making significant progress to reduce greenhouse gas (GHG) emissions in our sector, while also creating good-paying jobs and an equitable clean energy future. They are united in their commitment to get the energy they provide as clean as they can, as fast as they can, while keeping reliability and affordability front and center, as always, for the customers and communities they serve.

I. Introduction and Executive Summary.

First, EPA should work to align the rulemaking and compliance obligations and timelines in the various proposed rules with the already planned retirements of many existing electric generating units (EGUs). EPA has multiple authorities with overlapping statutory timelines that affect EEI members' plans regarding coal based EGUs and the continued clean energy transformation. To the maximum extent possible and practicable, EPA should align rulemaking timetables for this rule—alongside efforts such as the Coal Combustion Residuals (CCR) rules, the Effluent Limitations Guidelines (ELG) rules, regional haze requirements, the Good Neighbor Rule under CAA section 110, and the Agency's suite of GHG regulations under Clean Air Act section 111—and their related compliance obligations with already planned unit retirements. This will ensure that the environmental benefits of coal closures are realized at least cost to customers, balancing environmental progress with affordability, which are both elements of environmental and energy justice. In addition, this will allow owners and operators of units that may continue to run to make fully informed decisions.

Second, subcategories are a well-founded mechanism under environmental regulations that can provide flexibilities for facilities that will soon cease emissions and EPA should consider adding a retirement subcategory in the final rule. EPA has broad legal authority to include retirement subcategories in environmental rules. Retirement subcategories have long been used under various environmental statutes to balance factors such as cost and age of equipment, environmental impacts, and energy requirements. Many EEI members have coal-based EGUs slated to retire (or repower with a cleaner fuel in the near future), and EPA should avoid requiring the installation of costly controls at EGUs as this could extend the life of these units, possibly constraining investments in new, cleaner replacement generation and expanded transmission.

Third, based in part on the fact that EGUs have reduced emissions of Hg, acid gases and total HAPs by at least 95 percent, **EPA properly concludes in its review of the residual risk of emissions under MATS that changes to the existing MATS based on residual risk are not needed to protect human health with an adequate margin of safety**.

Fourth, **EPA should not lower the fPM standard below the proposed level**. This is because: 1) a lower fPM could run counter to the timelines in other rulemakings that are part of the holistic approach announced by the Administrator for the electric power sector; and 2) a lower fPM standard would cause unnecessary monitoring challenges with limited compliance benefits. EPA should also consider increasing the proposed fPM standard to recognize the operational changes the industry has implemented to integrate more renewable resources.

Fifth, **EPA should provide targeted flexibility for new requirements to transition to particulate matter (PM) continuous emissions monitors (CEMs)**. Two-thirds of affected units, approximately 230, do not currently employ PM CEMS and the installation of such monitors may come with challenges. More importantly, as EPA recognizes in the proposal, EGUs that will be retiring in the near term should be allowed to continue other monitoring approaches for a small number of years to avoid unnecessary investments in monitors with a limited useful life that will not provide significant compliance or enforcement benefits.

Sixth, **EPA should assess a broader data set that reflects actual unit performance over a wider range of operating conditions in setting the final fPM limit**. EPA's analysis should fully capture all available data, particularly for current CEMS-monitored units, and consider the potential for seasonable variability in unit fPM emissions performance. This will allow for finalization of an fPM standard with which units can comply.

II. EEI Members Continue to Lead the Clean Energy Transformation.

EEI members are leading a profound, long-term transformation in how electricity is generated, transmitted, and used. This transformation is being driven by a wide range of factors, including relatively lower prices for natural gas, particularly as compared to historic high prices; increased deployment of renewable energy resources, energy efficiency measures, and demand-side management; technological improvements; changing customer, investor, and owner expectations; federal and state regulations and policies; legislation, including the Infrastructure Investment and Jobs Act[1] (IIJA) and Inflation Reduction Act of 2022[2] (IRA); and the increasing

[1] Pub. L. No. 117-58.

[2] Pub. L. No. 117-169.

use of distributed energy resources. Across the industry, electric companies are investing in a broad range of affordable, carbon-free technologies and approaches with the goal of finding the most cost-effective ways to deliver resilient clean energy.

The mix of resources used to generate electricity in the United States has changed dramatically over the last decade and is increasingly cleaner.[3] In 2022, for the first time, renewable energy sources[4] surpassed coal as a fuel: 22.6 percent of total generation at utility-scale facilities in the United States came from renewable sources compared to 19 percent from coal-based generation.[5] In total, more than 40 percent of America's electricity came from clean carbon-free resources in 2022, including nuclear energy, hydropower, solar, and wind,[6] putting clean resources at parity with natural gas generation, which provided approximately 40 percent of the country's total electricity generation at utility scale facilities in 2022.

[3] *See* U.S. Energy Information Administration (EIA), Today in Energy: Renewable generation surpassed coal and nuclear in the U.S. electric power sector in 2022 (Mar. 27, 2023), https://www.eia.gov/todayinenergy/detail.php?id=55960&src=email; *See also* EIA, Electric Power Monthly: Data for February 2023—Table 1.1 Net Generation by Energy Source: Total (All Sectors), 2013-February 2023 (Mar. 24, 2023), https://www.eia.gov/electricity/monthly/xls/table_1_01.xlsx; *and* EIA, Electric Power Monthly: Data for February 2023—Table 1.1.A. Net Generation from Renewable Sources: Total (All Sectors) (Mar. 24, 2023), https://www.eia.gov/electricity/monthly/xls/table_1_01_a.xlsx.

[4] Renewables here include wood, black liquor, other wood waste, biogenic municipal solid waste, landfill gas, sludge waste, agriculture byproducts, other biomass, geothermal, hydroelectric conventional, solar thermal, photovoltaic energy, solar, and wind. *See* EIA, Electric Power Monthly, Table 1.1, *supra*, n.3.

[5] *See id.*

[6] *See id.*

As part of the move toward clean, resilient energy, electric companies are deploying more energy storage, which is a key asset in helping the grid integrate increasing amounts of renewables and offering resilience and reliability. Electric companies are the largest users and operators of the approximately 32 gigawatts (GW) of operational storage in the country—representing 93 percent of active energy storage projects.[7]

Going forward, renewable and clean energy technology deployments will continue. EIA predicts that declining capital costs for solar panels, wind turbines, and battery storage, along with government support such as the IRA, will make these technologies increasingly cost effective compared to the alternatives when building new power generating capacity.[8] EIA projects that in the United States renewable generation will more than triple by 2050, with both wind and solar responsible for most of the growth.[9]

The changes in the mix of resources used to generate electricity have profoundly decreased the sector's carbon dioxide (CO_2) emissions, the primary greenhouse gas emissions associated with electricity production. EIA's preliminary full-year estimates for 2022 find that electric power sector CO_2 emissions were 36 percent below 2005 levels, as low as they were almost 40 years

[7] Compiled from the following proprietary sources: Wood Mackenzie Power & Renewables/American Clean Power Association, *U.S. Energy Storage Monitor* (2022); Dep't of Energy, *Energy Storage Database* (2022); Hitachi Energy, *The Velocity Suite Database* (2022).

[8] *See* EIA, Annual Energy Outlook 2023 (AEO 2023) 9 (Mar. 16, 2023), https://www.eia.gov/outlooks/aeo/pdf/AEO2023_Narrative.pdf.

[9] *See* AEO 2023—Table 16. Renewable Energy Generating Capacity and Generation: Electric Power Sector: Generation: Total (Mar. 16, 2023), https://www.eia.gov/outlooks/aeo/data/browser/#/?id=16-AEO2023&region=0-0&cases=ref2023&start=2021&end=2050&f=A&linechart=ref2023-d020623a.25-16-AEO2023~&ctype=linechart&sid=ref2023-d020623a.25-16-AEO2023~ref2023-d020623a.64-16-AEO2023&sourcekey=0.

ago,[10] and once again led the nation in reducing emissions. These reductions will continue.[11] Further, 50 EEI members have announced voluntary, forward-looking carbon reductions goals, 41 of which include a net-zero by 2050 or earlier equivalent goal, and members routinely increase the ambition or speed of their goals or altogether transform them into net-zero goals to reflect changing expectations about the cost and availability of renewable generation and other clean energy resources.

In addition, the electric industry has significantly reduced emissions of traditional air pollutants, such as mercury, HAPs, sulfur dioxide (SO_2), and nitrogen oxides (NOx). As of 2022, SO_2 and NOx emissions have declined 95 and 88 percent, respectively, since 1990.[12] In addition, mercury emissions have declined by 95 percent since 2010,[13] and total HAPs—including all acid gas emissions—declined by 96 percent between 2010 to 2017.[14]

EEI's member companies see a clear path to continued emissions reductions over the next decade using current technologies, including nuclear power, natural gas-based generation, energy demand efficiency, energy storage, and deployment of new renewable energy—especially wind

[10] *See* EIA, Monthly Energy Review, Environment, Table 11.6—Electric Power Sector (Mar. 2023), https://www.eia.gov/totalenergy/data/monthly/pdf/mer.pdf.

[11] *See* AEO 2023 at 4.

[12] *See* EPA, Power Plant Emissions Trends (Feb. 2023), https://www.epa.gov/power-sector/power-plant-emission-trends.

[13] *See* EPA, Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards, page 2-7 (Dec. 2011), https://www.epa.gov/sites/default/files/2015-11/documents/matsriafinal.pdf.

[14] *See* 84 *Fed. Reg.* 2,670, 2,689 (Feb. 7, 2019).

and solar[15]—as older coal-based and less-efficient natural gas-based generating units retire.[16] These technologies will continue to enable significant, cost-effective carbon reductions.

In the long term, reaching net-zero carbon emissions also will require the deployment of next-generation, carbon-free, 24/7, dispatchable technologies not currently available commercially. Supported by the clean energy tax incentives included in the IRA and the grant funding available via the IIJA, electric companies are partnering with technology developers, academic institutions, investors, philanthropists, each other, and other stakeholders to develop, demonstrate, and deploy these new clean energy technologies. These include long-duration energy storage, carbon capture and storage, advanced nuclear and renewable generation, and clean fuel (like hydrogen, renewable natural gas and ammonia). Developing and deploying a broad range of advanced clean energy technologies will further expedite the transition of the electric power sector to one that is low- or non-emitting while keeping electricity affordable and reliable for customers.

EPA's Proposed Rule is of critical importance to EEI members as they continue to lead this clean energy transformation. A MATS RTR that supports the efficient and cost-effective retirement or repowering of coal-based EGUs will help further this transformation.

[15] Once built and when the resource is available, wind and solar are the least cost resources to operate to meet electricity demand because they have zero fuel costs. Over time, the combined investment and operating cost advantage increases the share of zero-carbon electricity generation. *See* AEO 2023 at 5.

[16] EIA notes that coal-fired generation capacity will decline sharply by 2030 to about 50 percent of current levels (from about 200 GW to 100 GW) with a more gradual decline thereafter. *See* AEO 2023 at 13.

III. EPA Should Align Compliance Timelines Across Environmental Rulemakings To The Maximum Extent Possible And Should Not Lower The fPM Limit Below The Proposed Level.

Aware of the clean energy transition led by EEI's members, EPA Administrator Michael Regan has announced the Agency's intent to pursue an integrated and coordinated approach to regulating EGUs under its air, water, and waste programs, so as to provide "greater transparency, regulatory certainty for long-term investments, opportunities to reduce compliance complexity, and the right signals to create market and price stability."[17] To the maximum extent possible, these regulations should support and facilitate the emissions reductions and clean energy progress already being made by electric companies and their fleet transition plans. EPA has multiple authorities with overlapping statutory timelines that affect EEI members' plans regarding the orderly retirement of coal-based EGUs and their ability to continue the industry's clean energy transformation while providing the reliability and affordability their customers demand. These authorities include rulemaking efforts such as the CCR rules,[18] the ELG rules,[19] regional haze requirements, the Good Neighbor Rule under CAA section 110,[20] and the Agency's suite of GHG regulations under Clean Air Act section 111.[21]

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[17] *See* EPA, Administrator Michael Regan, Remarks to CERAWeek About EPA's Approach to Deliver Certainty for Power Sector and Ensure Significant Public Health Benefits, (Mar. 10, 2022), https://www.epa.gov/speeches/administrator-michael-regan-remarks-ceraweek-about-epas-approach-deliver-certainty-power.

[18] *See* 40 C.F.R. Part 257, *et seq*.

[19] *See* EPA, Supplemental Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category, 88 Fed. Reg. 18,824 (Mar. 29, 2023).

[20] *See* EPA, Federal Good Neighbor Plan for the 2015 Ozone National Ambient Air Quality Standards, 88 *Fed. Reg.* 36,654 June 5, 2023.

[21] *See* 88 *Fed. Reg.* 33,240 (May 23, 2023).

EPA's efforts to align these rulemaking timetables to the maximum extent possible are well-founded and essential to providing a consistent framework for the industry to continue its transformation. Regulatory certainty surrounding the timing of compliance obligations will allow for EEI members to make fully informed decisions about retiring older assets and bringing on new, cleaner sources of generation and building the infrastructure to support the transformation to clean energy. Specifically, EPA should seek to:

- Provide consistent timelines that accommodate the expected retirement of coal-based EGUs into the 2030s and align those timetables across Agency rulemakings;
- Provide approaches that allow for the retirement of units in lieu of costly investments in new control technologies, which could prolong the lives of higher-emitting EGUs, to achieve maximum and durable environmental benefits; and,
- Allow electric companies to protect customers and address specific reliability concerns through least-cost compliance pathways that are consistent with resource planning horizons.

Many of EEI members' coal-based EGUs are slated or are currently being considered for retirement or repowering with a cleaner fuel in the near future. Many EEI members are vertically integrated electric companies that recover prudently incurred costs via electricity rates. This means that any expenditures in new control equipment or monitors required to comply with the Proposed Rule for coal-based EGUs will be passed to customers via electricity rates. To achieve intergenerational equity, large expenditures, like those for new controls, are depreciated over relatively long time periods. In a time of increasing electricity rates as a result of inflation and increased fuel costs, adding costs that will be borne by customers can constrain investments in new, cleaner replacement generation and transmission. Therefore, accommodating planned retirements has both environmental an affordability benefits, which are both elements of environmental and energy justice.

In the recent final Good Neighbor Rule, EPA "recognizes that retrofitting new emissions controls on aging coal-based EGUs may be less environmentally efficient than the alternative of retirement and replacement, which could yield lower cumulative emissions of NOx and multiple other pollutants over time. The EPA also recognizes that several coal-based EGUs have already been considering retirement in 2028 (or earlier) under compliance pathways available under the Clean Water Act effluent guidelines and the coal combustion residuals rule under the Resource Conservation and Recovery Act." See 88 *Fed. Reg.* 36,796. EPA adds that "To facilitate a unit-level compliance alternative under this rule that maintains the NOx reductions corresponding to SCR-level emissions control performance required by the state budgets from 2026 forward and that is potentially superior both economically and environmentally across multiple regulatory programs than installation of new, capital-intensive, post-combustion controls, the EPA is providing the fleet more flexibility in how to achieve those emissions reductions in the years through 2029."[22] *Id.*

EPA should pursue a similar approach in finalizing the Proposed Rule. If controls or monitors are required for EGUs that are slated to cease combustion of coal in the near future, this creates the possibility that these costs actually extend the life of these units in order to fully recover the investments in new control technologies. In the alternative, if electric companies install these only for a short period of time before ceasing combustion of coal, these costs still will be borne by customers, constraining investments in new, cleaner replacement generation and transmission. In general, if there are still costs to be depreciated, it makes retiring those units significantly

[22] SCR is selective catalytic reduction, a NOx emissions control technology.

more difficult from an economic and regulatory perspective. Accordingly, regulation should consider the long-term benefits of unit closures in terms of permanently reduced emissions and consider whether controls or monitors that prolong the life of a unit are consistent with broader environmental and public health goals.

To address some of these concerns, EPA has proposed to utilize subcategories as established in the proposed ELG rule as well as in the proposed CAA section 111(d) guidelines to provide electric companies with a mechanism to bridge compliance gaps and maximize efficiencies to cease combustion of coal and continue to transform their generation fleets to cleaner sources.[23] EPA has also sought to align the timelines of these subcategories with many of the fleet transition plans of the industry, focusing on providing pathways into the 2030s for units to avoid additional investment in pollution control technologies when those units have enforceable shutdown commitments. Such an approach recognizes that investing in near-term pollution control technology—that needs to be depreciated over long time horizons—can result in the continued operation of sources that would otherwise shut down and could result in overall greater amounts of emissions and discharges to the environment.

Given the utility of these subcategories in other environmental rulemakings, EPA should consider and evaluate whether such an approach could be workable in this rulemaking under CAA section 112. While EPA has utilized classes and categories of sources under CAA section 112—including in this rulemaking for lignite units—the Agency should explore the availability

[23] This allows promotes reliability and resilience by ensuring that necessary generation capacity is available for the rest of this decade, while new capacity is interconnected and new and upgraded transmission lines are built.

of a subcategory for near-term retiring units that aligns with the timelines in both the ELG and CAA section 111 rulemakings. The Agency could set a different level of standards for those types and categories of units, consistent with its statutory obligations. This type of approach could yield significant benefits to both the industry and the environment by avoided emissions through enforceable shutdown commitments, while also balancing affordability and reliability considerations consistent with broader environmental and energy justice goals. At a minimum, EPA should consider whether to provide EGUs additional time—beyond three years—for compliance with MATS, similar to their approach in the final 2012 MATS rule.[24]

While EPA does not propose explicit retirement based subcategories under CAA section 112 given the statutory requirements for HAPs regulation to apply to all regulated sources in a source category, EPA does recognize the practical implications of updating the RTR and its interaction with the proposed subcategories in its other rules by not proposing to lower the fPM standard to a level that would require significant and numerous installations of new controls and significant upgrading of existing controls—although as discussed *infra*, EPA should consider making

[24] EPA provided the opportunity for one-year extension under CAA section 112(i)(3). *See* 77 *Fed. Reg.* at 9,407. If an existing source was unable to comply within three years, a permitting authority had the ability to grant a source up to a one-year extension, on a case-by-case basis. The one-year extension was used frequently by state permitting sources in implementing the 2012 MATS rule, with EPA support. EPA also allowed permitting agencies broad latitude to grant extensions consistent with CAA section 112(i)(3) for installing controls, staggering control installations, or replacements on-site of an existing unit. The availability of a fourth year for construction of new, off-site generating EGUs or transmission upgrades was limited to situations where reliability would be compromised if a unit were retired; in addition, the fourth-year extension was limited in situations where generation from the retiring unit is needed to maintain reliability while other EGUs install controls. President Barack Obama in December 2011 issued a memorandum to EPA addressing "Flexible Implementation of the Mercury and Toxics Standards Rule," which directed that the additional fourth year should be "broadly available to sources, consistent with law, and to invoke this flexibility expeditiously where justified."

targeted adjustments to provide more operational headroom. EPA also recognizes this fact by leaving the rest of the MATS levels unchanged for the vast majority of units. Such an approach is appropriate, and the Agency should not lower any of the proposed limits beyond the currently proposed levels.

IV. Hazardous Air Pollutant Emissions Have Been Significantly Reduced And EPA Properly Retains The Residual Risk Findings Of The 2020 RTR.

The electric industry has significantly reduced emissions of traditional air pollutants, such as mercury and other HAPs. Mercury emissions have been cut from 59 tons in 1990 to 3 tons in 2022, or 95 percent.[25,26] Total HAPs—including all acid gas emissions—declined by 96 percent from 2010 to 2017.[27] In addition, the industry's clean energy transition will reduce HAPs emissions further, and numerous EPA environmental regulations will contribute to additional reductions in HAPs emissions now and in future years.

EPA concluded in the Residual Risk portion of its May 2020 RTR that current standards are protective of human health with an adequate margin of safety.[28] EPA in the current proposal states that the 2020 RTR risk analysis was a rigorous and robust analytical review using approaches and methodologies that are consistent with those that have been utilized in residual

[25] *See* EPA, Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards, page 2-7 (Dec. 2011), https://www.epa.gov/sites/default/files/2015-11/documents/matsriafinal.pdf.

[26] *See* EPA, Power Plant Emissions Trends (Feb. 2023), https://www.epa.gov/power-sector/power-plant-emission-trends.

[27] *See* 84 *Fed. Reg.* 2,670, 2,689 (Feb. 7, 2019).

[28] *See* EPA, 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, 85 *Fed. Reg.* 31,314 (May 22, 2020)

risk analyses and reviews for other industrial sectors. *See* 88 *Fed. Reg*. at 24,866. EPA also finds that the results of the 2020 RTR residual risk assessment indicate low residual risk from the coal- and oil-fired EGU source category and that the current MATS requirements provide an ample margin of safety to protect public health in accordance with CAA section 112. *See id*. Accordingly, EPA is not proposing any revisions to the 2020 Residual Risk review.

EPA's 2020 conclusion that residual health risks from the coal- and oil-fired EGU source category are acceptable is appropriate, given that "cancer risks to the individual most exposed are well below . . . the presumptive limit of acceptability;" there is a "low likelihood of adverse noncancer effects from inhalation exposures;" and "there are also low risks associated with ingestion."[29] The May 2020 RTR findings are consistent with those of the Electric Power Research Institute (EPRI) in a pair of June 2018 reports that concluded that inhalation and multi-pathway health risks from coal-fueled EGUs were well within EPA's established acceptable risk thresholds.[30]

[29] *See id*. at 31,316

[30] *See* EPRI, *Multi-Pathway Human Health Risk Assessment for Coal-Fired Power Plants*, https://www.epri.com/#/pages/product/000000003002013523/?lang=en-US. This study evaluated five "worst-case coal-fired power plants" for carcinogenic and non-carcinogenic risks for adults and children representing resident, farmer and angler populations. This risk assessment shows that cancer and non-cancer risks are, in all cases, below U.S. EPA's acceptable risk thresholds. viii-ix. *See also* EPRI, *Hazardous Air Pollutants (HAPs) Emissions Estimates and Inhalation Human Health Risk Assessment for U.S. Coal-Fired Electric Generating Units: 2017 Base Year Post-MATS Evaluation*, https://www.epri.com/#/pages/product/000000003002013577/?lang=en-US. This evaluated inhalation risks from all coal-fired power plants at the individual plant level. This risk assessment found that inhalation health risks for each chemical individually, and all emitted chemicals combined, were well within EPA's established acceptable risk thresholds.

V. The Agency Should Not Lower The fPM Standard Below The Proposed Level.

EPA proposes to conclude that developments since the original MATS was finalized in 2012—specifically that the majority of sources are "vastly outperforming" the original MATS fPM standards utilizing control technologies that are cheaper and more effective than the EPA forecast in 2012—warrants updating and strengthening MATS, and specifically revising the fPM limits down from 3.0E–02 lb/MMBtu. *See* 88 *Fed. Reg.* at 24,857. EPA therefore proposes to revise the non-Hg metal surrogate fPM emission standard for all existing coal-based EGUs to a more stringent fPM emission standard of 1.0E–02 lb/MMBtu, which it notes is comparable to the MATS new source standard for fPM. *Id*. EPA also solicits comment the option to revise the MATS fPM emission standard to an even more stringent level of 6.0E–03 lb/MMBtu. *Id*. EPA notes that the current proposed level would fulfill EPA's statutory obligation under CAA section 112(d)(6) to update the standards based on technological advancements in control technologies.

EPA should not lower the fPM emission standard for coal-based EGUs any further below the proposed limit of 1.0E–02 lb/MMBtu to maintain alignment amongst the timetables as part of EPA's overall holistic approach as much as feasible. EPA should also consider that units that are cycling to meet demand and also working to comply with the standard may be challenged in specific load-following scenarios, and should consider whether to adjust the proposed level of 1.0E-02 lb/MMBtu slightly higher than proposed—to 1.2E-02 lb/MMBtu or 1.5E-02 lb/MMBtu—based on the individual technical comments provided by member companies that have units that are cycling frequently.

A. A significantly lower fPM standard could require capital decisions that might not align with EPA's holistic approach for regulating the electric power sector across numerous rulemakings.

EPA should not lower the fPM emission standard for coal-based EGUs any further below the proposed limit of 1.0E–02 lb/MMBtu. As EPA estimates in the proposal, nearly 90 percent of existing coal-based EGUs are currently complying with the proposed limit of 1.0E–02 lb/MMBtu. *Id*. EPA asserts that the proposed standard would not necessitate significant, fleet-wide investments in control technology in order to comply with the new, lower limit. The Agency also notes that the current proposed level would fulfill EPA's statutory obligation under CAA section 112(d)(6) to update the standards based on technological advancements in control technologies.

EPA's assertions about cost and ease of compliance do not comport with industry experience and raise concerns. Setting the standard at 6.0E–03 lb/MMBtu would require additional investment in new or significant upgrades to existing control technology to ensure compliance with standards. It also would remove a significant amount of operational headroom for existing and new controls. Therefore, should EPA lower the standard below the proposed limit of 1.0E–02 lb/MMBtu, this would necessitate fleet wide investment in additional controls that could both extend the life of units that would have otherwise been retired and complicate other retirement plans by requiring investments in controls in advance of the 2030 timelines contemplated in other rules. EPA itself recognizes the magnitude of the potential implications as the Agency estimates that moving to a standard level of 6.0E–03 lb/MMBtu would more than triple the affected capacity to 33 GW, which might create implementation challenges. *See id* at 24,870.

The compliance timelines required by CAA section 112 exacerbate these concerns: sources have three years to comply with HAP limitations and can get limited extensions of one or two additional years. Should EPA lower the proposed fPM limit in 2024, sources would be required to comply with those new limits and make retirement or retrofit decisions by 2027 or 2028—well in advance of the timetables laid out by EPA in its other rules and in tension with the Administrator's announced holistic approach to regulating the sector. In order to maintain alignment amongst the timetables as part of EPA's overall holistic approach, EPA should not finalize any fPM limitation below its proposal of 1.0E–02 lb/MMBtu.

B. A lower fPM would create monitoring challenges.

A final fPM limit below 1.0E–02 lb/MMBtu also would create monitoring challenges. In proposing the fPM limit of 1.0E–02 lb/MMBtu, EPA "declines to propose 6.0E–03 lb/MMBtu as the primary policy option here in light of potential costs, including the EPA's current assessment of measurement uncertainty when considering the current fleet. *See id.* at 24,871. EPA states that "[s]ome PM CEMS may struggle to meet the EPA's guideline for average random error contribution to the PM CEMS tolerance to demonstrate compliance with a fPM emission limit of 6.0E–03 lb/MMBtu or lower." *See id.* EPA should not set a fPM limit below 1.0E–02 lb/MMBtu based on this monitoring challenge.

C. EPA should consider changes to the fPM standard based on increased unit cycling to provide additional operational flexibility.

As noted, EPA has proposed to lower the fPM limitation from 3.0E–02 lb/MMBtu to 1.0E–02 lb/MMBtu—which is currently being achieved by the vast majority of coal-based EGUs in the industry for at least one quarter within the previous four years—and also proposes to eliminate

the Low-Emitting EGU (LEE) program for fPM as a result of the lowered standard.[31] One of the practical results of EPA's proposal is to significantly narrow operational flexibility for units by eliminating the "headroom" that existed underneath the LEE level of 1.5E-02 lb/MMBtu. This allowed units—especially those that are cycling or load following as the grid integrates more renewable resources—some additional flexibility to operate. Operators achieved emissions levels below 1.5E-02 lb/MMBtu, in part, to maintain headroom necessary to ensure compliance with the 3.0E-02 lb/MMBtu standard—operating headroom that allows these units to respond to grid conditions and changing load that is often related to the incorporation of increasing amounts of renewable energy. To maintain a similar headroom to the proposed fPM limit of 1.0E-02 lb/MMBtu, operators would likely need to achieve actual fPM emission rates somewhat below 0.01 lb/MMBtu below such a revised fPM standard. This level of control could require additional investment beyond that estimated by EPA for a revised standard of 1.0E-02 lb/MMBtu.

This headroom was helpful since it takes several hours in some instances to get installed emissions controls up to temperature and pressure to operate optimally, and the additional space provided by the LEE level allowed those units to cycle to meet grid requirements without concern of coming near the standard level that would allow them to continue as LEE units for reporting purposes. With the proposed MATS level now being below that LEE level, cycling to meet demand and also comply with the standard may be challenging in specific load-following scenarios that involves unit cycling. EPA should consider whether to adjust the proposed level of 1.0E-02 lb/MMBtu slightly higher than proposed—to 1.2E-02 lb/MMBtu or 1.5E-02 lb/MMBtu

[31] The Low Emitting EGU (LEE) program is an optional stack testing program for EGUs that have operated below the current fPM LEE program limit. The LEE program applies for EGUs meeting emission limits of 1.5E–02 lb/MMBtu (*i.e.*, 50 percent of the current fPM standard).

—based on the individual technical comments provided by member companies that have units that are cycling frequently. This issue may become more pronounced as unit operations continue to evolve as part of the industry's clean energy transition brings on more renewable generating assets that might require units to operate differently over the next decade and beyond, likely increasing the cycling requirements of some units.

D. EPA is justified in keeping most other MATS levels unchanged.

The Agency also proposes to keep many of other levels in the original MATS—including Hg for non-lignite units, acid gases, standards for integrated gasification combined cycle units, and oil-fired units. *See id.* at 24,858. EPA is justified in leaving these standards unchanged, given that the Agency correctly concludes that there are no new technological advancements that would justify any updates to these standards. *See id.* EPA is correct to leave these levels unchanged. Should EPA seek to change any of these levels, it must do so through a separate notice-and-comment rulemaking process.

E. EPA Should consider additional data in setting the fPM limit.

EPA's analysis of fPM data considered a limited data set to determine the limitations proposed. *See id*. This data set was not complete. EPA should conduct analysis on all available data, particularly for current CEMS-monitored units, and consider the potential for seasonable variability in unit fPM emissions performance before establishing a final limit for these emissions. Operating conditions may vary from quarter to quarter, particularly between quarters in which peak demand occurs—which also speaks to the need to consider data across multiple quarters and not rely on individual quarters as part of any analysis. Units may experience different fPM emissions profiles in other quarters where the unit operating profile is different. For example, where a unit ramps up and down in a load-following manner, or experiences more

frequently startups and shutdowns. EPA should account for these variable operating conditions. Accordingly, and given that compliance is measured on a continuous basis, reliance on non-continuous or "snapshot" data is flawed and will not lead to standards with which units can comply. EPA should assess any final standards based on a broader data set.

F. EPA is correct to impose no further requirements on non-continental units.

EPA also proposes no revisions to standards for non-continental oil-fueled units, citing the very low capacity factors for these units as a rationale for not providing updated emissions limits. *Id.* at 24,884. EPA's conclusion is justified given the incredibly low utilization of these units, which are reliability critical assets, and which are likely to be retired and replaced by flexible fuel units in coming years. EPA should finalize this conclusion.

VI. EPA Should Recognize Several Challenges Regarding Installing PM CEMS.

First, while EPA states in its Regulatory Impact Analysis that the overall industry costs of using PMCEMs are lower than using stack testing, it also notes that approximately two-thirds of the existing coal-based generating units—232 units—do not currently utilize such systems. [32] This would represent a significant transition requiring substantial company planning; working with engineering firms on contracts, design and installation; followed by testing to demonstrate initial compliance. It is possible that some EGUs may not be able to complete all aspects of this transition to PM CEMs in time. As noted previously, EPA believes that some PM CEMS may struggle to demonstrate compliance with a fPM emission limit of 6.0E–03 lb/MMBtu or lower. *See id* at 24871. If EPA finalizes a fPM emissions limit of 6.0E–03 lb/MMBtu, it is even more

[32] *See* EPA, Regulatory Impact Analysis for the Proposed National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units Review of the Residual Risk and Technology Review (2023), page 3-10.

likely that some of the more than 200 EGUs needing to install PM CEMs may find it difficult to demonstrate initial compliance within three years.

Second, under the current rule, units can choose to utilize quarterly stack testing or continuous monitoring approaches using CEMS to demonstrate compliance with the alternate fPM emission limit in MATS. In addition, certain units can opt to utilize the LEE with less frequent stack testing.

EPA proposes to require the use of PM CEMS as the method to demonstrate compliance with the fPM emissions limit for covered units pursuant to the Agency's authority under CAA section 112(d)(6). If finalized, EGU owners or operators currently relying on quarterly PM emissions testing would need to install, operate, and maintain PM CEMS. EPA notes that "such a switch is projected to be more cost-effective, more informative, and more effective in assuring compliance than use of quarterly testing. Those EGU owners or operators already using PM CEMS as their means of compliance determination would maintain their current approach; while some may have no need for additional expenditures." *See id* at 24,874. As a result of these new requirements, EPA also proposes to eliminate the fPM LEE program given the lowering of the fPM standard to a level below the current fPM LEE program levels. *Id*.

EPA notes that some EGUs may be on enforceable schedules to cease operations, which may be just beyond the three-year compliance date the EPA proposes for PM CEMS monitoring requirements, and that owners or operators of EGUs may be unable to recoup investments in PM CEMS if the instruments are not in operation for at least a certain period of time beyond their

installation date. *See id*. As noted *supra*, EPA has recognized that investing in near-term pollution control technology—that needs to be depreciated over long time horizons—can result in the continued operation of sources that would otherwise shut down and as a result could result in overall greater amounts of emissions. For units that are currently utilizing stack testing and which have not installed PM CEMS, the installation of CEMS technology will have those units incur additional costs that will need to be depreciated.

If those same units are likely to retire in the near term, EPA should consider creating a new subcategory or program similar to the LEE program to allow these units to continue stack testing in lieu of installing CEMS if they have an enforceable shut down commitment, or opt-in to the retirement-based subcategories EPA has proposed in its other rulemakings. This would allow units to avoid incurring additional costs that would be passed on to customers for limited or no additional environmental benefits. While the LEE program was based on units operating below a certain emissions level, an alternative program could be based explicitly on a unit having a shutdown commitment, with all units still required to comply with EPA's proposed fPM limitation. EPA has the authority to allow this type of compliance flexibility—as it has done before in the LEE program—and should do so here.

VII. Conclusion.

As stated above, EPA should move expeditiously to finalize the Proposed Rule with the clarifications and modifications offered in these comments so EEI members can adequately plan for the future of their generating fleets. EEI appreciates the engagement with EPA staff regarding this rulemaking. As EPA moves to finalize this rule, EEI hopes to continue engaging with

Agency representatives. Questions on these comments may be directed to Alex Bond (202-508-5523).