REINHOLD ENVIRONMENTAL ®

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EPA's Latest Rules for the Power Industry

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Biden-Harris Administration Finalizes Suite of Standards to Reduce Pollution from Fossil Fuel-Fired Power Plants

Four final rules deliver on the Biden-Harris Administration's day-one commitment to lead on climate action and to protect all communities from pollution

April 25, 2024

Contact Information
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WASHINGTON – Today, April 25, the U.S. Environmental Protection Agency announced a suite of final rules to reduce pollution from fossil fuel-fired power plants in order to protect all communities from pollution and improve public health without disrupting the delivery of reliable electricity. These rules, finalized under separate authorities including the Clean Air Act, Clean Water Act, and Resource Conservation and Recovery Act, will significantly reduce climate, air, water, and land pollution from the power sector, delivering on the Biden-Harris Administration's commitment to protect public health, advance environmental justice, and confront the climate crisis.

The Rules

https://www.epa.gov/newsreleases/biden-harris-administration-finalizes-suite-standards-reduce-pollution-fossil-fuel

Stronger Carbon Pollution Standards for New Gas and Existing Coal Power Plants	GHG
Strengthening Mercury and Air Toxics Standards	MATS
Stronger Limits on Water Pollution from Power Plants	ELGs
Latest Action to Protect Communities from Coal Ash Contamination	CCR Legacy

The suite of final rules includes:

- **GHG**: A final rule for existing coal-fired and new natural gas-fired power plants that would ensure that all coal-fired plants that plan to run in the long-term and all new baseload gas-fired plants **control 90% of their carbon pollution**.

- **MATS**: A final rule strengthening and updating the **Mercury and Air Toxics Standards** for coal-fired power plants, tightening the emissions standard for toxic metals by 67% and finalizing a 70% reduction in the emissions standard for mercury from existing lignite-fired sources.

- **ELGs**: A final rule to reduce pollutants discharged through **wastewater** from coal-fired power plants by more than 660 million pounds per year, ensuring cleaner water for affected communities, including communities with environmental justice concerns that are disproportionately impacted.

- **CCR**: A final rule that will require the safe **management of coal ash** that is placed in areas that were unregulated at the federal level until now, including at previously used disposal areas that may leak and contaminate groundwater.

Green House Gas Rule

Green House Gas (GHG) Rule – New Gas Units

For new combustion turbines, 3 subcategories based on generation:

	Standard basis	Capacity Factor	Compliance Deadline
Baseload turbines	Phase One – efficient design and operation of combined cycle turbines Phase Two – 90% capture of CO_2	>40%	Jan 1, 2032
Intermediate load turbines	Efficient design and operation of simple cycle turbines	20-40%	Jan 1, 2030
Low load turbines	Low-emitting fuel	<20%	Jan 1, 2030

GHG Rule – Existing Coal

Existing coal-fired electric generating units (EGUs) subcategories based on future operations

- States may be able to provide a variance based on remaining useful life and other factors such as fundamentally different circumstances than those considered by EPA and the source cannot reasonably achieve this required degree of emission limitation.

Category	Standard basis	Requirement	Compliance Deadline
Long Term Units	Operate on or after January 1, 2039	90% Carbon Capture and Storage	Jan 1, 2032
Medium Term Units	Cease operations by January 1, 2039	Numeric rate based on 40% Natural Gas Cofiring	Jan 1, 2030
Short Term Units	Cease operations by January 1, 2032	None	

GHG Rule – CCS Issues

- **Existing gas-fired electric generating units exempt for now.** EPA committed to expeditiously proposing GHG guidelines for existing units.
- Two previous EPA failures in regulating GHGs
- Is CO_2 capture rate of 90% achievable?
- Location of saline aquifers for capture? CO_2 leak prevention and control
- CCS pipelines?
- Underground injection control permitting

GHG – Gas Cofiring Issues

- Availability of gas and determining rights of way/Easements
- Non-curtailable gas supply? Or take generation derates during cold weather.
- Distance away, types of crossings
  - Rail
  - Highway
  - Wetlands and waterways
- Construction permitting
  - Methodology of crossing
  - Permit approvals
  - Mitigation?
- Air permit modifications

Mercury & Air Toxics Standards

Mercury & Air Toxics Standards (MATS) Rule

Changes:

- For existing coal-fired EGUs, revising fPM limit from 0.030 to 0.010 lb/MMBtu.
- For lignite-fired EGUs, revising Hg limit from 4.0 lb/TBtu to 1.2 lb/Tbtu.
- For coal and oil-fired EGUs, requires use of PM CEMs.

Dates:

- Effective date is July 8, 2024
- Compliance date July 8, 2027

fPM – Filterable Particulate Matter
CEMs – Continuous Emissions Monitoring System

Mercury & Air Toxics Standards (MATS) Rule

Technologies

- Tune & maintain existing ESPs / equipment?
- Wet ESPs?
- Baghouses?

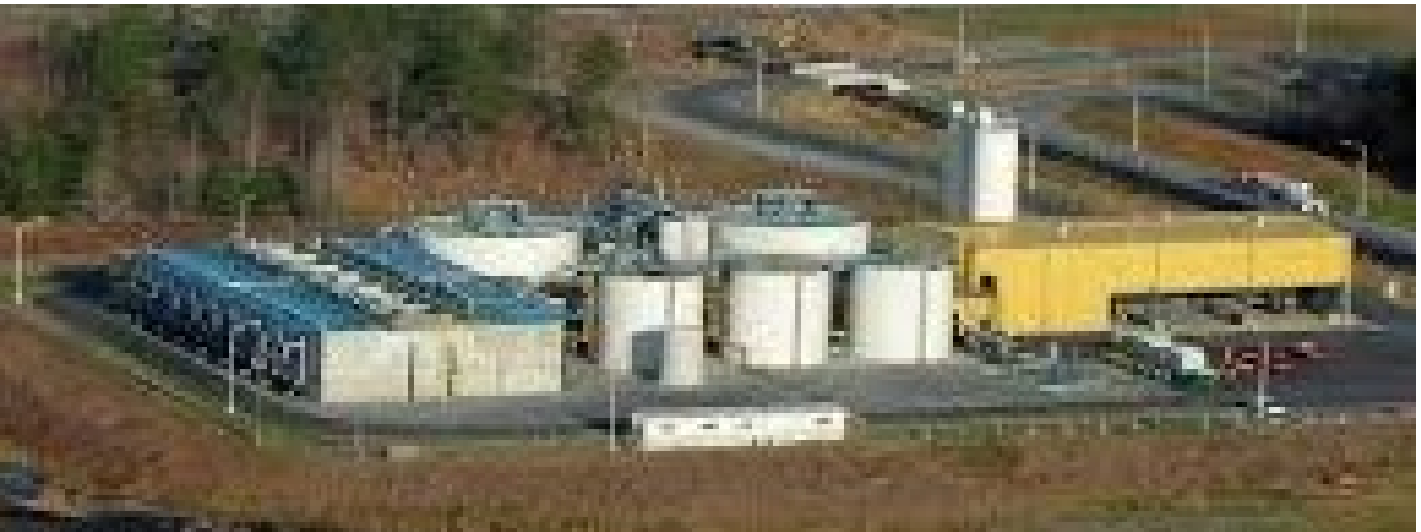
Notes:

- How to shoehorn in new controls equipment?
- No wet sluicing on wet ESPs! ELGs call for no discharge.
- Construction permitting?

Effluent Limitation Guidelines

Effluent Limitations and Guidelines (ELGs)

- Flue Gas Desulfurization (FGD) Wastewater
- Bottom Ash Transport Water
- Combustion Residual Leachate
- Legacy Wastewaters



Effluent Limitations and Guidelines (ELGs)

Flue Gas Desulfurization (FGD) Wastewater

- Comply with 2020 ELGs, then no discharge after 12/31/2029
- Permeate/Distillate may be reused for FGD/boiler makeup water
- Can obtain extension for discharge of permeate

Exceptions:

- Early Retirement by 2028
- VIP by 2028
  - Deadline has passed
- **New Subcategory:** Retire by 2034
  - 120 Days of flow for decommissioning
  - Submit NOPP by 12/31/2025

Effluent Limitations and Guidelines (ELGs)

Bottom Ash Transport Water (BATW)

- Comply with 2020 ELGs, then no discharge after 12/31/2029
- May be reused for FGD makeup water

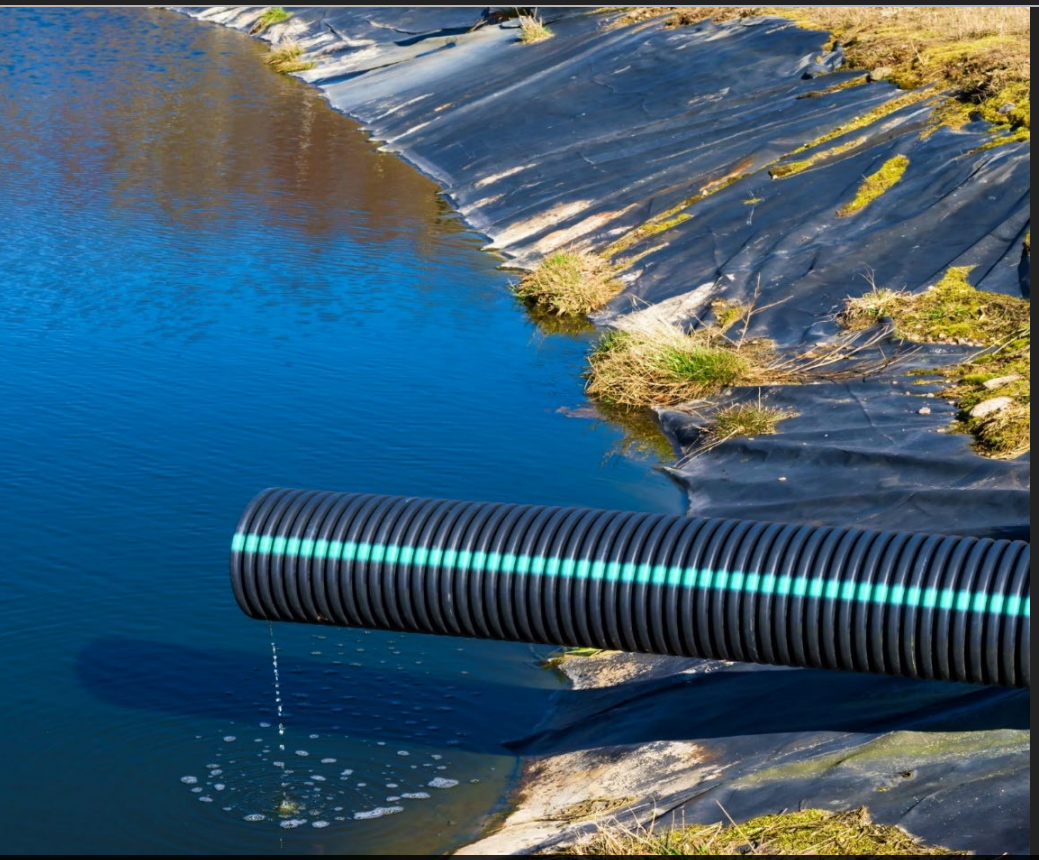
Exceptions:

- Early Retirement by 2028
  - Deadline has passed
- **New:** Retire by 2034
  - Submit NOPP by 12/31/2025
  - 120 Days of flow for decommissioning

Bottom Ash Transport Water (BATW)

Wastewater used *to convey* bottom ash or economizer ash from the ash collection or storage equipment or boiler and has direct contact with the ash.

- Quench water not used for transport is exempt from BATW definition
- Wastewater/stormwater commingled with BATW becomes BATW



Combustion Residual Leachate (CRL)

Leachate

Leachate from landfills or surface impoundments containing combustion residuals.

Leachate

Composed of liquid, including any suspended or dissolved constituents in the liquid, that has ***percolated through*** waste or other materials emplaced in a landfill, or that ***passes through*** the surface impoundment's containment structure *(e.g., bottom, dikes, berms).*

Combustion Residual Leachate

Includes ***seepage and/or leakage*** from a combustion residual landfill or impoundment unit. Combustion residual leachate includes wastewater from landfills and surface impoundments located on ***non-adjoining property*** when under the operational control of the permitted facility.

Effluent Limitations and Guidelines (ELGs)

Combustion Residual Leachate (CRL)*

- No Discharge after 12/31/2029 while (power) units still generating
  - Following retirement, VIP limits
- Exceptions
  - Contact Stormwater
  - Retire by 2034
    - Submit NOPP by 12/31/2025

Permeate/Distillate may be reused for FGD/boiler makeup water?

- In the preamble but not in the rule. Omission by EPA?

*If the generating units retired prior to 2015, then the CRL is **not** regulated as CRL in the final rule. EPA intended to regulate CRL prospectively from 2015. (Page 40234 of the Federal Register published on May 9, 2024.)

Effluent Limitations and Guidelines (ELGs)

CRL Post Closure (VIP) Limits

Parameter	Daily Max	Monthly Average
Arsenic (µg/L)	5	NA
Mercury (ng/L)	23	10
Selenium (µg/L)	10	NA
Nitrate/Nitrite (mg/L)	2.0	1.2
Bromide (mg/L)	0.2	NA
TDS (mg/L)	306	149

Effluent Limitations and Guidelines (ELGs)

Unmanaged Combustion Residual Leachate (CRL)

- Functional Equivalent of a Direct Discharge (FEDD) or captured groundwater discharged to a WOTUS
  - As & Hg Limits apply in addition to any site-specific requirements
  - Requires annual monitoring reports of FEDDs

Chemical Precipitation Limits[1,2]		Daily Maximum	Monthly Average
Arsenic, As	µg/L	11	8
Mercury, Hg	ng/L	788	356

[1]2034 Retirement Subcategory, Unmanaged CRL
[2]Impoundments Commencing Closure after 7/8/2024 under 40 CFR 257.102(e) containing FGD, BATW or CRL.

Effluent Limitations and Guidelines (ELGs)

Legacy Wastewaters

Legacy not defined *per se* in the 2024 rule, only described/defined in the preamble

- Water subject to ELGs before ELG applicability date in NPDES permit
- e.g., CRL remaining in an impoundment after the ELG applicability date

Limits set by State through Best Professional Judgment (BPJ)

Effluent Limitations and Guidelines (ELGs)

Insights:

- 2024 ELG applicability dates incorporated via NPDES permit
- Coordinate/communicate with Permit Writers ASAP for 2024 ELG applicability date (beginning date is 7/8/24 for new ELGs)
- Begin work on company website ASAP, required to post certain submittals
- 2034 retirement requires that 2020 ELGs be incorporated into NPDES permit. Some sites may not have up-to-date permits.
- Ensure permits have “must run” language

Legacy Coal Combustion Residuals Rule

Legacy Coal Combustion Residuals (CCR) Rule

New Regulations for:
- Inactive landfills
- Legacy Surface Impoundments (SI)
- Inactive impoundments
- CCR Management Units

Impact:
- Nationwide
- 100s of power plants
  - Active & Inactive
- Several 100s of CCR units

Legacy Coal Combustion Residuals (CCR) Rule

Regulations for CCR Management (CCRMU) Units

- Sites with regulated impoundments had coal ash in areas outside of regulated units, potential sources of detected groundwater contamination.
- "CCR management units"
  - CCR surface impoundments and landfills that were closed prior to the effective date of the 2015 CCR Rule, and
  - Inactive CCR landfills and inactive CCR piles.
- Requires:
  - Groundwater monitoring, corrective action, closure, and post closure care requirements
  - Subject to the regulations when they are located at active facilities and inactive facilities with a legacy CCR surface impoundment.

Applicability and Facility Evaluation Reports

- Owners and operators of facilities report to identify the units, with figures of the facilities and where the units are located, and the sizes of the units.
- Post reports on their websites for the public to access.

Schedule, starting six months after the publication date

May 8, 2024

Legacy SI

0 to 3 Months

Applicability Documentation

Establish CCR Website

Fugitive Dust Control Plan

Weekly Inspections

Monthly Instrumentation Monitoring

Site Security Measures

Install Permanent Marker (**2 months**)

Annual Inspections (**3 months**)

14 to 18 Months

Annual Fugitive Dust Control Plan (**14 months**)

History of Construction (**15 months**)

Hazard Potential Classification

Structural Stability

Safety Factor

Emergency Action Plan
Inflow Design Flood Control Plan

30 Months

Install GW Monitoring System

GW Sampling and Analysis Program

Detection Monitoring and Assessment Monitoring

36 Months

Closure Plan

Post-Closure Care Plan

42 Months

Initiate Closure

Annual GW Monitoring Reports will be based on dates.

CCRMU

0 Months

Initiate Facility Evaluation

Fugitive Dust Control Plan*

(*covered under facility with 2015 units or Legacy SI)

15 Months

Establish CCR Website

Facility Evaluation Report Part 1

27 Months

Facility Evaluation Report Part 2

42 Months

Install GW Monitoring System

GW Sampling and Analysis Program

Detection Monitoring and Assessment Monitoring

48 Months

Closure Plan

Post-Closure Care Plan

54 Months

Initiate Closure

Note: Extensions available in the final rule still being evaluated.

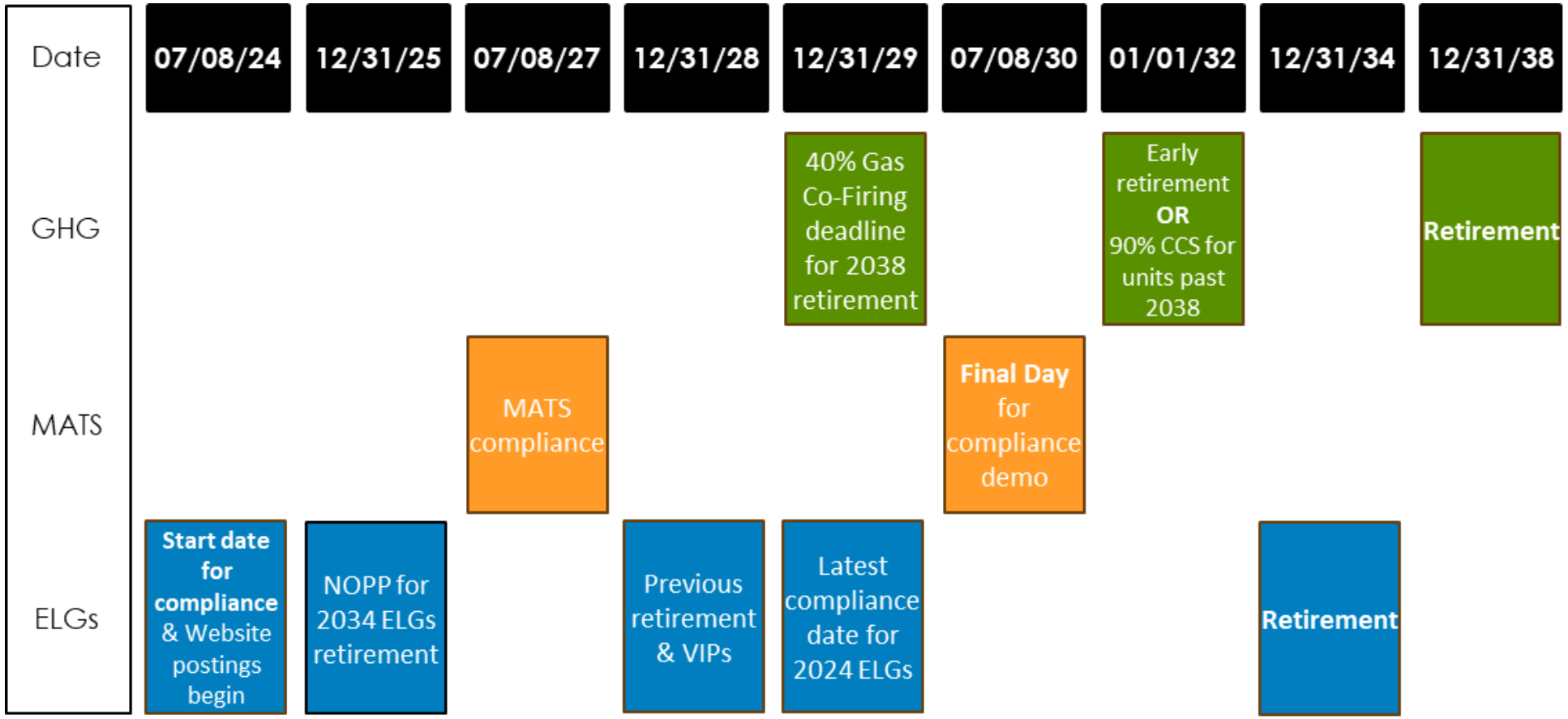
E.G. The final rule allows an owner to operator to obtain as many as three 6-month extensions (or 18 months from the effective date of the final rule) to complete the field investigation.

Annual GW Monitoring Reports will be based on dates.

Take Aways….

- Dates are not coordinated between the rules.
  - E.g., retirement date for GHG: 2032, ELGs: 2034
- Tremendous financial commitment to keep coal plants operating.
- Read the rules in their entirety, not just the changes.
- There is and will be litigation.
- Regulatory flux will continue.
- The future of coal and grid reliability is dim.

Rule Coordination/Unit Retirement Decisions



Key
CCS – Carbon Capture & Storage
ELGs – Effluent Limitations Guidelines
GHG – Greenhouse Gas Rule
MATS – Mercury and Air Toxics Rule
NOPP – Notice of Planned Participation
VIP – Voluntary Incentive Plan

Questions

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