Mercury and Air Toxics Standards (MATS) for Coal-Fired Power Plants

Review of the 2020 Residual Risk and Technology Review (RTR)
Final Rule

April 25, 2024

Overview

- Key Messages
- Background on MATS Since 2012
- Final Rule
- Emissions Changes, Benefits and Costs

Key Messages

- On April 25, 2024, EPA issued final revisions to strengthen the Mercury and Air Toxics Standards rule for existing coal-fired power plants.
- EPA is finalizing more stringent emissions standards and additional, cost-reasonable monitoring and control methods to further reduce harmful pollution from these sources. The final rule will reduce emissions of mercury and non-mercury metal hazardous air pollutants (HAPs), such as nickel, arsenic, and lead.
- MATS pairs a stronger filterable particulate matter (fPM) standard, as a surrogate for non-mercury HAP metals, with a requirement to use continuous emissions monitoring (CEMs) at the stack. The standard and monitoring requirements work together to increase health protection and provide operators and communities access to better, more up-to-the-moment data.
  - The fPM standard will reduce emissions of hazardous metals and ensure that the worst performing units reduce their emissions to a level that has been demonstrated by most of the existing coal-fired electric steam generating units (EGUs).
  - PM CEMS requirements mean a continuous stream of emissions and performance data will be collected hourly by all coal-fired power plants, and it will be publicly reported at regular intervals -- just like all coal-fired power plants already use CEMS for SO2 and NOX emissions.
- The tighter mercury standard for lignite units will ensure these units meet the same mercury standard as other coal-fired power plants.
- EPA is committed to protecting communities from the various health and environmental impacts of power plant pollution.
- This final rule provides regulatory certainty that allows states, grid operators, and power companies to make investments and planning decisions, while supporting the industry's ability to deliver reliable and affordable electricity.

Background and Timeline

- 2012 – EPA issued final MATS rule for coal- and oil-fired EGUs
  - Within 8 years of promulgating standards under Clean Air Act (CAA) section 112(d)(2), the EPA must conduct a residual risk and technology review (RTR)
  - 112(f)(2): update standards if needed to provide an ample margin of safety to protect public health
  - 112(d)(6): review and revise standards as necessary taking into account developments in practices, processes, and control technologies
- 2020 - RTR Conclusions:
  - Current MATS requirements provide ample margin of safety to protect human health; and
  - Existing air pollution control technologies in use were well-established and provided capture efficiencies necessary for compliance
- 2021 - Executive Order 13990 instructed EPA to consider publishing a notice of proposed rulemaking suspending, revising, or rescinding the 2020 RTR
  - EPA found that no revisions were warranted under risk review – the 2020 risk analysis was conducted approaches and methodologies consistent with those used in RTRs for other source categories
  - EPA found that there have been developments in the costs and effectiveness of control technologies and that many sources outperform current standards
- April 24, 2023 - Published proposed revisions to the MATS rule under Clean Air Act (CAA) 112(d)(6) technology review
- April 25, 2024 – Final Revision to MATS Rule

Final Rule Strengthens MATS

- Particulate Matter (PM) standard used as a surrogate for non-mercury HAP metals, and compliance demonstration requirement:
  - Tighter filterable particulate matter (fPM) standard of **0.010 lb/MMBtu**
    - **Strengthens by 67 percent** compared to 2012 MATS standard of 0.030 lb/MMBtu
- Require all sources to use PM Continuous Emissions Monitoring Systems (PM CEMS) to demonstrate compliance
    - 0.010 lb/MMBtu is the lowest possible fPM limit where PM CEMS can provide valid and enforceable data
- Mercury (Hg) standard for lignite-fired EGUs
  - Tighter Hg emission standard of **1.2 lb/TBtu**
    - **Strengthens by 70 percent** compared to 2012 MATS standard of 4.0 lb/Tbtu
    - 1.2 lb/TBtu is the standard that must be met by all non-lignite-fired EGUs
- Remove startup definition #2

Startup Requirements

- MATS had two options for defining startup:
  - Definition #1: startup ends when steam is used for generation or any on-site purpose
    - requires use of clean fuels for ignition and control device use when coal/oil combustion begins (except for dry scrubber or selective catalytic reduction units, which come online as conditions allow)
  - Definition #2: startup ends 4 hours after the start of generation of electricity or useful thermal energy
    - operators must provide records of clean and non-clean fuel use, load characteristics, as well as exhaust flow and PM control device parameters
- **Final Rule:** Removes startup definition #2

Emissions Changes and Public Health

- Controlling HAP emissions from power plants improves public health for all Americans by reducing the risk of fatal heart attacks, cancer, developmental delays in children, and by reducing adverse environmental impacts.
- These public health improvements are especially important for children and particularly vulnerable segments of the population such as indigenous communities, and people of color and low-income populations who regularly consume fish.
- Emissions reductions in the year 2028:
  - **1,000 pounds** of mercury;
  - **770 tons** of fine particulate matter (PM2.5)
  - **280 tons** of nitrogen oxides (NOx)
  - **65,000 tons** of carbon dioxide (CO2)
  - At least **7 tons** of non-mercury HAP metals

Benefits and Costs

- Benefits over the 10-year period from 2028-2037
  - $300 million in health benefits
  - $130 million in climate benefits.
- Compliance costs over the 10-year period
  - $860 million
- These monetized benefits do not include benefits associated with reductions of HAP such as mercury, lead, arsenic, chromium, nickel, and cadmium.
- In addition, the benefits of the additional transparency provided by the requirement to use PM CEMS for communities that live near sources of HAP, and the assurance PM CEMS provide that the standards are being met on a continuous basis are not monetizable.

For More Information

- A copy of the final rule and fact sheets are at: Mercury and Air Toxics Standards.

Appendix

Units that may need to update controls to meet MATS

- This table summarizes the locations of EGUs expected to need to upgrade existing controls to meet the final revised standards.
- EPA anticipates 33 coal-fired EGUs would need to improve or upgrade their filterable particulate matter (fPM) control technology in order to meet the finalized limit of 0.010 lb/MMBtu.
- EPA anticipates 22 lignite-fired EGUs would need to make changes to comply with the revised mercury emission standard of 1.2 lb/TBtu.

Plant Name	ORIS ID	Potentially Impacted by final mercury (Hg) Standard for Lignite-Fired EGUs or fPM Standard	State
Seminole	136	fPM	Florida
Marion	976	fPM	Illinois
D B Wilson	6823	fPM	Kentucky
Mill Creek	1364	fPM	Kentucky
Red Hills Generating Facility	55076	Lignite & fPM	Mississippi
Labadie	2103	fPM	Missouri
Colstrip	6076	fPM	Montana
Mayo	6250	fPM	North Carolina
Roxboro	2712	fPM	North Carolina
Antelope Valley	6469	Lignite	North Dakota
Coal Creek	6030	Lignite	North Dakota
Coyote	8222	Lignite	North Dakota
Leland Olds	2817	Lignite	North Dakota
Milton R Young	2823	Lignite & fPM	North Dakota
Spiritwood Station	56786	Lignite	North Dakota
Colver	10143	fPM	Pennsylvania
Foster Wheeler Mt Carmel Cogen	10343	fPM	Pennsylvania
John B Rich Memorial power Station	10113	fPM	Pennsylvania
St Nicholas	54634	fPM	Pennsylvania
Westwood Generation LLC	50611	fPM	Pennsylvania
Martin Lake	6146	Lignite & fPM	Texas
Oak Grove (TX)	6180	Lignite	Texas
San Miguel	6183	Lignite	Texas
Harrison	3944	fPM	West Virginia
Mt Storm	3954	fPM	West Virginia
Jim Bridger	8066	fPM	Wyoming
Laramie River Station	6204	fPM	Wyoming