UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Grid Reliability and Resilience Pricing : RM 18-1-000

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COMMENTS OF JOINT CONSUMER ADVOCATES
OF THE PJM REGION

The comments that follow are submitted by a group of state-authorized consumer advocate offices within the PJM Reliability Transmission Organization (RTO) region. All of the offices have been created pursuant to statute in their respective states and are charged with representing the interests of end use customers in both state and federal utility regulatory and policy proceedings. Collectively, the group refers to themselves as Joint Consumer Advocates (JCA) for purposes of this filing. The JCA consist of: the Pennsylvania Office of Consumer Advocate, the New Jersey Division of Rate Counsel, the Maryland Office of People’s Counsel, the Delaware Division of the Public Advocate, Attorney General of the Commonwealth of Kentucky, District of Columbia Office of the People’s Counsel and Illinois Citizens Utility Board.

I. INTRODUCTION

In states and regions where wholesale electricity markets are in place, the JCA support market-based solutions to the concerns identified in the Grid Resiliency Pricing Rule (NOPR or proposed rule).\(^1\) PJM and other Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs) maintain a generation and transmission grid that generally is diversified, reliable, and resilient. The question raised by the Grid Resiliency Pricing Rule is

\(^1\) Grid Resiliency Pricing Rule, 82 FR 46940 (October 10, 2017). The JCA’s responses to the questions posed by the Commission, follow the JCA’s comments in this document.
whether existing wholesale markets can adequately sustain a resilient and reliable generation mix into the future. The JCA submit that PJM and the other RTOs/ISOs, through utilization of Commission-required stakeholder processes, will be able to meet these challenges utilizing their market-based systems that have been developed over the years.

Of critical importance to JCA and the consumers we represent, wholesale markets created and administered by the RTOs have generally had positive impacts on wholesale energy prices in an ever-changing marketplace. The expansion of shale gas development, for example, has both reduced and stabilized the wholesale price of gas, which has now assumed a larger role in serving the generation needs of the PJM region. Those cost reductions have been priced into wholesale markets in PJM and in other RTOs, which has generally worked to the benefit of consumers. The RTOs have also integrated a growing share of renewable energy generation into their systems. In addition, advancements in load response technologies and the expansion of energy efficiency programs in states participating in PJM and other wholesale markets, together with the participation of load response and energy efficiency in RTO wholesale markets, have impacted demand and generally benefited consumers through lower prices. The JCA submit that PJM and other RTOs’ ability to meet these and other challenges through their robust internal and external (stakeholder) processes in a manner that brings the benefits of wholesale competition to consumers is critical to engendering consumer confidence in market outcomes.

Implementing a hybrid cost-based/market-based RTO system, as appears to be contemplated by the NOPR, will create substantial problems for RTO wholesale markets and reduce the benefits customers will realize from the development of these markets. In testimony before the House Committee on Energy & Commerce, Subcommittee on Energy, PJM’s Independent Market Monitor (IMM) explained that developing a cost-of-service model for
some, but not all, generating units would create a “quasi-market” paradigm.”² The use of a quasi-market paradigm, the PJM IMM testified, would fundamentally change market outcomes and reduce efficiencies. The JCA are concerned that, under the Grid Resiliency Pricing Rule, markets will be disrupted in ways that bring long-lasting harm, and added costs, to consumers.

The JCA submit that customers in regions with wholesale markets have benefitted from the efficiencies and competitive structures now in place, and have fared better than they would have had a federally-imposed cost of service approach been followed. Many of these states have determined that competition is more effective at controlling the cost of generation. The introduction of competitive forces in the market for wholesale power and the transfer of risk for uneconomic decisions related to generation development away from ratepayers and onto generation owners has benefits for customers. Even if there were a way for the cost of service and the market approaches to coexist at the wholesale level, such a process would likely mean higher electricity prices for end use customers, as the cost and risk would now be shifted back to customers (for eligible plants) and customers would be responsible for “ensuring” recovery of fully allocated costs and a fair return on equity even if the plant were uneconomic.

Concerned as the JCA are about the potential cost (to consumers) of the proposed rule and its deviation from the well-functioning market paradigm, cost is not our sole focus. The consumers we represent depend on having a stable, reliable and resilient supply of electricity to carry on their daily lives. The JCA recognize that such a system requires significant investment and expense and our experience informs us that consumers are willing to pay reasonable costs to achieve a reliable and resilient product. Nevertheless, the JCA believe that the reliability and resiliency situation within the territories of RTOs/ISOs with markets for electrical capacity is not

as dire as the NOPR asserts, whether in terms of the actual condition of the Bulk Electric System (BES) or the unprecedented speed with which the rule is proposed to be put into effect. Put differently, we do not believe that there is evidence to support the NOPR’s premise that there is a significant problem requiring urgent attention. Even if a problem develops, the solution proposed by the NOPR is not the proper one.

II. THE NOPR DOES NOT IDENTIFY A PROBLEM THAT NEEDS TO BE ADDRESSED IMMEDIATELY

A. The DOE Has Not Found That There is an Immediate Problem

The purported urgent circumstances giving rise to the proposed rule run counter to statements made in the DOE’s own “Staff Report to the Secretary on Electricity Markets and Reliability,” (Staff Report) issued in August of this year. In its discussion of BES resilience, the Staff Report states:

[Bulk Power System] reliability is adequate today despite the retirement of 11 percent of the generating capacity available in 2002, as significant additions from natural gas, wind, and solar have come online since then. Overall, at the end of 2016, the system had more dispatchable capacity capable of operating at high [sic] utilization rates than it did in 2002.

Staff Report at 63 (footnotes omitted). Thus, the DOE itself does not find that there is an urgent reliability problem.

B. PJM and Other RTOs Have Secured Capacity Above Targeted Reserve Margins

With regard to resource adequacy, the Staff Report also discusses what it terms “planning reserve margins” and notes that, according to NERC, all regions project more than sufficient planning reserve margins. The Report states:

NERC and its regional reliability coordinators conduct ongoing analyses to assess resource adequacy as system conditions change over time. Figure 4.2 shows that planning reserve margins exceed their respective regional targets despite the loss of traditional baseload capacity since 2002.
This excess of planning reserve margins over targeted reserve margins has certainly been the case in the PJM region in which some of the JCA’s consumers reside. PJM’s capacity market has consistently secured resources in excess of PJM’s targeted reserve margins. For the current “delivery year” and for each of the delivery years in the future for which PJM has secured resources, PJM has set the target reserve margin at either 16.6% or 16.7%. This compares with the reserve margin resulting from the resources cleared in the annual capacity auctions of: 19.7% for 2017/18; 19.8% for 2018/19; 22.4% for 2019/2020; and 23.3% for 2020/21. Thus, per DOE’s own Staff Report, the current rules at PJM generate sufficient reserves to ensure reliability.

C. PJM’s Fuel Supply is Already Diverse

In the PJM region, generation is sourced from a dynamic and diverse array of assets and advanced demand response measures. A snapshot view of PJM’s operating statistics reveals such diversity of supply and fuel mix. At 9:00 a.m. on October 16, 2017, PJM’s load was 86,358 MW. Of that total, 29,935 MW was Nuclear, 26,628 MW was Coal, 24,675 MW was Gas, and 4,037 MW were renewables. While the regional mix of resources utilized at different times throughout the year changes in response to weather conditions and other demands on the system, the mix of generation is robust and diverse. In fact, PJM’s resource mix has become more diverse over time. In 2005, coal and nuclear resources generated 91 percent of the


electricity on the PJM system. By contrast, PJM’s installed capacity at the end of 2016 consisted of 33 percent coal, 36 percent natural gas, 19 percent nuclear, and 5 percent renewables (including hydro).

The results of PJM’s Capacity auctions completed through PJM planning year 2020/2021 also demonstrate generation supply diversity. For the 2020/2021 planning year, PJM has cleared 165,507 MW, of which 40% are coal and nuclear units that would potentially be subject to the Grid Resiliency Pricing Rule. Although regional differences result in each RTO/ISO having somewhat different approaches to particular market designs and operations, other regions also have adequate reserve margins and a diversity of resources.

Thus the current system not only ensures sufficient reserves, it attracts a diverse fuel supply. As recently as September 14, 2017, Mr. Gerry Cauley, NERC’s CEO, appeared before the U.S. House of Representatives Subcommittee on Energy and testified as follows:

The electricity sector is undergoing significant change that is unprecedented for both its transformational nature and rapid pace. Such extraordinary change presents new challenges and opportunities for reliability. Dramatic advances in technology, customer preferences, public policy, and market forces are altering the generation resource mix and challenging the conventional understanding of baseload power, traditionally provided by large generating units with low maintenance and forced outage rates. These changes also are pressing regulatory policy, sometimes blurring the lines between federal and state jurisdiction. …Security is yet another major challenge as the threat landscape becomes ever more complicated with the rise of malicious actors seeking to attack critical infrastructure through cyber warfare. With appropriate insight, careful

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planning, and support, I am confident the electricity sector will continue to
navigate these changes in a manner that results in enhanced reliability and
resilience. Even with all the changes underway, the BPS remains highly reliable
and resilient, showing improved reliable performance year over year. This record
demonstrates the strong commitment to reliability by industry and all
stakeholders, and the effectiveness of the model adopted by this committee in the

Testimony of Gerry W. Cauley before the Subcommittee on Energy, House Committee on
Energy and Commerce, U.S. House of Representatives at 1 (footnotes omitted) (emphasis
added). 9

D. PJM Has a “Reliability Must Run” Tariff, But Only One Generating Unit is
Operating Under It

Even if a shortage of capacity were to occur, the PJM tariff contains provisions that
would account for it by allowing continued operation of generating units that have been proposed
for deactivation if PJM determines that their deactivation would result in reliability concerns for
the PJM system. 10 Typically, these units are called on to continue operations until upgrades
needed to the transmission system to alleviate the reliability concerns are completed. In return
for continuing to operate beyond their planned retirement date, such units, which are commonly
referred to as “reliability must run” (RMR) units, are entitled to be compensated under a Cost of
Service Recovery Rate for the remaining period that their operation is needed. In effect, the
RMR units receive the same cost recovery treatment as that being proposed for units that would
qualify as “grid reliability and resiliency resources” under the proposed rule, but for a much
more limited time period and based on a finding by PJM that the specific unit(s) are needed for
reliability.

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10 PJM Open Access Transmission Tariff, §§ 113-122.
Even more telling is that despite the fact that in PJM capacity delivery years 2015/16 through 2017/18 there have been 21,184.7 MW of capacity deratings or retirements, only one generating station is currently operating under RMR rules. The JCA submit that this belies the notion that generating plant retirements are creating significant BES reliability problems. The existence of RMR provisions in RTO/ISO tariffs demonstrates that the solution proposed in the NOPR is unnecessary.

E. Issues Surrounding Resiliency Are a Work In Progress

The JCA also observe that the NOPR appears to consider the concept of resiliency a settled matter. While NERC has cited a definition of the term resiliency from the National Infrastructure Advisory Council, the JCA submit that the full scope and parameters of resiliency, as applied to the BES, remain a work in progress. For example, in a November 2016 NERC report titled “ERO Reliability Risk Priorities,” NERC states:

As the character and reliability behavior of the BPS evolves, a wide range of reliability or resilience tools should be identified to guide industry, regulators, and the ERO in effectively managing these risks. The industry must improve forward assessments of reliability and identify resilience activities that anticipate changes.

ERO Reliability Risk Priorities at 6. In addition, in PJM’s March 30 Report on its evolving resource mix and system reliability, PJM notes as follows:


13 The National Infrastructure Advisory Council defines resilience this way: “Infrastructure resilience is the ability to reduce the magnitude and/or duration of disruptive events. The effectiveness of a resilient infrastructure or enterprise depends upon its ability to anticipate, absorb, adapt to, and/or rapidly recover from a potentially disruptive event.” See, Testimony of Gerry W. Cauley, President and CEO of NERC before the U.S. House Subcommittee on Energy, September 14, 2017, FN1. Available at: http://www.nerc.com/news/Documents/HEC9-14-17%20Cauley%20Testimony%20Final.pdf
This paper also presents additional questions to be investigated with respect to operating and planning for certain components of system resilience. Further work is required to complete the picture of how PJM’s operations, planning and markets should continue to evolve to address these other issues. PJM looks forward to engaging with members, regulators and other stakeholders on these important issues going forward.

PJM March 30 Report at 2.

The contours of resilience within the BES are still being worked out and objectives and solutions that may appear obvious today may not withstand the further study and analysis that must be done. Further, resilience encompasses the entirety of the BES, generation and transmission alike.

In view of all these facts and observations, the JCA submit that the NOPR has not identified a problem requiring urgent attention. Further, any solutions aimed at addressing system resiliency are premature.

III. IF THERE IS A PROBLEM TO BE ADDRESSED, IS THE PROPOSED RULE THE RIGHT SOLUTION?

Though the JCA submit that there is no crisis, it is fair to ask, if there were, is the solution proposed by the NOPR the proper one? The JCA, for the reasons set forth below, maintain that it is not. The NOPR proposes to value and compensate generators that maintain a 90-day fuel supply onsite for fuel assurance. It identifies coal and nuclear plants as being “fuel secure” and expresses concern that the accelerated pace of retirement of coal, and to a lesser extent nuclear, plants threatens the reliability and resiliency of the BES. Because coal and nuclear plants typically stockpile fuel supply well in advance, they would be the principal beneficiaries of the NOPR’s approach of returning to a non-market, cost of service method of compensation to recognize their fuel secure attributes.

A. Neither the 2014 Polar Vortex Nor Other Severe Weather Events Justify the Proposed Rule
The NOPR cited the Polar Vortex, which occurred from January 6-8, 2014 as a reason for its proposed rule. The Polar Vortex was a period of extreme cold weather. As noted in the NOPR, the Polar Vortex struck particularly hard in the PJM region. On January 7, PJM hit a new wintertime peak demand record. However, during the peak demand hour, 22% of PJM’s generation capacity (40,200 MW) was out of service. Of that total, 15,100 MW, or 37.6% were coal and nuclear capacity, with coal representing the bulk of that amount. In its after-the-fact analysis of operational events during the Polar Vortex, PJM noted that almost half of the outages were attributable to equipment failure:

All conventional forms of generation, including natural gas, coal and nuclear plants, were challenged by the extreme conditions. Generators are required to submit outage data after the outage has occurred. Figure 16: shows that 42 percent of forced outages were due to equipment failures.


If the reason for a unit’s unavailability is equipment failure, then the availability of on-site fuel supplies is not a panacea for maintaining reliability. Simply put, if the plants cannot operate, they cannot burn fuel. Moreover, while PJM’s Polar Vortex assessment did not specifically identify frozen coal piles as a reason for coal plant outages, this phenomenon has been known to occur in other extreme cold situations.

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14 The Polar Vortex was followed by a second series of winter storms and extreme cold that affected the region from January 17 through January 29. Though PJM continued to face generator availability challenges through this period, the highest level of generator unavailability occurred during the Polar Vortex.


It is not only cold weather that can affect the fuel supply at a coal generating station. In the aftermath of Hurricane Harvey that struck the state of Texas, NRG reported to the Public Utility Commission of Texas that two of the coal-fired units at its W.A. Parish generating station had to be switched over to natural gas because the external coal piles became so saturated with rainwater that coal was unable to be delivered into the units’ silos from the plant’s conveyor system.17 18

Importantly, demand response and renewable energy – two capacity resources that would not benefit from the proposed rule -- played a critical role in maintaining reliability during the Polar Vortex. PJM noted this in its report:

Although operational conditions were tight during the Polar Vortex, some variables exceeded PJM’s expectations in real-time: the availability and response of voluntary demand response, the response of the stakeholders to the public appeal for conservation, and the performance of wind-powered generation.

Demand response, although not required to respond during the winter this year, did respond and assisted in maintaining the reliability of the system. In fact, the total amount of demand response provided was larger than most generating stations…Even though demand resources were not obligated to respond during this period, close to 25 percent of the demand response resources registered in PJM did respond and helped PJM manage the grid on the all-time winter peak day.


With regard to wind energy, PJM noted:

PJM also saw up to 4,000 MW produced by wind power during the peak load periods of January 6-7. Figure 12: shows that wind power produced at a level above the calculated wind capacity, (typically 13 percent of total wind capability). The wind power produced had a positive impact on supply and contributed to PJM’s ability to maintain reliability.


18 The JCA observe that differences in weather-related challenges and reliability and resiliency-related factors among different regions of the country may argue for regional rather than one-size-fits all approaches.

Two non-coal and non-nuclear resources that do not depend on onsite fuel played an essential role in maintaining reliability in PJM during the Polar Vortex. The unavailability of coal and nuclear plants in cases of extreme weather suggests that the NOPR’s reliance on them to serve as a backstop to preserve reliability or resiliency under such conditions is misplaced.

The fact is that electric system reliability and resilience is not a matter that turns solely on generation adequacy or availability. In severe weather events such as the recent spate of hurricanes that have struck the southern U.S., extensive power outages have been the result of damage to the bulk transmission and local distribution systems. Under such conditions, generating plants are largely idle and the amount of on-site fuel storage is immaterial. Indeed, the NOPR does not cite a single significant outage that has been caused by a lack of generation adequacy. Yet, in its attempt to improve the reliability and resiliency of the BES, the NOPR focuses exclusively on generator availability and lacks any discussion of strengthening the transmission systems to better withstand the high winds that accompany severe hurricanes.

**B. The Proposed Rule is Far Too Vague**

Even if one were to look toward fuel availability to improve the reliability and resiliency of the BES, the NOPR’s 90-day fuel supply requirement is problematic. First, it offers no detail as to the exact quantity of fuel that would be needed to meet the requirement. Would it be the quantity of fuel needed to keep the plant operating on a 24/7 basis over the 90-day period? Alternatively, would it be a quantity reflecting the average of a plant’s fuel consumption over some previous 90-day period? If so, would that 90-day period be measured over peak months or would it include shoulder months as well? The NOPR simply provides no information that can be used to answer such questions.
Second, the 90-day requirement appears to be both excessive and arbitrary when one considers that events that challenge the reliability of generating units, such as the Polar Vortex, are of much shorter duration. As noted previously, the Polar Vortex occurred over three days. In addition, to the extent coal plants do not currently maintain a 90-day supply of fuel on-site based on their own analysis of fuel optimization, the NOPR will cause them to incur greater expense (to be paid ultimately by consumers) than what their business judgment tells them are necessary.

Because the 90-day fuel supply requirement serves as a key trigger for eligibility to receive generous cost-of-service compensation under the NOPR, the JCA are concerned that the rule might induce an “open floodgates” situation. While ostensibly intended to secure greater compensation for coal and nuclear plants, units using other types of fuel may seek to qualify for the favorable rate treatment. Units that are dual-fueled by natural gas and oil may take steps to increase on-site oil storage to the 90-day threshold. Or units that are natural gas only units, seeing an opportunity for greater returns, may develop on-site storage of liquefied natural gas as a means of availing themselves of the proposed rule. It could even be the case that hydroelectric facilities with a 90-day supply of water behind the dam could qualify for the NOPR’s cost of service treatment. Regardless, the more types of generating units that seek to avail themselves of the NOPR’s promise of full cost recovery and a fair return on invested capital, the greater the expense this proposal will impose on the consumers the JCA represent and the farther we will move from using competitive forces to control the risks of generation.

C. PJM is Already Taking Steps to Address the Issues the Proposed Rule Purports To Address

The NOPR’s emphasis on cost of service represents a radical departure from the “market-oriented” regime that has prevailed in the wholesale electricity industry for the last two decades. This drastic approach is unnecessary in light of the steps PJM took in the aftermath of the Polar
Vortex to improve generator availability. PJM’s post-Polar Vortex review of generator performance indicated that changes were needed in performance requirements, incentives, and charges for non-performance. To accomplish this, PJM implemented its Capacity Performance initiative, which created a new capacity performance product to be procured in PJM’s capacity auctions. PJM has described the new product as follows:

The new capacity product, called Capacity Performance, incents generators to commit to more stringent performance requirements. This includes the “firming” of fuel supply (through firm gas service contracts, firm service contracts with greater flexibility or the installation of dual-fuel capability), as well as investment in operations and maintenance to shorten minimum run times and increase operational flexibility.

PJM March 30 Report at 35. PJM further states that:

While there has not yet been an operational test of this new product, PJM has seen improved operational flexibility in capacity resources and increased investment by generators to meet the stricter performance requirements. These improvements map to some of the attributes identified in the Generator Reliability Attributes Matrix, such as fuel assurance and flexibility. Through stricter performance requirements, incentives and charges for non-performance, Capacity Performance holds capacity resources accountable to make the necessary investments and operational improvements required to ensure delivery of energy when needed most.

PJM March 30 Report at 35-36.

Notably, PJM’s Capacity Performance initiative was implemented within the context of the PJM capacity market construct using market-oriented principles of penalty and reward. In the face of a 22% outage rate during the peak of the Polar Vortex, PJM faced a very real reliability challenge that it elected to meet with “in market” modifications. It did not resort to an “out of market” solution as does the NOPR.

Similarly, the NOPR itself acknowledges FERC’s inquiry into price formation in wholesale markets. The NOPR concludes that although the Commission has “developed a vast
record of comments, hearings, and technical conferences on price formation matters,” it has not
done enough to address the “crisis at hand.” The NOPR then asserts that:

    Immediate action is necessary to ensure fair compensation in order to stop the
    imminent loss of generators with on-site fuel supplies, and thereby preserve the
    benefits of generation diversity and avoid the severe consequences that additional
    shut-downs would have on the electric grid.

NOPR at 46945. The immediate action referred to, of course, is the NOPR’s proposal to provide
cost of service ratemaking treatment to eligible generation resources to ensure the adequacy of
their revenues. However, the NOPR’s call for immediate action contrasts sharply with the
paper issued by PJM this summer titled “Energy Price Formation and Valuing Flexibility.”
That paper recommends at least two topics for further discussion regarding pricing reform in the
PJM energy market to address potential concerns that the NOPR seeks to solve through out-of-
market solutions. First, it discusses the matter of allowing all resources to set price (LMP) in a
particular interval. PJM explains as follows:

    If the system needs a unit’s output to maintain power balance while managing
    transmission constraints, that need should be reflected transparently through
    energy prices. PJM believes the range of resources eligible to set price should be
    expanded to include all units whose output is needed to serve load or control
    transmission constraints in a given interval. Presently, only additional megawatts
    above a unit’s economic minimum are considered “needed” for economic dispatch
    and therefore eligible to set price.

    This expansion of price-setting eligibility would include:
    • Inflexible units needed to meet demand for five minute increments
    • Evaluations of requirements for unit parameters such as ramp rates, economic minimums and emergency minimums

    Allowing all units to set price would create a function in which price more
    consistently increases as load increases…This price-setting expansion would
    reduce uplift and lead to better incentives and more predictable, rational price
    signals.


19 Available at:  http://www.pjm.com/-/media/library/reports-notices/special-reports/20170615-energy-market-
price-formation.ashx?la=en
Notably, the “inflexible” units that might become eligible to set prices would include the nuclear and coal plants that the NOPR proposes to support.

Second, PJM discusses creating a load-following product that would recognize and compensate flexible resources that are required to ramp their output up or down under certain system conditions. Again, PJM explains:

To maintain generation and load balance when inflexible units are dispatched, the proposed pricing eligibility reform should be accompanied by development of a load-following product, which would compensate flexible resources forced to ramp up or down uneconomically to meet demand when a larger, inflexible resource must operate at a minimum output level.

Flexibility is not explicitly valued in PJM today. Reforming pricing so that inflexibility does not negatively impact LMP would allow PJM to monetize flexibility. The load-following product thus would provide enhanced opportunities for flexible resources, including new technologies, such as energy storage resources, to receive compensation for the value of their flexibility without displacing the need for the dispatch of larger, more inflexible units in the circumstances outlined above.


While the JCA do not necessarily agree with the particular reforms identified by PJM, it is notable that, as with Capacity Performance, the reforms represent modifications to existing market structures that seek to address the very problem the NOPR claims exist. Moreover, they are modest in comparison to the NOPR’s cost of service proposal which would radically reform -- if not upend -- the paradigm under which wholesale electricity transmission and sales are regulated. Further, these suggestions reflect the expertise of an entity whose sole function is to ensure the proper and reliable functioning of the BES within its region. The JCA submit that if such an entity can propose less radical reforms to address any legitimate reliability or resiliency issues raised in the NOPR, such approaches should be considered in lieu of more disruptive and expensive cost of service approaches. These proposals are also notable because, unlike the
NOPR, they were put forth to begin a process involving discussions by all interested stakeholders and over a time period that is sufficient to adequately review the important issues at hand.

This leads to another aspect of the NOPR that the JCA find troubling: the NOPR’s willingness to supplant the established policy, regulatory and operational framework of the wholesale electricity industry in a timeframe that does not allow for careful and thorough discussion. That framework has been developed over the past twenty-five years, beginning with the passage of the Energy Policy Act of 1992, supplemented by the Energy Policy Act of 2005 and implemented through numerous landmark and other Commission orders. That framework includes the Commission, NERC and the RTO/ISOs, all of whom, exercising the respective roles assigned them by Congress and the Commission, have delivered for consumers a BES that has kept costs in check, fostered and assimilated innovation and yielded outstanding reliability and resiliency. That framework embraced a regulatory system based on market principles to produce just and reasonable rates for consumers, and the JCA submit that it has. It is dismaying that the NOPR so readily embraces a return to a regulatory model that placed all risk on consumers to underwrite any uneconomic decisions on the part of asset owners.

None of this is to suggest that there are not challenges facing the stakeholders in the current framework. Indeed, there are. But NERC, the Commission and the RTOs/ISOs are aware of them, and are addressing them. The DOE Staff Report explicitly recognizes this:

NERC believes [Bulk Power System] reliability is adequate as measured by various metrics, but is undertaking various initiatives to address potential reliability challenges posed by the changing generation mix. For example, NERC created an Essential Reliability Services Working Group to draw attention to the need to maintain these services as the resource mix evolves. NERC also created the Integration of Variable Generation Task Force and the Distributed Energy Resources Task Force to address the reliability implications of increasing levels of distributed generation.

Staff Report at 64.
In addition, the NOPR itself cites the many initiatives undertaken by the Commission since the original technical conference on BES reliability held in July of 2013. As recently as March of this year, PJM issued its study titled, “PJM’s Evolving Resource Mix and System Reliability.” RTOs and ISOs are the centerpieces of the current regulatory and operational framework and their core mission is to ensure the reliability and resiliency of the BES while meeting the needs of customers at just and reasonable rates. They should be allowed to address the issues at hand, utilizing their estimable expertise. Their work should not be preempted by the abrupt and radical solution proposed by the NOPR.

**D. The NOPR’s Proposal Would Stifle Innovation**

The current market-based system is also the most likely to spur innovation, leading to greater resiliency and reliability without requiring the overlay of unnecessary and expensive command and control cost of service approaches. The Staff Report notes that energy storage will play a critical role in the future as increased levels of variable resources will be deployed on the grid leading to a need for additional balancing of supply and demand in real time. The Report also notes that DOE has been investing in energy storage technology development for two decades and that significant private investment has begun to commercialize and deploy grid-level storage technologies. Further, as recently as October 12, in testimony before the U.S. House Subcommittee on Energy, Energy Secretary Perry highlighted the innovation spurred by DOE-funded research and development work, including work done at DOE’s national laboratories and within the Department’s program offices. Among other things, the Secretary noted that DOE expects to spend $636 million in FY 2018 to support research at DOE national laboratories to drive

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20 Staff Report at 73.
energy innovations in renewable energy, next-generation transportation, and energy efficiency.\textsuperscript{21} The current market paradigm offers the greatest likelihood that the innovations that emerge from DOE’s research will be commercialized and deployed. Turning that paradigm backward, burdening it or possibly even overturning it with an overlay of command and control cost of service ratemaking for certain forms of generation will inhibit the implementation of new technologies that the markets have fostered.

The threat to markets is a threat to the resources and technologies that depend on market forces to allow ease of entry. The longer uneconomic resources are propped up by cost guarantees, the longer it will take for new, efficient technologies to come online. As the PJM Market Monitor has explained:

\begin{quote}
A decision to subsidize uneconomic units that are a significant source of energy and capacity has direct and significant impacts on other sources of energy: the opportunity costs of subsidies are substantial. Such subsidies suppress energy and capacity market prices and therefore suppress incentives for investments in new, higher efficiency thermal plants but also suppress investment incentives for innovation in the next generation of energy supply technologies and energy efficiency technologies. These impacts are large and long lasting but difficult to quantify precisely.
\end{quote}

\textbf{PJM IMM Testimony} at 3-4. Technological innovation and improved efficiencies have already taken place in the markets. For example, in response to PJM market rules, forced outage rates have improved substantially resulting in greater power plant output. This has been particularly true in the nuclear industry, where forced outage rate improvements have brought substantial increases in energy output.\textsuperscript{22}


\textsuperscript{22} See, e.g., \url{https://www.statista.com/statistics/187283/forced-outage-rate-at-us-nuclear-reactors-since-2000/}
When all is considered, the JCA agree with the sentiments expressed by PJM’s Craig Glazer, Vice President of Federal Government Policy before the U.S. House Subcommittee on Energy this past July:

Prior to EPACT 1992 and much of the restructuring of the industry at the retail level, regulators at the state and federal level would be called upon to pick winners and losers—either adding to rate base or disallowing the costs of particular generators one by one after long and contentious hearings. Inevitably, the regulators sometimes got it wrong and saddled the investor or the consumer with billions of dollars in uneconomic costs.

There may be a temptation to selectively go back to that model to either “promote” or “save” a particular generating unit or type of generating unit in the name of ‘reliability’ or ‘diversity’. Both reliability and diversity has and can continue to be maintained through the market itself. In fact, PJM’s generation mix is far more diverse today than it has ever been. We are concerned about potential retirements of additional coal and nuclear resources. The relevant question is how best to respond. For policymakers to simply try to ‘outguess’ the market or supplant it with their particular policy choice is simply a recipe for building an unsustainable market outcome that no investor would seriously consider and for which no consumer would ultimately benefit. As a result, we urge holding our “feet to the fire” to devise market-based solutions to these challenges...while resisting the temptation to step in to “choose” a particular generator class or type of generator for special treatment.


IV. CONCLUSION

For all of the reasons expressed herein, the JCA urge that the proposed rule be rejected. It is a solution in search of a problem and it is unnecessary. Its adoption would pose serious financial harm to consumers without producing a Bulk Electric System whose reliability or resiliency is superior to what the current market-based regulatory paradigm would yield. The Commission should decline the invitation to return to an expensive and inefficient model from

the past. Looking forward, NERC, the Commission and the RTOs (in conjunction with their stakeholders) should continue to explore the nature of system resiliency and continue their ongoing efforts at price formation designed to properly value the aspects of service that are essential to system reliability and resiliency.

Respectfully submitted,

JOINT CONSUMER ADVOCATES OF THE PJM REGION

/s/ filed electronically
David T. Evrard
Assistant Consumer Advocate
Pennsylvania Office of Consumer Advocate
555 Walnut Street, 5th Floor
Harrisburg, PA 17101-1923
(717) 783-5048
devrard@paoca.org

/s/ filed electronically
Stefanie A. Brand, Director
New Jersey Division of Rate Counsel
Brian O. Lipman, Esq.
Litigation Manager
Felicia Thomas-Friel, Esq.
Deputy Rate Counsel
Henry M. Ogden, Esq.
Assistant Deputy Rate Counsel
140 East Front Street, 4th Floor
P.O. Box 003
Trenton, New Jersey 08625
(609) 984-1460
Email: sbrand@rpa.state.nj.us
blipman@rpa.state.nj.us
fthomas@rpa.state.nj.us
hogden@rpa.state.nj.us

/s/ Regina A. Iorii
Regina A. Iorii
Deputy Attorney General
Division of Public Advocate
820 N. French Street, 6th Floor
Wilmington, DE 19801
Phone: (302) 577-5077
Email: regina.iorii@state.de.us

In the Capacity of Counsel to the Division of the Public Advocate for the State of Delaware Only

/s/ filed electronically
Paula M. Carmody
People's Counsel
William F. Fields
Senior Assistant People's Counsel
Maryland Office of People's Counsel
6 St. Paul Street, Suite 2102
Baltimore, MD 21202
410-767-8150
Email: paula.carmody@maryland.gov
william.fields@maryland.gov
Need for Reform

1. What is resilience, how is it measured, and how is it different from reliability? What levels of resilience and reliability are appropriate? How are reliability and resilience valued, or not valued, inside RTOs/ISOs? Do RTO/ISO energy and/or capacity markets properly value reliability and resilience? What resources can address reliability and resilience, and in what ways?

   JCA Response: Resilience is the ability to respond to extreme events such as storms. It is generally impacted more by improvements to the transmission and distribution (T&D) systems than a question of generation resource adequacy. Reliability refers to daily efforts to maintain safe, adequate and proper service. Reliability and resilience are valued in PJM through Capacity Performance and black start programs.

2. The proposed rule references the events of the 2014 Polar Vortex, citing the event as an example of the need for the proposed reform. Do commenters agree? Were the changes both operationally and to the RTO/ISO markets in response to these events effective in addressing issues identified during the 2014 Polar Vortex?

   JCA Response: As noted in our comments, the JCA do not agree that the Polar Vortex was an example of the need for reform proposed by the NOPR. Coal and nuclear units represented nearly 38% of the outages in PJM during that event. Regarding the effectiveness of PJM’s response - the Capacity Performance initiative - there has been no equivalent weather-related event to test whether the changes will improve generator performance, but we note that PJM has said: “While there has not yet been an operational test of this new product, PJM has seen improved operational
flexibility in capacity resources and increased investment by generators to meet the stricter performance requirements. These improvements map to some of the attributes identified in the Generator Reliability Attributes Matrix, such as fuel assurance and flexibility.” Significantly, as has been noted by PJM, demand response and wind were most helpful in allowing PJM to maintain service during the Polar Vortex and neither of these resources will benefit from the proposed rule.

3. The proposed rule also references the impacts of other extreme weather events, specifically hurricanes Irma, Harvey, Maria, and superstorm Sandy. Do commenters agree with the proposed rule’s characterization of these events? For extreme events like hurricanes, earthquakes, terrorist attacks, or geomagnetic disturbances, what impact would the proposed rule have on the time required for system restoration, particularly if there is associated severe damage to the transmission or distribution system?

JCA Response: As noted in our comments, the heavy rains associated with hurricanes, such as Hurricane Harvey, can present challenges for coal-fired units. Indeed, significant amounts of coal were unavailable after Hurricane Harvey due to flooding and saturation of the coal piles. Even if fuel is onsite, it does not aid resilience if it is unusable. Where severe weather results in extensive damage to the T&D system, having generation at the ready to energize the lines once repairs have been made may have a small impact on restoration time, but system restoration times will be driven by the T&D repairs.

4. The proposed rule references the retirement of coal and nuclear resources and a concern from Congress about the potential further loss of valuable generation resources as a basis for action. What impact has the retirement of these resources had on reliability and resilience in RTOs/ISOs to date? What impact on reliability and resilience in RTOs/ISOs can be anticipated under current market constructs?

JCA Response: The JCA do not believe that the retirement of coal and nuclear resources in PJM has resulted in significant reliability or resiliency issues and do not believe that it has produced a reliability or resiliency crisis. As nuclear and coal units have retired in PJM, the system continues to meet and exceed capacity needs. The JCA submit that the current market constructs offer the best hope of preserving and improving reliability and resiliency in a least cost manner.

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5. Is fuel diversity within a region or market itself important for resilience? If so, has the changing resource mix had a measurable impact on fuel diversity, or on resilience and reliability?

**JCA Response:** Fuel diversity is valuable, but fuel diversity is not in danger in the near term. In the recent PJM auction for the 2020/2021 planning year, 40% of the MWs cleared were from coal and nuclear plants.

**Eligibility**

*General Eligibility Questions*

1. In determining eligibility for compensation under the proposed rule, should there be a demonstration of a specific need for particular services? What should be the appropriate triggering and termination provisions for compensation under the proposed rule?

**JCA Response:** Assuming for the sake of argument that the proposed rule were needed, the JCA would favor limiting its application to particular services, e.g., what NERC identifies as Essential Reliability Services, and only to those facilities that the RTO/ISO determines are needed for reliability. Compensation should not be permitted without a rate case to determine the cost of service. The JCA believe that a conservative approach should be taken to minimize the time during which extra compensation provisions would be in effect.

2. As the proposed rule focuses on preventing premature retirements, should a final rule be limited to existing units or should new resources also be eligible for cost-recovery? Should it also include repowering of previously retired units? Alternatively, should there be a minimum number of MW or a maximum number of MW for resources receiving cost-of-service payments for resilience services? If so, how should RTOs/ISOs determine this MW amount? Should this also include locational and seasonal requirements for eligible resources?

**JCA Response:** Inasmuch as the JCA oppose promulgation of the proposed rule, the JCA would wish to see its application implemented in as limited a fashion as possible – to only currently operating units that are needed for reliability. The number of MWs should be limited to the capacity needed for reliability as determined by the RTO/ISO based on anticipated load and capacity otherwise available in the market.
3. Are there other technical characteristics that should be required for an eligible unit besides on-site fuel capability? If so, what are those technical characteristics and what benefits do they provide? What types of resources can meet the proposed eligibility criteria of the proposed rule? What proportion of total current generating capacity does this represent?

JCA Response: As noted in our comments, on-site fuel availability is no guarantee of reliability or resiliency. Resources other than coal and nuclear, such as oil, gas and hydro, may be able to qualify.

4. If technically capable of sustaining output for a sufficient duration (and meeting other relevant requirements), should resources such as hydroelectric, geothermal, dual-fuel with adequate on-site storage, generating units with firm natural gas contracts, or energy storage (each of which might have a demonstrable store of energy to draw upon to sustain an electrical output, if not necessarily fuel) also be eligible? Why or why not? If technical capability is the appropriate criterion for eligibility, what specific technical capability should be required to be eligible?

JCA Response: The JCA do not favor promulgation of the proposed rule. The rule marks a return to cost of service ratemaking that is inconsistent with the market structures established in the RTOs/ISOs. The JCA believe this change is unwarranted and would be costly to consumers. The JCA submit, however, that it could be argued that to exclude the units listed in the question would be discriminatory. Taken to its logical and fair conclusion, the rule results in a return to cost of service ratemaking and a dissolution of the wholesale markets.

5. The proposed rule would require that eligible resources be able to provide essential energy and ancillary reliability services and includes a non-exhaustive list of services. What specific services should a resource be required to provide in order to be eligible?

JCA Response: The JCA submit that the RTO/ISOs should determine what services are needed to ensure reliability and that those needs should determine what services the eligible resources must provide.

6. The proposed rule would limit eligibility to resources that are not subject to cost of service rate regulation by any state of local regulatory authority. How should the Commission and/or RTOs/ISOs determine which resources satisfy this eligibility requirement?
JCA Response: The JCA submit that this should be done in conjunction with the various state utility commissions. This inquiry will need to consider what compensation these units were granted for stranded costs when those states restructured in accordance with applicable state law. The JCA submit that the receipt of compensation for stranded costs raises questions of the appropriate treatment of stranded cost payments in a return to cost of service regulation.

90-day Requirement

1. The proposed rule defines eligible resources as having a 90-day fuel supply. How should the quantity of a given resource’s 90 days of fuel be determined? For example, should each resource be required to have sufficient fuel for 24 hours/day and sustained output at its upper operating limit for the entire 90-day period? Would there be any need for regional differences in this requirement?

JCA Response: The JCA submit that the proposed rule’s lack of clarity on this point is a significant omission that must be resolved if any such rule is to be promulgated. While the JCA has no specific recommendation as to the interpretation of the 90-day fuel supply, we reiterate our view that the availability of fuel is no guarantee of reliability. We also reiterate the point, made in our comments, that extreme weather events such as the Polar Vortex or hurricanes typically have impacts on electric generation units that are shorter than 90 days.

2. Is there a direct correlation between the quantity of on-site fuel and a given level of resilience or reliability? Please provide any pertinent analyses or studies. If there is such a correlation, is 90 days of on-site fuel necessary and sufficient to address outages and adverse events? Or is some other duration more appropriate?

JCA Response: There is no such correlation.

Fuel Supply Requirement

1. The proposed rule requires that resources must be in compliance with all applicable environmental regulations. How should environmental regulations be considered when determining eligibility? For example, if a unit that was capable of keeping 90-days of fuel on-site was subject to emission limits that would
prevent it from running at its upper operating limit for 90 days, should that unit be eligible under this proposed rule?

**JCA Response:** The JCA oppose promulgation of the proposed rule. If, however, the rule were to be adopted, the JCA urge that the 90-day fuel requirement be adapted to accommodate situations such as those described in this question. The potentially large expense of having fuel on hand that could not be used because of environmental restrictions should be avoided.

2. As the proposed rule references the need for resilience due to extreme weather events, including hurricanes, should there be any other eligibility criteria for the resource or fuel supply (e.g., storm hardening)? What considerations should be given to the vulnerability of 90-day fuel supplies to natural or man-made disasters such as extreme cold temperatures, icing, flooding conditions, etc. that may impact the on-site fuel supply?

**JCA Response:** The vulnerability of on-site fuel supplies to such conditions is one of the reasons the JCA do not see value in the proposed rule and oppose its promulgation. The presence of a 90-day fuel supply does not ensure reliability or resiliency. Nevertheless, if the rule were adopted, requirements such as storm hardening should be imposed only if such actions are feasible, practical and cost-justified.

3. Does the vulnerability or non-availability of on-site fuel supplies vary depending upon fuel type, location, region, or other factors?

**JCA Response:** Yes. To JCA’s knowledge, on-site nuclear fuel is not exposed to the elements as are coal piles and the potential for coal piles to freeze or become saturated would certainly be dependent on the climate where the coal plant is located.

**Implementation**

1. How would eligible resources receiving cost of service compensation under the proposed rule be committed and dispatched in the energy market?

**JCA Response:** See response to Question 2 below.

2. How would eligible resources receiving cost based compensation under the proposed rule be considered in the clearing and pricing of centralized capacity markets?
JCA Response: Questions 1 and 2 in this section go to one of the central issues posed by the NOPR: whether there is any way to reconcile a regulatory regime that is part market-based and part cost-of-service based. The JCA submit that a move in this direction would be an ill-advised policy choice. Layering a cost-of-service component on top of a market-based system would introduce significant complexities into the current regulatory regime that are best avoided by retaining a strict market paradigm and not attempting to create a hybrid system of market and cost of service regulation.

3. What is the expected impact of this proposed rule on entry of new generation, reserve margins, retirement of existing resources, and on resource mix over time?

JCA Response: A system that protects generating units that are uneconomic under a market-based regime will hinder the entry of new resources, increase reserve margins, slow the retirement of existing resources, retard innovation and deter evolution to the most economic and reliable resource mix over time.

4. Should there be performance requirements for resources receiving compensation under the proposed rule? If so, what should the performance requirement be, and how should it be measured, or tested? What should be the consequence of not meeting the performance requirement?

JCA Response: Performance standards must be imposed for facilities that are granted guaranteed revenues under the proposed rule. Units receiving cost-of-service treatment should not be eligible for bonuses for meeting performance. They should, however, be exposed to financial penalties for not achieving expected performance standards.

5. Should there be any restrictions on alternating between market-based and cost-based compensation?

JCA Response: A proper response to this question depends on whether the two regulatory paradigms (market vs. cost-of-service) can co-exist or be merged. The JCA submit that this will be difficult, at best, and suspect that if the proposed rule were adopted, generating units would likely be compensated under one paradigm or the other and not a hybrid of the two. In no circumstance, however, should a generating unit be able to choose the higher of cost or market. This would be wholly unfair and unreasonable for consumers. In fact, it would be an affront to the concept of competitive
markets to allow a company to choose to participate in the market when outcomes are good, but step out of the market and choose cost-based compensation when market outcomes are less favorable.

Rates

1. The proposed rule lists compensable costs that should be included in the rate as operating and fuel expenses, costs of capital and debt, and a fair return on equity and investment. Are there other costs that would be appropriate to be included in the rate? Would any of the listed costs be inappropriate for inclusion?

   JCA Response: The JCA oppose the proposed rule’s adoption of a cost-of-service approach to compensation of generating units and therefore oppose recovery of costs in ways other than existing methods of cost recovery under a market paradigm. If a cost-based rate were to be set, there would need to be a rate case to establish that rate, in which all components of the cost of service would be analyzed.

2. Should wholesale market revenues offset any cost of service payments stemming from the proposed rule?

   JCA Response: Again, the JCA question whether the two regulatory regimes can coexist. If that would be possible, however, yes, market revenues should serve as an offset to cost-of-service compensation.

3. How should RTOs/ISOs allocate the cost of the proposed rule to market participants?

   JCA Response: JCA believe a hybrid market/cost-based system is not beneficial or sustainable. Thus, it is unclear how the RTO/ISOs would allocate these costs or whether FERC would have to determine allocations in each case. This is a prime example of the difficulty the proposed rule presents.

4. How would the requirement that eligible resources receive full cost recovery be reconciled with the requirement, as stated in the regulatory text, that resources be dispatched during grid operations?
JCA Response: Dispatch should continue to be based on least cost. If these units are not least cost they should not be dispatched before other, more economic resources.

Other

1. The proposed requirement for submitting a compliance filing is 15 days after the effective date of any Final Rule in this proceeding, with the tariff changes to take effect 15 days after the compliance filings are due. Please comment on the proposed timing, both to develop a mechanism for implementing the required changes and to implement those changes, including whether or not such changes could be developed and implemented within that timeframe.

JCA Response: The JCA does not think it is possible to establish just and reasonable rates for these units in 15 days. Rate cases will be needed to establish these rates and the requirement that rates be just and reasonable cannot constitutionally be dispensed with.

2. Please comment on the proposed rule’s estimated burden of $291,042 per respondent RTO/ISO, to develop and implement new market rules as proposed, including the potential software upgrades required to do so.

JCA Response: This amount is likely to be unrealistic given the need to set rates for each unit.

3. Please describe any alternative approaches that could be taken to accomplish the stated goals of the proposed rule.

JCA Response: As alluded to in our comments, the JCA submit that the current regulatory framework is entirely capable of addressing the concerns expressed in the NOPR and that there are considerable downsides to proceeding in the manner proposed by the NOPR. The JCA note that matters involving price formation to appropriately value generating units’ reliability and resilience characteristics are currently under review in PJM’s stakeholder process.

4. What impact would the proposed rule have on consumers?

JCA Response: As the proposed rule would permit potentially uneconomic plants to remain in operation and allow them to be compensated via a cost-
of-service approach, rather than through market prices, the JCA submit that costs to consumers are likely to increase substantially. Moreover, a return to cost-of-service ratemaking will mean the transfer of risk associated with uneconomic decisions on the part of generators back on to consumers, adding further to the burden of costs they will face. A market approach that eases the entry of economic resources into the market and the departure of uneconomic resources from the market promises the best value for consumers.

5. The Commission may take notice of relevant public information, including information in other Commission proceedings. If a commenter views information in another Commission proceeding as relevant to the proposed rule, please identify that information and explain how it is relevant to the proposed rule. Such information may include a filing previously submitted by the commenter.

JCA Response: The sources the JCA would like the Commission to take notice of are those referred to in their comments.