

# Grid Resilience

## Background

On September 29, 2017, Secretary of Energy Rick Perry issued a notice of proposed rulemaking (NOPR) to the Federal Energy Regulatory Commission (FERC or Commission) requesting that FERC issue a final rule requiring payments to provide for full cost recovery for electric generating facilities meeting certain criteria that can be met by coal and nuclear plants. The secretary issued the NOPR pursuant to section 403(a) of the Department of Energy (DOE) Organization Act, a rarely used provision that authorizes the secretary to propose rules and regulations for certain functions, among which are the establishment of rates and charges under Federal Power Act sections 205 and 206. FERC, however, retains final jurisdiction over any proposed rules issued under section 403(a) and chose to terminate the NOPR proceeding in early January 2018.

The NOPR proposed that FERC issue a final rule applicable to each of the independent system operators (ISOs) and regional transmission organizations (RTOs) that oversee both energy and capacity markets. Not all RTOs operate capacity markets, and therefore the rule would only have applied to the PJM Interconnection (PJM), ISO New England (ISO-NE), and New York ISO (NYISO). A number of commenters argued that the rule would not apply to the Midcontinent Independent System Operator (MISO) because it operates only a voluntary capacity market.<sup>1</sup>

If FERC had finalized the rule as proposed, the Commission would have required RTOs to establish tariffs that allow for full recovery of costs, including a return on equity, for eligible reliability and resiliency resources. To qualify as a reliability and resiliency resource, a generator, among other requirements, would have had to maintain a 90-day supply of fuel on site and provide essential energy and ancillary reliability services, including, but not limited to, voltage support (to prevent voltage from falling too low), frequency services (to maintain a steady alternating current frequency), operating reserves (generating

capacity above expected demand to supply power in the event of an emergency or unexpected need for power), and reactive power (a type of power that establishes and sustains the electric and magnetic fields of alternating-current equipment, and prevents voltage drops). Although the NOPR did not specify the types of generating technologies that would have been eligible for cost recovery under the proposal, the 90-day on-site fuel supply effectively restricted the eligible resources to nuclear and coal facilities (although not all coal plants have that extensive of a coal stockpile).

The rationale provided by DOE for the NOPR was that “[t]he resiliency of the nation’s electric grid is threatened by the premature retirements of power plants that can withstand major fuel supply disruptions caused by natural or man-made disasters.” According to the NOPR, RTO-operated wholesale markets are not adequately pricing the resilience attributes of resources with regular access to on-site fuel. DOE did not define the term resilience in the NOPR, but under standard definitions of the term, resilience refers to infrastructure’s ability to reduce the magnitude and/or duration of disruptive events, such as severe weather or physical or cyber-attacks.

On January 8, 2018, FERC issued an order terminating the DOE NOPR proceeding and initiating a new docket to evaluate the resilience of the bulk power system in the regions operated by RTOs and ISOs.

## What Was the Reaction to the Proposed Rule?

Over three hundred comments were filed at FERC in response to the NOPR in late October 2017, with the majority opposed to the proposal. Many commenters argued that DOE had not provided sufficient justification for implementation of such an extreme and costly proposal, and many noted that power outages are often caused by transmission and distribution outages, not fuel supply or generation problems. A number of commenters also noted that coal plants, a primary beneficiary of the rule, do not perform well during extreme cold weather

<sup>1</sup> For more information on wholesale electricity markets, see APPA issue briefs “Wholesale Electricity Markets and Regional Transmission Organizations” and “RTO Capacity Markets and Their Impacts on Consumers and Public Power.”

or hurricanes, and therefore payments to coal plants cannot be justified by citing resilience needs. Another concern expressed in the comments was that the proposal would severely disrupt the competitive electricity markets by singling out certain resources for direct payment.

A relatively small number of comments were filed in support of the rule from entities that owned coal or nuclear plants or are in related industries, such as coal mining and labor.

### What Action Did FERC Take?

On January 8, 2018, FERC announced it was ending the proceeding under the NOPR because it had found that the NOPR neither demonstrated that existing RTO and ISO tariffs are unjust and unreasonable nor proposed a remedy that would be just and reasonable and not unduly discriminatory or preferential. But the Commission agreed that there is a need for further examination of the risks that the bulk power system faces and possible ways to address those risks in changing electricity markets. FERC then requested that the RTOs respond to a series of questions about how resilience is defined, whether the RTOs have conducted analyses of the threats to resilience, and how they mitigate such threats. The order does not invite or request specific proposals from the RTOs.

### RTO Resilience Filings

The RTOs submitted lengthy responses to the Commission's questions, many of which summarized ongoing activities to assess and address resilience. But the RTOs also stated that they were working on or considering market rule changes to enhance resilience, such as expanded operating reserves or changes to performance incentives and penalties.

PJM's filing contained the greatest number of specific requests for Commission action, including requests for the Commission to initiate proceedings for RTOs and non-RTO transmission providers for implementation of resilience planning criteria and processes; proposed market reforms and related compensation mechanisms; and initiatives addressing the interaction between RTOs and interstate natural gas pipelines. Moreover, PJM requested that the Commission ask PJM itself to file tariffs implementing market changes and allow for non-market emergency operations.

ISO-NE found the most significant resilience challenge to be fuel security, noting that the shift from generators with onsite fuel to generators relying on "just-in-time" fuel delivery is challenging the system's resilience, particularly during winter peak demands. The ISO is examining a range of market solutions to the fuel security concern and asked the Commission to allow the region sufficient time (through the second quarter of 2019) to develop a solution through the stakeholder process.

The California ISO (CAISO) recommended that the Commission take a holistic approach that considers the unique circumstances and conditions facing each region. CAISO does not presently see the need for an additional resilience requirement. Existing reliability standards already call for consideration of extreme events. The ISO believes creating a new risk-based analysis requirement would likely be overly prescriptive, difficult to clearly define, and likely duplicate existing reliability standards given the wide range of varying specific risks each of the ISOs and RTOs face.

NYISO reported that it is undertaking a comprehensive review and reevaluation of its planning process, market products, and operational practices to ensure the continued ability to efficiently and reliably serve New York's electricity requirements. NYISO requested that the Commission allow the ISO to continue to work with its stakeholders to develop these needed enhancements to wholesale markets. According to NYISO, the necessity or reasonableness of implementing measures to provide even greater levels of reliability should be carefully examined in consideration of their benefits and costs.

MISO stated that, although it does not face any imminent reliability or resilience issues, there are several opportunities for the Commission to continue focused industry dialogue. These include increasing the flexibility of Critical Infrastructure Protection compliance standards to allow for the adoption of superior new technologies and best practices; identifying, valuing, and incorporating resilience attributes in transmission planning processes; continuing to work in partnership with state regulators; and ensuring that artificial barriers to interregional transactions do not adversely affect resilient grid operations.

Southwest Power Pool (SPP) stated that an over-dependence upon any fuel poses a potential capacity shortage risk, and that SPP has avoided this risk largely by the development of transmission infrastructure. SPP stated that more work is needed to develop and refine cost recovery and allocation mechanisms for costs incurred in support of resilience.

The Electric Reliability Council of Texas (ERCOT) filed comments along with the Public Utility Commission of Texas (PUCT). ERCOT recognized that it is not subject to FERC jurisdiction, but saw value in providing input. ERCOT and the PUCT stated that resilience has always been an essential part of their larger public mission to ensure adequate and continuous service and underscored the importance of market design. Scarcity-based pricing mechanisms, they argued, not only encourage sufficient long-term investment in generation, but also help to ensure that generation owners maintain their units to maximize availability during a variety of possible system disturbances.

## RTO Resilience Actions

While it is not clear what actions, if any, FERC will take regarding resilience, the RTOs are beginning to take actions to address “fuel security,” a concept related to resilience. Fuel security addresses the ability of an RTO system to withstand the potential disruption of the supply of one type of fuel, such as a pipeline outage, and is a separate issue from having sufficient generating capacity in total. FERC in December 2018 approved a request from ISO-New England to enter into short-term cost-of-service agreements with retiring generators determined to be needed for fuel security because the units use liquified natural gas from a terminal rather than relying on natural gas pipelines. The ISO will be filing a longer-term fuel security proposal by the fall of 2019.

At the end of 2018, PJM released a fuel security analysis, finding no threats to reliability under a vast majority of different scenarios. But PJM has since initiated a stakeholder process to examine whether market or operational changes are needed to ensure fuel security. NYISO has also commissioned an analysis of fuel security under different scenarios, expected to be issued later in 2019.

## FirstEnergy Request for DOE Emergency Action

On March 29, 2018, FirstEnergy requested that DOE, under section 202(c) of the Federal Power Act, find that emergency conditions exist within the footprint of PJM that require intervention by the Secretary of Energy. Section 202(c) allows the secretary to order temporary connections of facilities, and generation, delivery, interchange, or transmission of electricity to address an emergency, such as an increase in the demand for electric energy, or a shortage of electric energy or of facilities for the generation or transmission of electric energy, or of the fuel or water for generating facilities. Specifically, FirstEnergy asked that all qualifying generators within the PJM footprint enter into four-year contracts with PJM to provide full cost recovery for those plants. Qualifying plants are nuclear and coal-fired generators that have a supply of fuel onsite sufficient to allow 25 days of operation at full output, that are substantially compliant with all applicable federal, state, and local environmental laws and regulations, and that do not recover any of their capital or operating costs through rates regulated by a duly authorized state regulatory authority, municipal government, or energy cooperative.

APPA and many others filed protests in opposition to the FirstEnergy request with DOE. PJM also stated that it does not support the requested action. To date, DOE has not responded to the request.

## American Public Power Association Position

The American Public Power Association (APPA or Association) did not support the DOE NOPR but agrees that the RTO-operated markets are not well suited to address fuel security and diversity. However, the proposed rule was not a reasonable approach to such market shortcomings because it failed to demonstrate that the retirement of certain generation resources presents an immediate reliability threat or that the proposal itself would have addressed the resilience concerns raised by the Secretary of Energy.

FERC’s decision to end the NOPR proceeding and open a docket to gather information from the RTOs and ISOs was a reasonable approach. APPA filed reply comments in response to the RTOs’ submissions, in which it made the following points:

- The information submitted by the RTOs demonstrates that there is no need for any specific Commission actions on resilience at this time;
- Should the RTOs propose measures aimed at promoting resilience, such proposals should include empirical evidence showing that the measures will meaningfully address an identified resilience threat and do so in a cost-effective manner;
- RTO actions should be undertaken on a regional basis, with input from regional stakeholders;
- Actions taken by the Commission to support grid resilience must be consistent with the statutory limits on its jurisdiction; and
- RTO- and ISO-operated markets should not be the central focal point for promoting generation resilience, as these markets have not proven to be an optimal means to achieve a resource mix that will provide all the attributes required for long-term system reliability.

APPA will be closely monitoring RTO and FERC actions to ensure that resilience as a concept is not used as a reason for costly or unjustified market rule proposals.

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