UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Grid Reliability and Resilience Pricing	**)**	**Docket No. RM18-1-000**

REPLY COMMENTS OF THE INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA

Pursuant to the Notice issued October 2, 2017 by the Federal Energy Regulatory Commission (FERC or the Commission) in response to the Department of Energy (DOE) direction on September 28, 2017, under Section 403 of the Department of Energy Organization Act that FERC consider a notice of proposed rulemaking (NOPR or Proposed Rule),[1] the Interstate Natural Gas Association of America (INGAA) respectfully submits these reply comments.

INGAA is a trade organization that advocates regulatory and legislative positions of importance to the natural gas pipeline industry in North America. INGAA's 26 members represent the majority of the interstate natural gas transmission pipeline companies in the United States. Its United States members are regulated by the Commission pursuant to the Natural Gas Act (NGA), 15 U.S.C. §§ 717-717w. INGAA's members, which operate approximately 200,000 miles of pipelines, serve as an indispensable link between natural gas producers and consumers.

The NOPR is fatally flawed, and should not be the basis for any rule by FERC. Instead, the Commission should direct all regional transmission organizations (RTOs) and independent system operators (ISOs) to examine whether, and if so how, they value reliability and resilience in wholesale electricity markets and report their findings to the Commission within 90 days.

[1] Department of Energy, Notice of Proposed Rulemaking (NOPR), 18 CFR Part 35, Docket No. RM17-3-000, *Grid Resiliency Pricing Rule*.

I. Nothing in the initial comments justifies the NOPR's claim that its rushed timeline for its reliability and resilience rule should be adopted.

INGAA urges the Commission to proceed quickly to examine the extent to which reliability and resilience of the grid can be enhanced. However, moving quickly does not justify an unsound, rushed process like the one suggested in the NOPR.

A. The initial comments do not support the NOPR's assertions regarding current grid conditions.

The NOPR and initial comments by certain of its supporters are based on unfounded assertions about the reliability and resilience exposure for certain parts of the country this winter season—the very near term.[2] Yet nothing in the initial comments of the grid operators or NERC supports those assertions.

For example, the comments of NYISO, PJM, and MISO undercut the NOPR's assertion that this winter season brings such intense risk exposure as to justify the NOPR's rushed process. Despite an acknowledgment that opportunities to enhance reliability and resilience exist, the NYISO declared that it "is not aware of any imminent emergency likely to develop on the wholesale electric system that necessitates drastic and immediate action, particularly in the form proposed in the NOPR."[3] PJM echoes this point, emphasizing that there is "certainly no compelling explanation of why such action is urgently needed to stave off an imminent crisis."[4] MISO, too, rejects the premise that there are imminent reliability concerns arising from the retirement of coal and nuclear generators. It notes that should there be premature retirements of generation resources, "MISO has tools available that will ensure reliability is not jeopardized."[5]

[2] *See* FirstEnergy Initial Comments, p. 4; PSEG Initial Comments, pp. 2, 4; NEI Initial Comments, pp. 7-13; Exelon Initial Comments, p. 5; Murray Energy Initial Comments, pp. 3-7, 13-24.
[3] NYISO Initial Comments, p. 4.
[4] PJM Initial Comments, p. 8.
[5] MISO Initial Comments, p. 12.

In a similar vein, nowhere in NERC's comments can one find an immediate threat to reliability or resilience to the bulk power system warranting the urgent action the NOPR proposes for this winter. Instead, NERC notes that it "has not identified an immediate or near-term emergency related to such [coal and nuclear generation plant] retirements."[6]

These comments support INGAA's position that, while the Commission should move quickly to take advantage of opportunities to enhance the reliability and resilience of the grid as set forth below, the rushed nature of the process requested by the NOPR is unsound and unjustified. The Commission should reject this approach.

B. The Commission should take immediate steps to examine and enhance reliability and resilience in wholesale electricity markets, and any revisions to rules or policies must be market-based and fuel-neutral.

Many initial comments urging FERC to reject the proposed rule due to its fatal flaws nonetheless acknowledged that the Commission could institute rules and policies to incent reliability and resilience of the bulk power system.[7] INGAA agrees that there is an opportunity to build a more reliable and resilient grid and urges the Commission to determine how to value and incent reliable and resilient performance attributes on a market-based, fuel-neutral basis in keeping with its precedent.[8]

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[6] NERC Initial Comments, p. 5.

[7] *See* API Initial Comments at p. 32; AGA Initial Comments, pp. 18-19: "AGA believes that efforts to maintain and improve the reliability should include consideration of market solutions that already exist **as well as new ones that would provide sufficient incentives for gas-fired generators to purchase the pipeline services** or plan to use back-up fuel as needed to accommodate an expected level of reliable operations" (emphasis added). AGA goes on to note "However, reliability is not free. **Services must be aligned with the market incentives for generators to enter into contracts for those services that are determined to be needed to accommodate an expected level of reliable operations.** If needed, the gas industry can then build infrastructure to ensure the reliability of both systems" (emphasis added).

[8] *See e.g., Demand Response Compensation in Organized Wholesale Energy Markets,* Order No. 745, 76 Fed. Reg. 16,658, FERC Stats. & Regs. ¶ 31,322, P 8 (2011). FERC regularly implements the FPA by approving market rules that ensure the lowest-cost set of resources is dispatched. *See e.g., ISO New England, Inc.,* 151 FERC ¶ 61055, P 28 (2015) ("Use of such criteria [to ensure that lowest-cost resources are accepted into the Forward Capacity Market] flows appropriately from the Commission's jurisdiction to ensure just and reasonable rates.") The Commission's use of market mechanisms to ensure just and reasonable rates, so long as these mechanisms are not susceptible to the

The NOPR identifies opportunities to increase reliability and resilience in the wrong way. As one commenter notes, the "NOPR provides no nexus between its claimed concern of resilience and its proposed solution regarding 'fuel-secure' generation."[9] A sound process—built on evidence and data—would find opportunities that have a nexus with ensuring the desired level of reliability and resilience.

INGAA does not seek to prejudge the outcome of the Commission's process. INGAA seeks only to stress that there are, in fact, opportunities to examine and, as appropriate, enhance reliability and resilience in competitive wholesale electricity markets. The Commission needs to get the incentives right, on a fuel-neutral basis.

The natural gas system—and pipeline transportation in particular—is extremely reliable, as proven by the industry's record. However, there are regions in the country and periods of time when generators may benefit from primary firm gas transportation services but are not incentivized to purchase those services. NERC cites firm pipeline transportation as one of the solutions "to mitigate some of the risks created by single source fuel dependency."[10] Market rules can incent resources that contract for, or provide services to market participants, to ensure the desired level of reliability and resilience. Yet, those incentives do not seem to be producing sufficiently tangible results.

INGAA does not respond at this time on specific alternatives that various commenters offer in this docket to reform wholesale electricity markets. Nonetheless, none of the alternatives raised by commenters can rehabilitate this flawed NOPR. But it is important to highlight that NERC has "suggested a number of solutions to address [long-term resilience and reliability

exercise of market power, has been frequently affirmed by courts. *See e.g., Montana Consumer Counsel v. FERC*, 659 F.3d 910, 919 (9th Cir. 2011).

[9] API Initial Comments, p. 5.

[10] NERC Initial Comments, p. 12.

concerns], including … investments in transmission and pipeline infrastructure."[11] We also underscore API's conclusion that "investments in transmission and build out of pipeline infrastructure . . . are uniquely within the Commission's jurisdiction, support market-based solutions, and would not result in the negative impacts associated with the DOE NOPR . . ."[12] For these reasons, the reliability and resilience attributes of natural gas resources should inform the Commission's reform of wholesale electricity markets—if and when the Commission determines that such a reform is warranted in a particular ISO/RTO.

C. Opportunities to enhance reliability and resilience are most pronounced in certain regions and FERC should examine and address these issues in the near term.

Opportunities to enhance reliability and resilience of the grid are most pronounced in regions such as ISO-NE. Gas pipeline capacity is constrained at times, and gas-fired generators that may benefit from primary firm gas transportation service are not incentivized currently to purchase such service. In recent gas pipeline open seasons, gas-fired generators have not contracted for primary firm transportation service in any material way. In addition, new gas pipeline infrastructure—which has a three to four-year lead time for development and construction—is not getting built. The contracting decisions made by gas-fired generators today necessarily affect the ability to build new gas pipeline infrastructure, because pipeline expansions are predicated upon firm contract commitments. Since there is a long lead time related to the development of gas pipeline projects, it will be too late if ISO-NE waits until 2021, or later, to determine if its Forward Capacity Market Pay-for-Performance rules are having the desired effect.

[11] *Synopsis of NERC Reliability Assessment*, p. 6 (May 9, 2017).
[12] API Initial Comments, p. 5.

Nevertheless, ISO-NE states that if incentives under the Pay-for-Performance rules are insufficient, it "would like the ability to determine that result with its stakeholders and, if necessary, design additional market-based measures to alleviate fuel security concerns."[13] ISO-NE argues this despite acknowledging that it faces fuel-security challenges and that "reliability concerns remain particularly critical during winter peak demand conditions."[14]

Fuel-neutral, market-based rules can address such issues by incenting resources that contract for, or provide services to ensure, the desired level of reliability and resilience. But as noted, those incentives are not in place now in regions like ISO-NE, and pipelines have not yet seen any material changes in gas pipeline contracting practices in anticipation of the 2018 implementation date.[15] The Commission should address such issues in the near term, and should not commence or permit unbounded stakeholder processes.

II. FERC should lead an expeditious and thorough process to direct ISOs/RTOs to examine and implement any necessary reforms to value and incent reliability and resilience on a fuel-neutral basis.

Consistent with FERC's past practice and legal mandate, the Commission should rely on an evidence-based, data-driven process to develop policies that examine, value, and incent the performance attributes of reliable and resilient generation on a fuel-neutral basis, taking into account regional differences.

[13] ISO-NE Initial Comments, p. 11.
[14] *See* ISO-NE Inc. 2017 Regional System Plan (November 2, 2017), *available at*: https://www.iso-ne.com/system-planning/system-plans-studies/rsp, p. 1.
[15] Nor have pipelines seen any material changes in gas pipeline contracting practices to date as a result of PJM's Capacity Performance Program.

A. FERC should direct RTOs/ISOs to submit reports and findings to the Commission within 90 days.

Even commenters that support the NOPR concede the need for more fulsome, front-end engagement with the RTOs/ISOs. For example, Exelon declares that: "The rigorous analysis that must be the predicate for policy has not yet been done."[16]

Such engagement by all RTOs/ISOs would be helpful in addressing some of their principal objections to the process associated with the NOPR. For example, the ISO-RTO Council stated that the "procedural timeframe for this proceeding is unreasonable."[17] It noted further that:

> … the truncated period for public comment makes it impossible for interested parties to provide thorough analysis and comments sufficient to enable the Commission to build a comprehensive and meaningful record to aid its decision-making process. Specifically, given the extremely short deadline for comments, the members of the [ISO/RTO Council] have not had sufficient time to analyze comprehensively the potential impacts to reliability and market prices that could result from the proposed rule, much less the magnitude of such impacts.[18]

Although the Commission should permit some "opportunity for RTO/ISO stakeholder involvement in the development of compliance proposals,"[19] FERC should <u>not</u> commence unbounded stakeholder processes. A 90-day deadline for RTOs/ISOs to submit reports and findings to the Commission to examine whether, and if so how, they value and incent reliability and resilience in wholesale electricity markets is a good starting point.

The initial comments of the ISO-RTO Council crystallize the importance of reflecting regional differences in any proposed remedy: "Imposing a one-size-fits-all solution to an issue that may not exist in all markets without any regard for different market impacts, structures, and

[16] Exelon Initial Comments, p. 33.
[17] ISO/RTO Council Initial Comments, p. 3.
[18] *Id.*
[19] *Id.*

designs, is bad regulatory policy. When promulgating new market requirements, the Commission frequently espouses a respect for regional differences and flexibility, and in fact often eschews requests that the Commission require uniformity. The Commission should not abandon this policy by adopting the NOPR's one-size-fits-all compensation proposal."[20]

By directing all RTOs/ISOs to submit such reports and findings to the Commission within 90 days, the Commission would be kicking off a new process on an important set of issues with a focus and discipline that will yield an important analytical predicate to any reforms in wholesale electricity markets.

B. FERC should use an evidence-based and data-driven process.

The flaws of the NOPR reinforce the value of FERC's traditional approach to rulemaking—a process that is evidence-based and data-driven. The traditional process relies on facts about costs and markets to inform just outcomes that promote the well-functioning of competitive wholesale electricity markets for the benefit of consumers. An evidence-based and data-driven process guards against *a priori* biases.

In particular, any *a priori* assumptions about fuels by the Commission would be antithetical to the agency's commitment to evidence-based and data-driven processes. As the Commission designs a process to take advantage of opportunities to enhance reliability and resilience in wholesale electricity markets, INGAA urges the Commission to continue to rely on an evidence-based, data-driven process. Fuel neutrality and the Commission's traditional processes are inextricably linked, and it would be impossible to hold fast to a decades-long tradition of evidence-based and data-driven processes and jettison fuel neutrality.

[20] *Id*. at 33.

III. Natural gas infrastructure strengthens the current grid.

Natural gas infrastructure strengthens the grid, increasing both reliability and resilience in the face of extreme weather events, cyber threats, and other operational risks.

A. Natural gas infrastructure is unduly criticized in certain initial comments as limiting natural gas generators to "just in time" fuel.

Certain commenters attempt to justify the singular focus of the NOPR on coal and nuclear generators that have 90 days of on-site fuel supply by labeling natural gas a "just in time" fuel supply. [21]

Most of these commenters do not adequately define what they mean by "just in time."[22] For purposes of these reply comments, INGAA assumes that these commenters use "just in time" to refer to the manner in which natural gas is transported and delivered to natural gas generators, as that is the meaning NERC apparently ascribes to the term: "Natural gas-fired resources provide essential reliability services and often support frequency response needs, however, natural gas-fired generation…receives fuel on a 'just-in-time' basis, and is sensitive to fuel supply availability."[23]

The negative characterization by these commenters of the natural gas delivery and transportation infrastructure as "just in time" ignores the robust reliability attributes of natural

[21] PSEG asserts that "[t]he risk to the electric grid and to the citizens of our country if we have a portfolio of generating resources that is overly reliant on a single fuel source – particularly one that is dependent on 'just-in-time' fuel – is very real." PSEG Initial Comments, p. 3. FirstEnergy Initial Comments, pp. 3, 21 ("RTO/ISO initiatives, such as PJM's "Capacity Performance" program… do not address the issue here, which is that just-in-time fuel delivery is vulnerable at its point of delivery to the plant, as well as at any point on the fuel delivery system."). Peabody Initial Comments, p. 12 (stating that "When resources powered by one fuel are unavailable, as may be the case with … generators that rely on "just in time" fuel from pipelines, a resilient grid is able to draw upon other resources powered by onsite fuels.").

[22] *See e.g.,* NERC Initial Comments, p. 12 (stating that "the Commission should consider requiring that resource adequacy assessments account for reliability ramifications associated with the "just-in-time" natural gas fuel delivery model.").

[23] *See also* NERC Initial Comments, p. 10 (natural gas generation "typically" relies upon "'just in time' fuel transportation and delivery" and therefore has "greater susceptibility to fuel supply chain disruption than coal and nuclear generation.").

gas-fired generation. In addition, as detailed in a July 2017 report by the Natural Gas Council, the natural gas network has a host of operational characteristics giving it an exceptional record of reliability and resilience.[24]

AGA explains the inherent flexibility the natural gas pipeline system affords generators:

> [T]he natural gas system is extremely reliable and has an excellent track record of providing service to firm customers, including in situations of extreme weather conditions. The inherent characteristics of natural gas and the interconnected pipeline system allow operators in many cases to control and redirect the flow around an outage in one segment. Additionally, the existence of geographically dispersed production and storage, and its location across different parts of the pipeline and distribution system, also provides flexibility for operators to maintain service.[25]

The commenters also ignore the DOE Grid Study's reference to the role played by natural gas storage when necessary "to meet high demand levels and fill in deliveries in the event of any delivery disruptions."[26]

Both the Proposed Rule and its supporting commenters fail to recognize the natural gas industry's established record of reliability and resilience. The negative characterization by commenters of the natural gas infrastructure is not supported by the facts.

Some owners and operators of natural-gas fired electric generating facilities choose to have gas transported on FERC-jurisdictional interstate pipelines, and have the full panoply of options for service available under open access pipeline tariffs. As such, each shipper can contract for a level of transportation service to suit its needs. As noted above, NERC cites firm pipeline transportation as one of the solutions "to mitigate some of the risks created by single source fuel dependency."[27]

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[24] Natural Gas Council, "Natural Gas Systems: Reliable & Resilient," pp. 6-11 (July 2017), http://www.ngsa.org/download/analysis_studies/NGC-Reliable-Resilient-Nat-Gas-WHITE-PAPER-Final.pdf (last visited Oct. 21, 2017).
[25] AGA Initial Comments, p. 12.
[26] DOE Grid Study, p. 92.
[27] NERC Initial Comments, p. 12.

Firm pipeline capacity has proven to be exceedingly reliable and resilient, even when the pipeline network is strained by severe weather events.[28] INGAA's member pipelines had a 99.79 percent delivery rate of firm contractual commitments to customers at primary delivery points from 2006-2016.[29] When a shipper chooses to pay for interruptible pipeline capacity instead of firm, it knowingly runs the risk of having its withdrawals of fuel occasionally bumped, per Commission policy, depending on specific local circumstances and constraints.[30] To the extent that policymakers and grid operators want greater assurance about the reliability of pipeline transportation in competitive wholesale electricity markets, market rules must value and incent generation resources to contract for the pipeline transportation service that best matches their desired level of reliability.

B. The U.S. natural gas pipeline network is resilient to both physical and cyber attacks.

In its initial comments, Exelon resorts to hyperbolic statements concerning the reliability and resiliency of the Nation's natural gas pipelines, claiming that the disruption of the natural gas supply from an attack (whether physical or cyber) would necessarily interrupt the supply of electricity.[31] Exelon argues that such an interruption would then lead to further disruption in the ability of pipelines to deliver natural gas and would in turn lead to "a black sky event" that would "cripple sectors for the preservation of human life."[32] Exelon asserts that natural gas pipelines

[28] Amory B. Lovins, Co-founder and Chief Scientist of the Rocky Mountain Institute, emphasizes that electricity generation problems during the 2014 Polar Vortex were not the result of natural gas fueled power-plant deficiencies, and that regional gas supplies were available throughout the period, but not all users had the right delivery arrangements. Much of the gas deliverability that could not assure supply did turn out to be available, but not in time to schedule dispatch of gas-fired units that thus had to be passed over. *See* Rocky Mountain Institute Initial Comments, p. 12.
[29] INGAA Initial Comments, p. 5.
[30] *See* AGA Initial Comments, pp. 12-17 (comparing attributes of various classes of transportation service available to natural gas shippers).
[31] Exelon Initial Comments, p. 34.
[32] *Id.*

are vulnerable to such attacks and a "black sky event" because of the lack of mandatory reliability standards for the natural gas pipeline sector.[33]

However, Exelon's doomsday claims are based on an analysis of extreme, negative theoretical outcomes, and it fails to consider the programs adopted by the industry to mitigate against threats or the resiliency that is inherent to the operational characteristics of natural gas pipeline network, all of which contribute to pipelines' ability to operate and transport natural gas reliably in the face of evolving threats.

A large part of Exelon's argument largely rests on a single analysis of very improbable events—the consequences of which can be mitigated and for which contingency planning exists. Specifically, Exelon relies heavily on the Gas Contingency Analysis related to PJM's Regional Transmission Expansion Plan process to support its claims of the potentially dire impact of pipeline outages on the energy sector.[34] Yet Exelon does not acknowledge that the PJM Analysis does not consider the probability of such outages, let alone conclude that the outages are likely. The PJM Analysis also does not address what impacts, if any, may be probable but instead considers only the potential extreme impacts to the electricity sector that could theoretically be caused by the complete loss of service from certain natural gas assets. To that end, the PJM Analysis, by its own language, used a "conservative" approach, including assumptions (i) that service from each natural gas asset considered would be completely lost, (ii) that each contingency event reviewed (i.e., each outage) would necessarily result in the instantaneous and simultaneous loss of generation from each gas-powered generation facility associated with that natural gas asset and (iii) that generation facilities with dual fuel capabilities would experience

[33] *Id.* at 33.
[34] Exelon Initial Comments, p. 3 (citing PJM Reliability Analysis Update (Sept. 14, 2017) (hereinafter "PJM Analysis"), *available at* http://pjm.com/-/media/committees-groups/committees/teac/20170914/20170914-reliability-analysis-updates.ashx, pp. 8-11).

outages irrespective of those capabilities.[35] Accordingly, PJM's assumptions result in only the most extreme cases of potential negative impacts from natural gas facility outages.

Under actual conditions, this extreme type of complete and instantaneous failure has never occurred and is extremely unlikely to occur in the future due to the nature of the gas pipeline industry, its infrastructure, its operations, and its diversity in ownership and control of facilities. Moreover, the PJM Analysis concludes that, no matter how implausible, this extreme scenario can be managed, confirming that "[i]n general, our system is robust for gas contingencies."[36]

Importantly, and contrary to Exelon's claims, the Transportation Security Administration (TSA), the federal agency responsible for regulating gas pipeline physical and cyber security, has not identified any significant threat data or information establishing natural gas pipelines as the targets of debilitating physical or cyber attacks.[37] Additionally, a Massachusetts Institute of Technology report found that "[t]he natural gas network has few single points of failure that can lead to a system-wide propagating failure."[38] The physical and operational characteristics of the interstate natural gas pipeline system, plus the Commission's policy of encouraging pipe-on-pipe

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[35] PJM Analysis, pp. 8, 12.

[36] PJM Analysis, p. 12.

[37] Rather, TSA concluded "with high confidence that the terrorist threat to the U.S. pipeline sector is low." TSA, Office of Intelligence, Pipeline Threat Assessment at 3 (Jan. 18, 2011) available at https://publicintelligence.net/ufouo-tsa-liquid-and-natural-gas-pipeline-threat-assessment-2011/. By comparison, so-called "fuel secure" generation (i.e., coal and nuclear) face significant risk of physical threats. Although an update to the 2011 TSA threat assessment has not been publicly released, we are aware that in October 2016 TSA advised the Congressional Research Service (CRS) that, as of that time, TSA had *not* determined that the terror threat to pipelines in the U.S. had increased. For example, the Rocky Mountain Institute (RMI) in its comments analyzes the risk of physical threats to coal and notes that "two-fifth of the Nation's coal" comes from the Powder River Basin (primarily in Wyoming and, in turn, "depends on specific rail and bridge chokepoints at least as concentrated as major gas pipelines," and RMI underscores the point, calling these chokepoints "nothing less than an all-American Strait of Hormuz" where "[n]early all that Wyoming coal goes through one 103-mile, 24/365 rail corridor." *See* Rocky Mountain Institute Initial Comments, p. 15.

[38] N. Judson, Massachusetts Institute of Technology, Lincoln Laboratory, "Interdependence of the Electricity Generation System and the Natural Gas System and Implications for Energy Security," p. 6 (May 15, 2013) ("MIT Report") available at: https://www.ll.mit.edu/mission/engineering/Publications/TR-1173.pdf (last visited Nov. 4, 2017).

competition with multiple pipelines often serving the same market, help to ensure reliable natural gas supply, even in the event of malicious physical or cyber attacks.

The natural gas industry has largely underground and protected infrastructure, has extensive and widely distributed bulk storage both underground and in the pipelines ("linepack"), and operates many self-powered compressors as well as some that are grid-dependent.[39] This gas transportation network is composed of interconnected pipelines with multiple owners, so supply and transportation disruptions can be managed through substitution, transportation rerouting and storage services.[40] Additionally, pipeline capacity is often increased by installing two or more parallel pipelines in the same right-of-way (called pipeline loops), making it possible to shut off one loop while keeping the other(s) in service. In the event of one or more compressor failures, natural gas pipelines can usually continue to operate at pressures necessary to maintain deliveries to pipeline customers.[41]

Exelon incorrectly asserts that, because natural gas pipelines are not subject to FERC and NERC reliability standards, no "mandatory standards exist" that are "remotely equivalent" to those that help strengthen the bulk power system against attack. Such a statement ignores a number of important facts.

The TSA Pipeline Security Guidelines apply to the natural gas pipeline industry.[42] The industry also has developed highly resilient operational and information technology programs,

[39] *See* MIT Report, pp. 1-5 (describing the natural gas delivery system); RMI Initial Comments, p. 15.
[40] *See* MIT Report, pp. 6-7.
[41] *See* MIT Report, pp. 17 (discussing the robustness of the natural gas system).
[42] *See* TSA, *Pipeline Security Guidelines* (Apr. 2011) *available at*: https://www.tsa.gov/sites/default/files/tsapipelinesecurityguidelines-2011.pdf (last visited Nov. 4, 2017).

assets, and controls to mitigate the impacts of potential threats, and these activities are founded upon a set of a robust risk-based Control Systems Guidelines, which were approved by TSA.[43]

The natural gas pipeline industry also is subject to other relevant federal guidelines and standards, including the National Institute of Standards and Technology Framework for Improving Critical Infrastructure Cybersecurity and the Department of Energy Cybersecurity Capability Maturity Model. To further mitigate cyber risk, INGAA and its members actively confer with each other, industry peers, and government agencies using cyber threat information sharing opportunities.

C. Natural gas infrastructure does not face unique operational risks, and any issues generally are resolved quickly.

Natural gas infrastructure enhances reliability and resilience because it marshals a number of critical attributes to support the grid. This contribution is undervalued by those who focus on a narrow definition of fuel diversity that carries limited meaning in a discussion about reliability and resilience. As noted in INGAA's initial comments, the IHS Markit study on which the DOE NOPR relies is significantly flawed because of the assumptions it makes about the connection between fuel diversity and future reliability.[44]

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[43] *See* INGAA, *Control Systems Cyber Security Guidelines for the Natural Gas Pipeline Industry* (Sept. 17, 2015) (not publicly available). Further, as a member of the Oil and Natural Gas (ONG) Sector Coordinating Council, INGAA and its members participate regularly in meetings and programs sponsored by DOE's Office of Energy Delivery and Reliability and in classified and unclassified briefings offered by various federal agencies on cyber and physical threats and joint briefings and workshops with the Chemical Sector Coordinating Council and the Electricity Sub-sector Coordinating Council. *See* Energy Sector—Oil and Gas Subsector: Council Charters and Membership, DHS, https://www.dhs.gov/energy-ong-subsector-charters-and-membership (last visited Nov. 3, 2017) (listing INGAA among the ONG council membership). INGAA has successfully developed a DHS award-winning automated cyber threat information sharing network allowing information to be shared among the industry, with peers, and with the federal government automatically and in real-time further improving the resiliency of critical infrastructure against cyber threats. *See e.g.*, DHS, National Infrastructure Protection Plan (NIPP) Security and Resilience Challenge: Interstate Natural Gas Association of America (INGAA) Automated Cyber Threat Information-Sharing Network (Nov. 2016), https://www.dhs.gov/sites/default/files/publications/nipp-challenge-ingaa-cyber-network-508.pdf (last visited Nov. 3, 2017) (describing INGAA's award-winning submission to the NIPP challenge).

[44] INGAA Initial Comments, pp. 18-20.

A number of commenters cite to that flawed report to support their appeal to FERC to pursue a fatally flawed proposal that has a profound fuel bias. The American Coal Council cites to the IHS study to attribute consequences to the coal plant retirements that have not actually been observed.[45] FirstEnergy leans heavily on the 2014 and 2017 IHS Markit reports in support of the proposition that continued closure of coal and nuclear plants will result in costly impacts to energy markets and the economy as a whole.[46] The Nuclear Energy Institute relies on the 2017 IHS Markit study to support its position that increased reliance on natural gas and renewable generation would increase retail power prices.[47] In addition, the Clean Coal Coalition cites the IHS Markit report, and concludes that "on a going forward basis (excluding sunk costs), costs of continuing to operate existing coal-fired generation facilities are significantly lower than the long-term marginal cost of building new combined cycle gas generation."[48] In all cases, the ultimate conclusions are damaged by reliance on a deeply flawed report.

Further, despite efforts by some commenters to suggest otherwise, natural gas does not face unique operational risks. Highlighting the alleged reliability attributes of nuclear generation, Exelon points to gas supply interruptions that occurred during one night of the Polar Vortex in 2014.[49] What Exelon fails to note is that gas performed better than coal and roughly the same as nuclear during that winter weather event.

[45] American Coal Council Initial Comments, p. 5.
[46] FirstEnergy Initial Comments, pp. 30-31.
[47] NEI Initial Comments, p. 21.
[48] ACCCE Initial Comments, p. 3.
[49] Exelon Initial Comments, p. 24.

IV. The NOPR's proposed remedy violates the FPA and the APA.

As detailed in INGAA's Initial Comments, the Proposed Rule's remedy is unduly discriminatory in violation of Section 206 of the FPA. The proposal values reliability and resilience for certain resources while excluding similarly situated resources, such as those fueled by pipeline-delivered natural gas, which have comparatively been reliable and resilient during extreme weather events, if not better.[50] Other commenters echo this same point.[51] The ISO-RTO Council rightly notes how the burden is on the Commission to "show not only how the existing rate is unjust and unreasonable, but also how the new rate satisfies the statutory just and reasonable standard."[52]

As noted by numerous commenters, the Proposed Rule also violates the APA's requirement for a reasoned explanation of the proposal.[53] FirstEnergy, PSEG, Exelon, NEI, and others launched a veritable fusillade in an attempt to resuscitate the proposal by providing a rationale for the NOPR and supplementing the record in this docket. When all is said and done, the fusillade is misguided as it is neither grounded in fuel-neutrality nor does it recognize that the proposed remedy would be a vast departure from longstanding FERC policies promoting competition in wholesale electricity markets.

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[50] INGAA Initial Comments, pp. 20-22.
[51] *See e.g.,* RMI Initial Comments, p. 2 (noting that "taken in their context, the attributes [Secretary Rick Perry] wants rewarded, though framed as if fuel-neutral, are effectively fuel-specifying—hence "unduly discriminatory or preferential," a prohibited practice.).
[52] ISO-RTO Council Initial Comments, p. 11 ("Given the very prescriptive directive to establish a new rate (i.e., full cost of service rate recovery for generators that satisfy the requirements), the onus is on the Commission to demonstrate how this new rate is just and reasonable for all affected generators, across all markets, and to all ratepayers. The NOPR does not even mention this obligation.").
[53] *See e.g.,* NGSA Initial Comments, pp. 18-19; Joint Industry Initial Comments, pp. 5, 25; California PUC Initial Comments, p. 12.

V. Conclusion.

For the reasons set forth in these reply comments and the reply comments of the Joint Industry Group, the Commission should not use the NOPR as the basis for any rule since it is irremediably flawed. Instead, the Commission should direct all RTOs and ISOs to examine whether, and if so how, they value and incent reliability and resilience in wholesale electricity markets and report their findings to the Commission within 90 days.

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