Review of Recent EPA proposals: Effluent Limitation Guidelines, Mercury and Air Toxics Standards, and GHG New Source Performance Standards

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Effluent Limitations Guidelines Update

- One Final Rule and One Proposal
  - Direct Final Rule: Extend deadline to apply for “Permanent Cessation of Coal Combustion Category” to June 27, 2023
  - Proposal: Supplemental Effluent Limitation Guidelines and Standards for Electric Generating Units
    - Updates to requirements for flue gas desulfurization wastewater, bottom ash transport water, and coal combustion residual leachate
    - Impacts @ 15,000 MW in PJM
    - Considers use of multiple retirement subcategories

Mercury & Air Toxics Standards

- Proposal seeks to amend current rules
  - More stringent fine particulate standard
  - Employ continuous emission monitoring
  - Focus on lignite units; however, potentially impacts a few thousand MWs of coal units in PJM

Greenhouse Gas New Source Performance Standards

- Five Proposals
  - *revised standards for new fossil fuel-fired stationary combustion turbine electric generating units (EGUs)*
  - revised standards for modified fossil fuel-fired steam generating EGUs
  - *emission guidelines for existing fossil fuel-fired steam generating EGUs*
  - *emission guidelines for existing stationary combustion turbines*
  - repeal of the Affordable Clean Energy Rule

GHG Standards for New Combustion Turbines

- Low load (peakers) – ≤ 8% capacity factor: 120-160 lb/MMBtu
- Intermediate load – >8% - <45% capacity factor:
  - Immediate – 1,150 - 1,530 lb CO2/MWh gross
  - 2032 – 1,000 - 1,290 lb CO2/MWh and 30% blend of hydrogen
- Base load – Initial limit 770 - 1,200 lb CO2/MWh, gross
  - Hydrogen option
    - 2032 – 680 - 1,100 lb CO2/MWh and 30% blend of hydrogen
    - 2038 – 90 - 130 lb CO2/MWh and 96% blend of hydrogen
  - CCS option – 2035, 90-130 lb CO2/MWh and CCS with 90% capture

GHG Standards for Existing Steam Units

Coal: (4 subcategories, requirements begin in 2030)

- Long-term – Operate past 2040: use CCS at 90% capture and 88.4% reduction in CO2 rate
- Mid-term – Retire by 2040: co-fire with at least 40% natural gas and 16% reduction in CO2 rate
- Near-term – Retire by 2035: limit capacity factor to 20%, routine methods of operation, no CO2 rate increase
- Imminent-term – Retire by 2032: routine methods of operation, no CO2 rate increase

Note: @ 15,000 MW impacted in PJM. This is in addition to those identified in the 4R report.

Natural gas and oil: Limited requirements

GHG Standards for Existing Combustion Turbines

- Base load (> 300 MW and > 50% capacity factor)
  - Hydrogen option
    - 2032 – 30% blend of hydrogen and 12% reduction in CO2 rate
    - 2038 – 96% blend of hydrogen and 88.4% reduction in CO2 rate
  - CCS option
    - 2035 – CCS with 90% capture and 89% reduction in CO2 rate

Note: @ 40,000 MW of combined cycle units impacted in PJM.

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