

Docket No. AD23-9-000
Reliability Technical Conference
“EPA’s Clean Power Plan 2.0 and Reliability”
Written Statement of Michelle Bloodworth
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November 9, 2023

Introduction

I am Michelle Bloodworth, president and CEO of America’s Power. First, I want to commend the Commission for scheduling this technical conference and thank you for the opportunity to speak about the proposed Clean Power Plan 2.0 (or Carbon Rule) and its potential impacts on the reliability of the U.S. power grid. At the same time, it is important to emphasize that other EPA regulations also undermine grid reliability.

By way of background, America’s Power is the only national trade organization whose sole mission is to advocate at the federal and state levels on behalf of coal-fired electricity and the supply chain that supports the coal fleet. Our membership includes electricity generators, coal producers, barge operators, and equipment manufacturers. We believe the coal fleet and its supply chain are essential to maintaining grid reliability for the foreseeable future.

There have been numerous warnings about a pending grid reliability crisis. One of the primary reasons is the premature retirement of dispatchable electricity resources, mostly coal. Despite these clear warnings which began several years ago, an alarming number of coal-fired power plants continue to retire, and the pace of these retirements is faster than most people realize.

To make matters worse, the Carbon Rule and other EPA regulations will cause even more premature coal retirements. Even though these regulations put virtually the entire coal fleet at risk of premature retirement and increase the prospects for a reliability crisis, we are not aware of any proper analysis by EPA or others that will enable regulators and stakeholders to understand and mitigate the impacts of the Carbon Rule on grid reliability. Therefore, we have urged EPA to withdraw the proposed rule because of its legal flaws, technical deficiencies, unrealistic compliance deadline (January 1, 2030), and lack of proper reliability analysis. We filed [comments](#) on the Carbon Rule with EPA in May. Those comments further explain our objections to the rule.

Coal retirements are increasing

America's Power has been tracking announced coal retirements for more than a decade. So far, more than 40% (roughly 125,000 MW) of the nation's coal fleet has retired. Past EPA regulations caused or contributed to these retirements. As a result, the remaining coal fleet currently totals some 188,000 MW of generating capacity, according to EIA.

Announced coal retirements, as of August, total slightly more than 84,000 MW (summer capacity) by 2030, with more than 81,000 MW retiring by 2028. This leaves as much as 104,000 MW of coal at risk of retiring prematurely because of the unrealistic compliance deadline and infeasible compliance options in the Carbon Rule.

A few of these coal retirements are converting to natural gas. However, reliance on natural gas carries well-known risks, such as supply interruptions and price volatility. The Carbon Rule and other EPA regulations will exacerbate the problems that are described in the recent North American Energy Standards Board (NAESB) report about the interdependence between the natural gas and electric sectors and the growing risks associated with natural gas for electric generation. In addition to the twenty recommendations outlined in the NAESB report to FERC, the Commission should avoid policies that cause the premature retirement of more coal plants and that adversely affect reliability.¹ That is why we have been urging that fuel assurance be valued as an essential reliability attribute for the electric generating fleet.

We recognize that announced retirement dates are subject to change. Since last year, the retirement of more than 12,000 MW of coal capacity has been delayed or canceled. Most of these delays or cancellations were due to reliability concerns. However, announced retirements are a useful proxy for the scale and timing of retirements and, thus, their potential impacts on grid reliability.

Six EPA regulations target the coal fleet

Earlier this year, EPA proposed or finalized four regulations that are projected to cause more coal retirements. Mentioning EPA's projected coal retirements below does not mean that we agree with them. Based on our data, we think EPA has drastically understated future coal retirements.

- “Proposed Supplemental Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category” (proposed March 2023). EPA projects the proposal will cause **300 MW** of coal retirements.
- “Federal Good Neighbor Plan for the 2015 Ozone National Ambient Air Quality Standards” (finalized March 2023). EPA projects the proposal will cause **13,000 MW** of coal retirements by 2030.

- “National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units Review of the Residual Risk and Technology Review” (proposed April 2023). EPA projects the proposal will cause 500 MW of coal retirements by 2028. However, EPA is taking comment on a more stringent alternative proposal that would cause the retirement of **12,200 MW** of coal.
- “New Source Performance Standards for Greenhouse Gas Emissions From New, Modified, and Reconstructed Fossil Fuel-Fired Electric Generating Units; Emission Guidelines for Greenhouse Gas Emissions From Existing Fossil Fuel-Fired Electric Generating Units; and Repeal of the Affordable Clean Energy Rule” (proposed May 2023). EPA projects the proposal will cause **12,000 MW** of coal retirements by 2030 and **31,000 MW** by 2035. However, EPA’s model projects substantial coal retirements due to the Inflation Reduction Act, which means there is a smaller amount of coal-fired capacity left to retire because of the Carbon Rule.

In addition, EPA has been slowly implementing regulations that deal with coal combustion residuals and regional haze. No projections of coal retirements are available for these two regulations.

Unless these six regulations are substantially moderated or overturned, we expect them to cause a larger number of coal retirements than EPA projects, further exacerbating the possibility of a near-term reliability crisis.

While the Carbon Rule is the explicit focus of this panel, the collective impacts of EPA regulations on reliability cannot be ignored. Hypothetically, a utility faced with the decision of whether or not to install selective catalytic reduction on a coal unit at a cost exceeding \$100 million to comply with the Good Neighbor Rule might choose to make the investment in 2026 and continue operating. However, faced with the additional cost of complying with the Carbon Rule by 2030, the utility might choose to retire the coal unit in 2026.

What is “reliability”?

NERC is responsible for assuring “the effective and efficient reduction of risks to the reliability and security of the grid” in the U.S. and parts of Canada and Mexico. NERC develops reliability standards and issues annual reliability assessments. NERC defines reliability as both resource adequacy and operating reliability. Adequacy means having sufficient generating capacity to meet peak electricity demand, and operating reliability means “the ability of the Bulk Power System to withstand sudden disturbances, such as electric short circuits or the unanticipated loss of system elements from credible contingencies, while avoiding uncontrolled cascading blackouts or damage to equipment.”ⁱⁱ NERC’s definition of reliability

means that any proper analysis of EPA regulations should include impacts on operating reliability, not simply resource adequacy.

Certain attributes are essential for reliability

Reliable operation of the grid (operating reliability) depends on having the right mix of reliability attributes. Over the course of the past six years, PJM and MISO have identified attributes that are necessary for reliability: fuel assurance, dispatchability, reactive capacity, primary frequency response, regulation, voltage stability, ramp rate up and down, rapid start-up, minimum downtime, availability in all seasons, energy adequacy, run time limitations, inertia, black start, system stability and extreme weather performance. No single electricity resource provides all of these attributes. The coal fleet is needed because it provides many of these attributes, including energy adequacy, fuel assurance, seasonal availability, long duration at high output, ramping, inertia, and voltage stability.ⁱⁱⁱ

In addition, coal plants have a high accredited capacity value that helps prevent electricity shortfalls. Accredited capacity is a measure of how dependable a resource is when electricity demand peaks. The table below shows capacity values that PJM and MISO use for reliability planning purposes. The ranges mean that capacity values vary at different times of the year. For example, PJM has proposed to assign capacity values of 86% for coal and 76% for natural gas during the winter when extreme weather and competition with other uses make gas less dependable than coal for electricity generation.

	Capacity Value ^{iv}
Coal	86% – 92%
Natural gas	76% – 97%
Wind	9% – 40%
Solar	2% – 45%

Based on these capacity values, coal is two to ten times more dependable than wind and two to 45 times more dependable than solar.

The coal fleet has maintained an average on-site coal stockpile equivalent to 76 days of normal coal burn and 39 days of full-load burn during the past five years.^v As of June 2023, the average coal plant burning subbituminous coal had a stockpile that represented 134 days of normal burn; plants burning bituminous coal had a stockpile representing 137 days of normal burn.^{vi} The coal fleet is not forced to rely on weather conditions (wind and sunlight) or just-in-time fuel delivery (natural gas) to produce electricity. For example, coal was able to provide almost half (47%) of the additional electricity during the height of [Winter Storm Elliott](#) in the PJM region. The coal fleet’s on-site fuel gave coal plants immediate access to fuel when needed.

Because of its relatively stable and low price, coal is also a reliable option when other electricity resources are not available or are too expensive. For example, according to EIA, average delivered monthly coal prices over the past 15 years have ranged from \$1.88 to \$2.45/MMBtu; natural gas prices have ranged from \$2.04 to \$15.73/MMBtu. During that period, coal prices averaged \$2.16/MMBtu and natural gas prices averaged \$4.39/MMBtu.

EPA did not analyze reliability

According to the preamble to the proposed Carbon Rule, “EPA has carefully considered the importance of resource adequacy and grid reliability in developing these proposals and is confident that these proposed NSPS and emission guidelines . . . can be successfully implemented in a manner that preserves the ability of power companies and grid operators to maintain the reliability of the nation’s electric power system.”^{vii} However, EPA lacks the expertise and tools to conduct a proper reliability analysis, especially one based on NERC’s definition of reliability.

Although EPA used its IPM model to project the impacts of the Carbon Rule on the coal fleet and electricity markets,^{viii} the agency’s modeling results are not sufficient to assert that the proposed rule will not cause adverse reliability impacts. This shortcoming is clearly evidenced by the fact the IPM model does not forecast reliability impacts. For example, the agency acknowledges that the future electricity supply projected in the IPM reference case “is assumed to be adequate and reliable,” even though this assumption is at odds with warnings about the increasing risks in the future to resource adequacy and grid reliability.^{ix}

One fundamental shortcoming of EPA’s assessment is that the Agency only evaluates “resource adequacy” but not “reliability.” As EPA itself recognizes, “resource adequacy . . . is necessary (but not sufficient) for grid reliability.”^x This is because resource adequacy is focused only on ensuring the availability of “adequate generating resources to meet projected load and generating reserve requirements in each power region.”^{xi} By contrast, “reliability” is a much broader concept that “includes the ability to deliver the resources to the loads, such that the overall power grid remains stable.”

We agree with EPA that resource adequacy and reliability are not the same thing. The problem with the Carbon Rule is that EPA has failed to complete a proper reliability assessment that encompasses both resource adequacy and operating reliability. In fact, the agency has not conducted any type of analysis or modeling regarding the reliability impacts of the dispatchable generation retirements in the IPM reference case. Rather, EPA used IPM to analyze resource adequacy (but not operating reliability) under the Carbon Rule.

According to EPA, IPM is “designed to ensure resource adequacy.”^{xii} The model projects resource adequacy in the future “either by using existing resources or through the construction of new resources.”^{xiii} In other words, the model adds enough hypothetical resources to project resource adequacy in the future. That means the model EPA uses will not project a resource adequacy problem. According to the documentation for IPM, “the model determines the location and size of the potential units to build.”^{xiv} However, there is no assurance that the hypothetical resources that are created by EPA’s model will actually be built. Given the notorious difficulty of building new electric transmission lines, the same can be said of new transmission created by the model. According to EPA, “... IPM assumes that adequate within-region transmission capacity exists or will be built to deliver any resources located in, or transferred to, the region.”^{xv}

Without knowing the reliability consequences (per NERC’s definition) of retirements for the IPM reference baseline, it is simply impossible for EPA to make any credible claims regarding the reliability impacts of coal retirements caused by the Carbon Rule.

FERC questions

The conference notice asked that panelists be prepared to discuss four questions. I will provide a brief response to each one but welcome the opportunity to elaborate during the panel discussion.

- 1) ***“Will the rule, if implemented as proposed, affect electric reliability? In what ways?”*** The proposed rule would undermine electric reliability in two ways: by causing the premature retirement of coal-fired generating capacity and by causing the loss of essential reliability attributes that are provided by the coal fleet. The loss of generating capacity and reliability attributes are due to the combination of an unrealistic and impractical compliance deadline (compliance is required by January 1, 2030) and the lack of adequately demonstrated infrastructure and technologies to meet the requirements of the rule (substantial gas co-firing or the installation of carbon capture). Therefore, EPA should withdraw its proposed Carbon Rule and re-propose a rule that is free of legal flaws and technical deficiencies and that is supported by proper reliability analysis.

The reliability impacts of EPA regulations should be analyzed properly and mitigated *before* regulations are finalized and implemented. This is why we support the GRID Act, even though FERC staff expressed opposition to the act in recent testimony before the House Energy, Climate, and Grid Security subcommittee.

- 2) ***“What tools and processes should the Commission, other federal and state agencies, and industry consider in order to implement the proposed rule? What***

authority should the Commission and other federal and state agencies have in order to address potential reliability issues that could arise during implementation of the proposed rule?" Because the Carbon Rule is so profoundly flawed, there are limits to what can be done to implement the rule and avoid reliability problems by using existing mechanisms. For example, in organized wholesale markets, grid operators can use [reliability-must-run \(RMR\) agreements](#) to address temporary transmission security issues caused by a generator retirement. Agreements expire when transmission has been built to remedy the transmission security issue. This is not a tool that grid operators may use to address concerns about insufficient generating capacity, which is a resource adequacy concern. In other words, RMR agreements are not designed to compensate for the loss of substantial amounts of coal-fired generation, especially without the need for out-of-market payments that distort market prices and put financial pressure on resources that are not receiving RMR payments.

Likewise, Federal Power Act section 202(c) orders issued by the Department of Energy (DOE) to temporarily suspend compliance requirements are not an effective way to support reliability because these orders are intended to address last minute, unexpected emergency situations that are beyond the control of the affected entities or are due to unforeseen circumstances. In addition, these orders are typically granted for only a few weeks, at most, which would not allow time to develop effective and longer-term remedies for reliability problems.

If the Carbon Rule is not withdrawn or overturned, the establishment by EPA of a flexible framework for states to develop implementation plans under the proposed rule could mitigate some of the rule's harm. Clean Air Act section 111(d)(1) allows states "to take into consideration, among other factors, the remaining useful life of the existing source" in the development of their state implementation plans. Also, EPA's regulations (40 C.F.R. §60.24(f)) allow states to "provide for the application of less stringent emissions standards or longer compliance schedules" due to a variety of factors, including "unreasonable cost of control," "physical impossibility of installing the necessary control technology," or "other factors [which could include electric grid reliability concerns] ... that make application of a less stringent standard or final compliance time more reasonable."

The proposed rule is highly prescriptive and does not afford an opportunity for states to develop flexible implementation plans that include alternative compliance schedules, retirement deadlines, and performance standards necessary to prevent reliability problems. Under a flexible framework, states would be allowed to develop implementation plans based on reliability analyses

performed by DOE and FERC in consultation with grid operators and other such entities.

- 3) ***“What existing processes for coordination will enable federal and state agencies, planning entities, and industry stakeholders to share ongoing developments relevant to the implementation of the proposed rule?”*** There are a number of groups that have been discussing reliability and EPA regulations. These include, but are not limited to various grid operator committees, Organization of PJM States (OPSI), Organization of MISO States (OMS), Southeastern Association of Regulatory Utility Commissioners (SEARUC), Mid-Atlantic Conference of Regulatory Utilities Commissioners (MACRUC), and NARUC. In addition, EPA and DOE have entered into a Memorandum of Understanding which lacks sufficient structure to make it an effective mechanism for sharing information.

Because these are ad hoc efforts, there needs to be a formal mechanism or process for coordination and information sharing among policymakers and stakeholders. Such a mechanism could be established through either Executive Order or federal legislation. For example, Executive Order (EO) 13211 (2001) requires the preparation of a Statement of Energy Effects for “significant energy actions.”^{xvi} This EO could be amended to establish a grid reliability coordination group, or the White House could issue a new EO. In addition, the GRID Act, which is being considered in the House of Representatives, could be amended to require not only reliability analyses of certain rules but also the establishment of a coordinating group.

- 4) ***“What specific tools are currently available to agencies to consider impacts to retail consumers? Are there additional tools that should be developed to consider these issues?”*** We are not experts on the tools that might be available to agencies to “consider” impacts on retail customers. In this case, EPA projected changes in nationwide and regional retail electricity prices due to the Carbon Rule. However, energy costs tend to be regressive. That is, lower-income families expend a higher percentage of their income on energy than higher-income families. Our past research has shown that the lower the household’s income, the higher the percentage of income the household pays for energy. It would be very useful to develop tools, if they do not exist already, to estimate changes to energy costs for middle- and lower-income households.

Thank you again for the opportunity to speak today and submit this information. For questions or additional information, please contact me at mbloodworth@americaspower.org or Paul Bailey at pbailey@americaspower.org.

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- ⁱ <https://www.rtoinsider.com/59040-market-monitors-endorse-naesb-gas-electric-recommendations/>
- ⁱⁱ NERC, “Reliability Terminology,” August 2013.
- ⁱⁱⁱ MISO, “System Attributes Stakeholder Workshop,” September 21, 2022, and “Mind the Gap – OMS Resource Adequacy Summit,” August 8, 2022.
- ^{iv} Both MISO and PJM have proposed changes to their capacity values. The values in the table include MISO’s *current* capacity values and PJM’s *proposed* capacity values.
- ^v Energy Ventures Analysis, “Coal Stockpile Report,” July 2023. Days of full load burn represents a coal plant operating at maximum capacity until its coal stockpile is depleted.
- ^{vi} EIA, “Electricity Monthly Update,” August 2024. The average number of days of coal burn held at power plants is a forward-looking estimate of coal supply given a plant’s current stockpile and past consumption patterns.
- ^{vii} Carbon Rule at 33,246.
- ^{viii} See EPA, “Power Sector Modeling.”
- ^{ix} EPA, Office of Air and Radiation, “Resource Adequacy Analysis Technical Support Document,” at 3 (Apr. 2023) (Resource Adequacy Analysis TSD).
- ^x *Id.*
- ^{xi} *Id.* at 2.
- ^{xii} *Id.* at 3.
- ^{xiii} *Id.*
- ^{xiv} EPA, Office of Air Quality Planning and Standards, “Documentation for Post-IRA 2022 Reference Case,” at 4-1 (Generating Resources) (Apr. 5, 2023).
- ^{xv} Resource Adequacy Analysis TSD at 4.
- ^{xvi} “Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use,” May 18, 2001.