

FERC Needs To Act On Resilience

(Part 3 in a series from America's Power)

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"FERC had put out a resilience [proposal] some time ago, but there's been nothing since." Andrew L Ott, President and CEO of PJMⁱ

The continuing retirement of fuel-secure electricity sources may be making the grid less resilient to major disturbances that could interrupt electricity for prolonged periods of time. Fuel security — ensuring that fuel is always available to generate electricity — enables the grid to absorb and recover quickly from manmade or natural disturbances that otherwise could have severe, possibly catastrophic, consequences.

The coal fleet provides more fuel security than the fastest growing sources of electricity that are replacing coal — namely, natural gas, wind and solar. Natural gas is considered a just-in-time fuel source, and wind and solar provide no fuel security. By contrast, large quantities of coal are stockpiled on site at coal-fired power plants. Over the past five years, coal stockpiles have averaged 75 days of burn for plants using subbituminous coal and 81 days of burn for plants using bituminous coal.ⁱⁱ These stockpiles mean that the average coal-fired power plant could operate, if necessary, for more than two months if fuel deliveries were interrupted. Despite its contribution to fuel security, an alarming 40 percent of the nation's coal fleet has retired or has announced plans to retire.ⁱⁱⁱ Nationwide, some 26,000 megawatts (MW) of coal-fired generation are expected to retire over the next three years.^{iv}

Pretty much everyone agrees that the electricity grid needs to be resilient, but not everyone agrees on the exact meaning of resilience or what criteria (or metrics) should be used to determine whether the grid is resilient. Reliability is important, which is why we have criteria for measuring it. The North American Electric Reliability Corporation has objective standards for reliability.^v On the other hand, resilience is also important, but we don't have any criteria or standards for resilience.

Last September, the Department of Energy (DOE) proposed a rule for the Federal Energy Regulatory Commission (FERC) that was intended to improve grid resilience by supporting electricity sources that are fuel secure.^{vi} FERC rejected

the DOE proposal, but the commission at least started collecting information about resilience from the nation's grid operators.^{vii} Except for ISO-NE and PJM, grid operators seemed uninterested in doing anything new to address resilience in their regions.^{viii} FERC collected the information more than six months ago but has given little indication what it plans to do next. Mr. Ott's quote at the beginning of this blog ("nothing since" then) sums up the situation.

PJM is taking steps to address resilience in its 13-state footprint by conducting a fuel security analysis. This is important because more than 32,000 MW of coal-fired generating capacity in PJM will have retired by 2020, more than any other ISO/RTO.^{ix} According to PJM's Independent Market Monitor, more than two-thirds of these retirements will occur because coal-fired power plants are unable to recover sufficient costs to operate.^x Valuing fuel security would provide a revenue stream that could prevent some of these retirements. However, Mr. Ott's testimony noted, "PJM cannot do this alone ... we proposed 10 specific recommendations to FERC of concrete steps that can be taken to provide critical guidance [on resilience]. We respectfully await their action on those initiatives and other related issues." He went on to urge, "We need action [from FERC] ... especially [on] this issue of fuel security."

We recognize that resilience and fuel security are complicated issues that cannot be resolved overnight, but there are a few simple things that FERC can do now that would be helpful:

- ✓ **Roadmap** The easiest thing FERC can do is lay out milestones and a plan (i.e., a roadmap) for completing its review of grid resilience.
- ✓ **"Resilience"** FERC should establish a uniform definition for resilience based on public comments submitted to the commission several months ago. This would provide a better indication of how the commission views grid resilience.
- ✓ **Analysis** FERC could direct RTOs and ISOs to conduct analysis to determine whether their grids are resilient to high impact low frequency events. Moreover, the commission could provide guidance regarding scenarios and assumptions. For example, as part of its fuel security initiative, PJM is modeling 12 scenarios to evaluate the potential effects of fuel disruptions. Such analysis by grid operators could help the commission determine the extent to which the ISO/RTO grids are, or are not, resilient.

Last, it is imperative that the Senate confirm Mr. McNamee so that FERC can address resilience and fuel security with a full complement of commissioners.

ⁱ "Testimony of Andrew L. Ott, President & CEO PJM Interconnection, L.L.C., before the Senate Energy and Natural Resources Committee, October 11, 2018." PJM operates the largest bulk power system in the U.S.

ⁱⁱ EIA, “Electricity Monthly Update with data for May 2018, July 24, 2018.”

ⁱⁱⁱ ACCCE, “Retirement of Coal-Fired Electric Generating Units, Status as of September 26, 2018.”

^{iv} *Ibid.*

^v Transmission security and resource adequacy are both measures of grid reliability. Transmission security refers to planning and operating the transmission system in a way that anticipates the possibility of failure of key system elements in order to minimize the loss of service to large groups of customers, to not cause any area of the interconnected system to become unstable and lose its integrity, and to not cause generation or transmission equipment to operate outside their normal limits. Resource adequacy refers to the amount of capacity needed to serve a forecasted peak load while meeting the required loss of load expectation (LOLE) criterion. The LOLE criterion defines the adequacy of capacity that ensures load cannot exceed available capacity, on average, more than one day in 10 years.

^{vi} *Grid Resiliency Pricing Rule*, 82 Fed. Reg. 46,940 (Oct. 10, 2017).

^{vii} FERC, *Grid Resilience in Regional Transmission Organizations and Independent System Operators*, Docket No. AD18-7-000, January 8, 2018.

^{viii} MISO, SPP and ERCOT said, in so many words, that their grids are resilient. However, there is no universally agreed-on definition of resilience, nor are there any criteria or metrics for determining whether the grid is resilient.

^{ix} ACCCE, “Retirement of Coal-Fired Electric Generating Units, Status as of September 26, 2018.”

^x *PJM State of the Market Report 2017*, p. 309. (“In 2017, most units did not achieve full recovery of avoidable costs through net revenue from energy markets alone ... There are between 38 and 46 coal units, with between 17,302 MW and 21,039 MW, at risk [of retirement].”