



**UNITED STATES  
NUCLEAR INFRASTRUCTURE COUNCIL**

**Comments for the Federal Energy Regulatory Commission**

**On Grid Reliability and Resilience Pricing Rule**

**Docket No. RM18-1-000**

*Pursuant to Section 403 of the U.S. Department of Energy Organization Act and the Secretary of Energy's September 28, 2017, proposed rule for final action by the FERC to ensure that certain reliability and resilience attributes of electric generation resources are fully valued.*

**OVERVIEW**

The United States Nuclear Infrastructure Council (USNIC) is pleased to offer its comments on the Secretary of Energy's proposed rule on Grid Reliability and Resilience Pricing (Docket No. RM18-1-000) for final action by the Federal Energy Regulatory Commission (FERC).

The USNIC is the leading American business consortium advocate for new nuclear energy and civil nuclear exports. The Council consists of key mover utilities, technology developers, construction engineers, fuel cycle providers, manufacturers and fabricators and suppliers across the spectrum of the U.S. nuclear energy supply chain. These comments represent the consensus of the Council; however, they do not necessarily represent specific views of individual member companies and organizations.

We welcome Secretary Perry's farsighted, bold, decisive and urgent request for swift FERC reforms to address the threat to U.S. electric grid resiliency emanating from premature retirements of fuel-secure traditional baseload resources, such as nuclear energy.

The Secretary's FERC initiative comes at an especially critical juncture for the Nation and nuclear energy with America facing a bow wave of historically unprecedented premature plant retirements -- including a significant number of nuclear plants that have provided reliable, economical electricity for America over the past five decades. At the same time, the current market paradigm has resulted in a virtual moratorium on advanced nuclear energy baseload plant construction in the United States.

We agree that it is time for FERC to take prompt steps to address the erosion of baseload capacity and the shrinking of the U.S. nuclear fleet at the cost of grid reliability and resiliency. This action will ensure that the Nation's electric grid remains world class. It is also warranted to

reduce the threat of energy outages and the loss of resiliency that could result from the shuttering of traditional baseload capacity including America's remaining 99 nuclear energy units that today provide 24/7 clean electricity to 20 percent of the grid.

We are encouraged that FERC consistent with its mission is moving with expediency to fully consider, and, we hope, to tangibly act on the Grid Reliability and Resilience Pricing measure responsive to the Secretary's request pursuant to section 403 of the Department of Energy Organization Act as a first step. We likewise encourage the FERC to move independently of the Secretary's initiative under its own authority to promulgate common sense market reforms to ensure diversity and reliability of supply; boost resiliency against outages; and maximize reserve capacity and reliability with the prevention of premature retirement of resources.

## **COMMENTS ON THE PROPOSED RULE**

### **1. Rapid changes in the electricity mix commensurate with complex challenges to the electrical grid are jeopardizing affordable, reliable and resilient electricity and warrant action.**

The FERC is abundantly aware that access to assured and affordable electricity supply is imperative to the health, welfare and quality of life for all Americans as well as critical to the Nation's economic engine, jobs, exports, competitiveness, environmental progress and national security.

Given a variety of economic, market, regulatory and political factors, there have been profound and sweeping changes to the electric grid that arguably have made the U.S. electrical grid less reliable, less resilient and less secure. This is underscored by the findings of the North American Electric Reliability Corporation (NERC), the "FERC-designated Electric Reliability Organization that has the self-described mission "to assure the reliability and security of the bulk power system in North America." In May 2017, the NERC opined that the "significant" and "rapid" transformation" in the electric power system with retirements of fossil and nuclear capacity is "altering the operating characteristics of the bulk power system (BPS)." NERC concluded: "In order to assure continued reliability, these changing characteristics must be well understood and properly managed."

A key NERC finding was that "higher reliance on natural gas exposes electric generation to fuel supply and delivery vulnerabilities, particularly during extreme weather conditions. Maintaining fuel diversity and security provides best assurance for resilience. Premature retirements of fuel secure baseload generating stations reduces resilience to fuel supply disruptions." Similarly, NERC found that the more solar and wind resources are "being used as a 'baseload' resource', the less they can be used to provide flexibility to the system."

**2. Challenges to the grid have been exacerbated by premature fuel-secure baseload closures, a situation that is continuing to compound and spiral.**

The historically unprecedented rash of generation closures has exacerbated the availability of “fuel-secure” baseload capacity. Indeed as noted in the DOE’s “Staff Report to the Secretary on Electricity Markets and Reliability”, respective to nuclear energy alone, 11,833 MW of nuclear generating capacity (nearly 12 percent) has been earmarked for retirement:

- “Between 2002 and 2016, 4,666 MW of nuclear generating capacity was announced for retirement, or approximately 4.7 of the U.S. total”;
- “Eight reactors representing 7,167 MW of nuclear capacity (7.2 of U.S. nuclear capacity and 0.6 percent of total U.S. generating capacity) have announced retirement plans since 2016. This does not include seven reactors that averted early retirement through state action.”

This is underscored by the NERC’s findings and conclusions that:

Several drivers “such as federal, state and provincial policies, low natural gas prices, electricity market forces, and integration of both distributed and utility-scale resources and the resulting “changing resource mix is altering the operating characteristics of the bulk power system (BPS)” and altering the electricity grid through “a rapid and significant transformation” with the loss of nuclear and fossil-free capacity.

Pointing to fuel-secure baseload’s reliability and resiliency attributes, NERC observes that:

“coal-fired and nuclear generation have the added benefit of a high availability rate, low forced outage and secured on-site fuel. Many months of on-site fuel allow these units to be operated in a manner independent of supply chain disruptions.”

Consequently, NERC concludes that “premature retirements of fuel secure baseload generating stations reduces resilience to fuel supply disruption.”

**3. Current wholesale power markets are stifling advanced nuclear development.**

In addition to a deepening crisis of premature nuclear energy plant closures, the current FERC-organized market is effectively throttling advanced nuclear energy generation. Despite a spate of policies in recent years designed to push clean energy deployment and advances in passive safety features, just two new nuclear energy units are under construction in the United States.

In the U.S. Energy Information Administration’s (EIA) Annual Energy Outlook 2017, the EIA is now projecting no net new nuclear reactor capacity additions through 2040 with additional losses of 22.3 GW in nuclear capacity through 2050 as decisions are made with regard to subsequent license renewals beyond 60 years.

This loss of nuclear capacity is despite a roughly 30 percent projected growth in electricity demand during this period. This stagnation in new nuclear reactor deployment is threatening both the advance of American nuclear energy technology as well as undermining America's geo-strategically important global leadership in nuclear energy.

**4. The Polar Vortex and hurricanes have illuminated the importance of baseload and the capacity to meet fuel supply disruptions.**

The fact that the DOE Staff Report concludes, that without fuel-secure plants, the PJM Interconnection loss of generation capacity due to the U.S. "Polar Vortex" in 2014 "could have been catastrophic" -- potentially impacting an estimated 65-million consumers -- speaks for itself.

The need for the action proposed by the Grid Reliability and Resilience Pricing Rule is acutely underscored by an assessment that a potential grid collapse was only obviated by American Electric Power deploying 89 percent of coal units "scheduled for retirement in 2014 to meet demand" and Southern Company reportedly using 75 percent of its coal units "scheduled for closure." Underpinning this baseload generation, according to the DOE, "nuclear generators performed extremely well during the Polar Vortex, with an average capacity factor of 95 percent."

**5. The proposed rule is not an either/or issue for electricity consumers or the FERC with respect to reliable low cost electricity generation.**

Fuel-secure and resilient, reliable baseload, which has been portrayed by some as antithetical to low-cost electricity generation, is not a "Hobson's choice" for the American consumer and/or indeed the FERC. In fact, IHS Markit [sic], a NASDAQ-listed worldwide expert in information, analytics and solutions for "85 percent of the Fortune Global 500 and the world's leading financial institutions," has concluded "that preservation of generation diversity provided by fuel-secure resources benefits consumers dramatically:

"The current diversified U.S. electric supply portfolio lowers the electricity production by about \$114 billion per year and lowers the average retail price of electricity by 27%" compared with a 'less efficiency diversity case' involving no meaningful contributions from coal or nuclear resources."

**6. The DOE Staff Report has further substantiated the challenges to the grid and added clarity to the need to address resiliency.**

As detailed in the Federal Register notice on the Grid Resiliency Pricing Rule on October 10, 2017, the DOE Staff Report has found that "premature retirements of fuel-secured resources impose serious risks" including erosion of long-term reliability and resiliency; continued closure of traditional baseload power plants; and "increased risks" for states and regions that are accepting the status quo "that could affect the future reliability and resilience of electricity delivery for consumers in their region."

The DOE Staff Report finds that hydropower, nuclear, coal and natural gas plants provide “essential reliability services” and “fuel assurance critical to system resilience.” At the same time, the report recognizes that “nuclear and coal plants typically have advantages associated with onsite fuel storage” calling for measures to study and reform grid reliability and resilience, actions that it calls “urgent” along with “market means to value or the regulatory means to provide them.”

**7. Proactive and urgent action is required by the FERC and Organized Wholesale Markets to adequately price the resiliency attributes of fuel-secure power.**

Leading indicators of less reliable and less resilient electricity generation along with an historically unprecedented wave of premature baseload fuel-secure plant retirements coupled with zero projected additions of new nuclear capacity -- and the necessity of unilateral state action to avoid the shutdown of seven reactors -- are proof positive that the regulated markets are not appropriately valuing and incentivizing baseload reliability and resiliency.

The Secretary’s proposed Grid Reliability and Resilience Pricing Rule respective to eligible resources having a 90-day fuel supply is a logical first step. It is consistent with recent FERC consideration into options for the regulated wholesale power market to better value baseload power and to provide just and reasonable rates for wholesale electricity sales. The Pricing Rule measure also moves the ball forward tangibly on a compendium of information recognizing that reliability and resiliency market attributes have not been fully factored and valued. It is our hope that the FERC will take final, timely action to issue the proposed rule as requested by the Secretary or alternatively “as an interim final rule.”

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**About USNIC**

*The United States Nuclear Infrastructure Council (USNIC) is the leading U.S. business consortium advocate for new nuclear and promotion of the American supply chain globally. Composed of nearly 100 companies USNIC represents the "Who's Who" of the nuclear supply chain community, including key utility movers, technology developers, construction engineers, manufacturers and service providers. USNIC encompasses eight working groups and select task forces including a Manufacturing & Supply Chain Working Group. For more information visit [www.usnic.org](http://www.usnic.org).*