

REINHOLD ENVIRONMENTAL[®]



2024 Reinhold/PCUG Round Table Presentation

Hosted by LG&E/KU and Co-hosted by Southern Co. and TVA
in The Marriott Resort Lexington Griffin Gate Hotel, Lexington,
KY on June 24-25, 2024

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EPA
Regulation
Overview
Reinhold Conference

JUNE 24, 2024

Geoffrey Hensley



Current Status

EPA Final Rules

EPA Regulation Final Rules

- Five new rules with significant reliability implications
- Posted to the Federal Register between 05/07/24 and 05/09/24

Litigation

- Petitions already filed by states, industry coalitions and special interest groups
- Half the states in the US listed on a WV petition against the GHG (111) Rule
- More expected to be filed prior to the July 8th deadline
- OG&E, Idaho Power, Entergy, and Tucson Electric provided critical declarations demonstrating the air rules pose immediate harm to utility companies.

Strategic Planning Implications

- EPA expected to release proposed rule for existing gas prior to the election
- GHG final rules likely to change post-election despite the outcome
- PJM expressed concerns about the new rules, given “vastly increased demand” it expects due to new data centers and the electrification of transportation and heating

“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.”

- EPA Press Office

“The EPA has not sufficiently reconciled its compliance dates with the need for generation to meet dramatically increasing load demands on the system.” - PJM

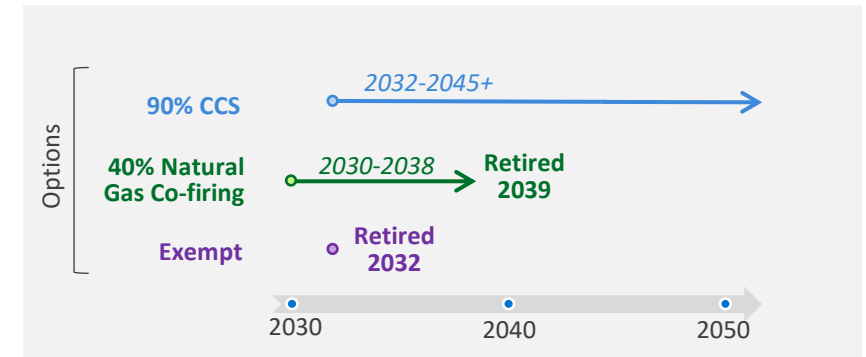
EPA Final Rules Greenhouse Gas Rule 111(d): Existing Coal Units

Final Rule Overview

- Three options with dates of retirement correlated to specific technology requirements
 - Exempt (coal) with no technology selected – retire by 2032
 - Natural gas cofire – retire by 2039
 - Carbon capture and sequestration – no set retirement date
- Initial effective year of 2030 if gas co-firing or total gas conversion is selected
- Utilities must provide states with their intent for inclusion in state plans in 2026 for EPA approval

Emissions Guidelines

Exempt Units retiring by 01/01/32	<ul style="list-style-type: none"> Exempt from the regulation due to commitment to close before 2032
Medium-Term Units operating 01/01/32 – 01/01/39	<ul style="list-style-type: none"> Co-firing 40% natural gas by 01/01/30 Emission rate limitation reduction of 16% annually
Long-Term Units operating on or after 01/01/39	<ul style="list-style-type: none"> CCS with 90% capture of CO₂ by 01/01/32 88.4% reduction in emission rate #/MWh-gross



Existing Natural Gas- and Oil-fired CTs:

- While not impacted by this final rule, EPA opened a non-regulatory docket gathering information about GHG regulation of existing natural gas combustion turbines. Working through industry groups to submit approaches on development of this rule.
- A future rule is expected to be released before the 2024 election which will propose regulation of gas- and oil-fired combustion turbines.

EPA Final Rules

Greenhouse Gas Rule

111(d): Existing Coal Units

EPA Public Policy Forum

- Held on May 17, 2024 regarding regulating GHGs under Section 111(d)
- Discussed operational and technological trends, power sector considerations, and program design & implementation
- Environmental Group Positions
 - Oppose carbon capture and hydrogen because it is “unsafe”
 - Oppose data centers and “data mining”
 - Stressed the importance of EJ communities and requested cumulative impacts be included to protect overburdened communities
- Industry & RTO Positions
 - Expressed the critical role of existing gas units, which are unique depending on their location
 - Stressed importance of flexibility noting load growth isn’t slowing down
 - Reminded EPA that timing is crucial in this rulemaking

“Retirements outpace the generation needed to support load growth. 21% of PJM’s fleet is scheduled for retirement. Not good during times of explosive load growth. The rules have the potential to penalize the most efficient resources. EPA should propose market-based solutions.”

- Craig Glazier, VP Policy, PJM

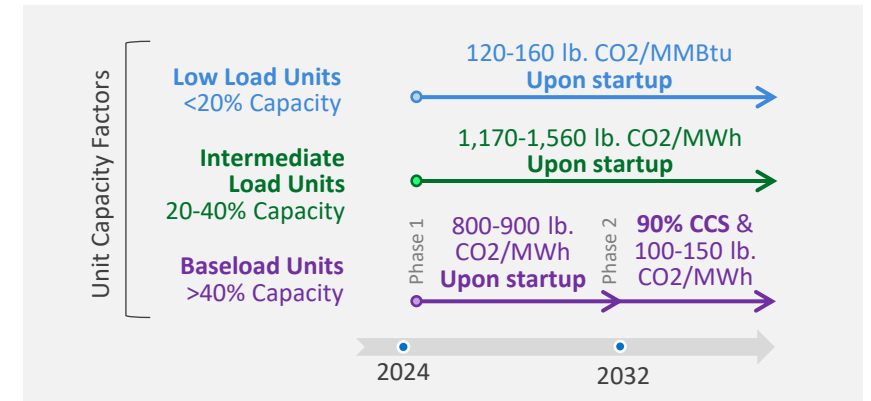
EPA Final Rules

Greenhouse Gas Rule

111(b): New/Modified/Reconstructed Gas Units

Final Rule Overview

- Effective upon start-up of new or modified combustion turbine or steam generating units
- CO₂ emissions standard requirements varying by capacity factor (load), fuel, unit operations
 - Low load & intermediate load units
 - CO₂ emission standard dependent on unit operation/fuel characteristics
 - Baseload unit implementation in two phases
 - **Phase 1:** CO₂/MWh emission standard
 - **Phase 2:** 90% carbon capture and sequestration (CCS) and reduced carbon emission standard beginning 2032
- Modification of a coal unit to convert to gas could trigger compliance requirements under 111(b)
- Many planned projects current evaluating to determine what technology will comply



“Reconstruction” Definition:

- Existing facility fixed capital cost replacement components exceeding 50% of the fixed capital cost to construct a comparable entirely new facility

“Modification” Definition:

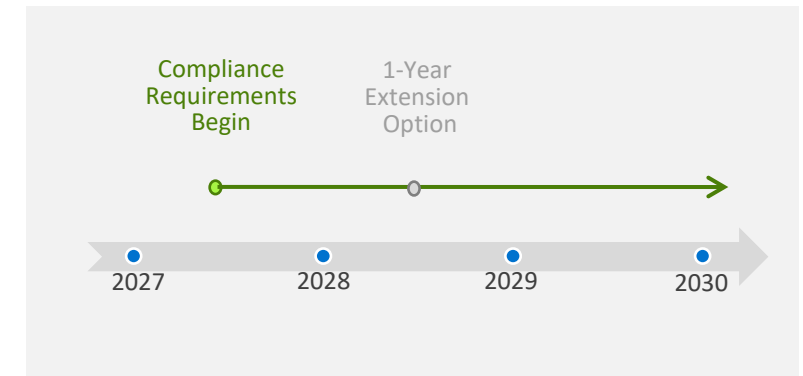
- Any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant

EPA Final Rules

Mercury & Air Toxics Standard (MATS)

Final Rule Overview

- Sources must come into compliance by 07/27
- Sources may seek an additional 1-year extension of the compliance date from their permitting authority
- Particulate matter (PM) was limit lowered from 0.030lb/MMBtu to 0.010lb/MMBtu
- Compliance must be based on Continuous Emissions Monitoring (CEMS) – stack testing option eliminated
- Issues identified with developing correlation curves for CEMS at such low levels, particularly in wet stack situations
- Option to utilize sorbent traps to measure HAP metals is being evaluated by EPA
 - Expected to take a year to evaluate
 - Facilities would need to submit an application to utilize this compliance demonstration method

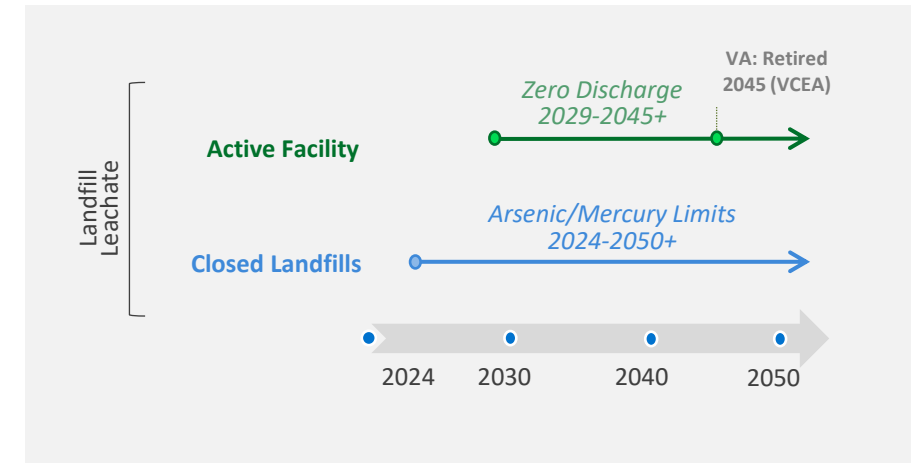


EPA Final Rules

Effluent Limit Guidelines (ELG)

Final Rule Overview

- Zero liquid discharge of FGD water and bottom ash transport water
- New requirements dependent on landfill status
 - Active Landfills
 - Zero liquid discharge of landfill leachate
 - Required during next permit renewal but no later than 12/31/29
 - Notice of Planned Participation (NOPP) must be filed by 12/31/25 – extends to 12/31/34 – subject to closed landfill requirements
 - Closed Landfills or Surface Impoundments
 - New limits
 - Arsenic – 11 ug/L daily max
 - Mercury – 788 ng/L daily max
 - Compliance date to be determined by permitting authority

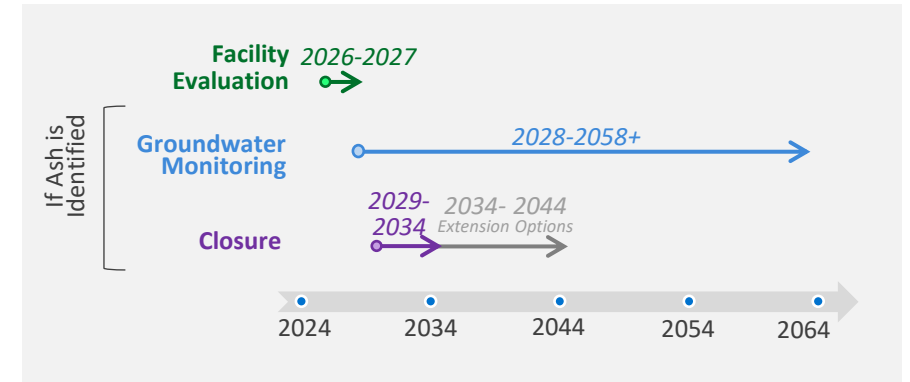


EPA Final Rules

CCR Legacy Rule

Final Rule Overview

- Increases scope of the original 2015 CCR disposal regulations
- Requires identification of historical ash placement at active facilities
 - Expands definition of active facilities to include any historical coal-fired stations that produced electricity as of 10/19/15, regardless of the fuel source at that time
 - Requires facility evaluation report to identify ash
 - No Ash Identified: No further actions
 - Ash Identified: Additional monitoring and closure obligations are required



Questions