

To Make The Grid Resilient, FERC Should Value Fuel Security

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The Federal Energy Regulatory Commission (FERC) is collecting information from grid operators and stakeholders to determine how to make sure the bulk power system in the nation's RTO/ISO regions is resilient. The commission proposed to define resilience as “[t]he ability to withstand and reduce the magnitude and/or duration of disruptive events, which includes the capability to anticipate, absorb, adapt to, and/or rapidly recover from such an event.” (We also like PJM’s definition which is consistent with FERC’s but focuses more on the extraordinary nature of events ?“high impact, low frequency” (HILF) ? that challenge grid resilience.) Fuel security is essential to a resilient electricity grid because it enables the grid to absorb and recover rapidly from HILF events.

The nation’s coal fleet is fuel secure because the average coal-fired power plant has a 70 to 80 day supply of coal stockpiled on site. However, coal-fired power plants are retiring at an alarming pace. Since 2010, almost 115,000 megawatts (MW) of coal-fired electric generating capacity have retired or announced plans to retire. These retirements are roughly equivalent to shutting down the entire electricity supply of Texas. Almost 40% of the U.S. coal fleet that operated less than a decade ago has shut down or is shutting down. Two-thirds of the coal fleet operates in RTO/ISO footprints. So far, more than 45,000 MW of coal-fired generating capacity in ISO/RTO regions have retired, and owners have announced intentions to retire an additional 17,000 MW over the next three years.

We filed comments with FERC that include a study by Quanta Technology that illustrates the resilience risks facing the electricity grid[\[1\]](#).

Quanta used the 13- state PJM region to illustrate what could happen in the near future because of premature coal retirements and lack of fuel security. Among other things, the Quanta study shows that PJM will lose its resilience if coal retirements continue.

Our comments suggested several steps that FERC should take to ensure the grid is resilient:

- FERC should establish a uniform definition of resilience. The definition should clarify the relationship between resilience and reliability because there seems to be a fair amount of confusion ? intentional or not ? about the two. As the National Academies of Science, Engineering and Medicine said last year, reliability and resilience are not the same thing[\[2\]](#). But some still like to argue that because the grid is reliable, we should also assume the grid is resilient

- The definition of resilience should lead to identifying specific attribute—for example, fuel security—that are necessary to ensure grid resilience.
- FERC should direct NERC to establish standards for resilience, just as NERC has standards for reliability.
- FERC should direct RTOs and ISOs to conduct modeling and analysis designed specifically to determine whether their grids are resilient to prolonged winter events, other credible HILF events, accelerated coal and nuclear retirements, and lack of fuel security.
- Wholesale electricity markets should value resilience attributes. Fuel security is essential to resilience, just like essential reliability services are critical to reliability, and fuel security should be valued in much the same manner wholesale markets value other attributes such as essential reliability services. There are market-based approaches that can be developed to accomplish this.

Our purpose in submitting comments to FERC is to help make sure the grid is resilient, as well as reliable. Pointing out the need to value fuel security is not, as some claim, an attempt to save resources that may be uneconomic.

[1] Quanta Technology, LLC, “Ensuring Reliability and Resilience – A Case Study for the PJM Power Grid,” April 23, 2018.

[2] National Academy of Sciences, “Enhancing the Resilience of the Nation’s Electricity System,” 2017.