

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

Grid Resilience in Regional Transmission)
Organizations

Docket No. AD18-7-000

**COMMENTS OF THE
AMERICAN GAS ASSOCIATION**

On January 8, 2018, the Commission issued an order terminating the proceeding in Docket No. RM18-1-000 to address the Proposed Rule on Grid Reliability and Resilience Pricing submitted to the Commission by the Secretary of Energy¹ and initiated a new proceeding in Docket No. AD18-7-000 to specifically evaluate the resilience of the bulk power system in the regions operated by regional transmission organizations (“RTO”) and independent system operators (“ISO”).² In this new proceeding, the Commission directed each RTO and ISO to submit information to the Commission on certain identified resilience issues and concerns to enable the Commission to examine holistically the resilience of the bulk power system (“BPS”). The Commission also provided for interested parties to submit comments on the RTO/ISO submissions. Pursuant to the BPS Resilience Order, the American Gas Association (“AGA”) respectfully submits these comments.

I. EXECUTIVE SUMMARY

Resilience is important for all energy systems in the United States – including natural gas systems and the BPS. AGA recognizes that the current level of fuel diversity is important for the BPS and notes that even as the use of natural gas as fuel for electricity generation has increased,

¹ *Grid Resiliency Pricing Rule*, 82 Fed. Reg. 46,940 (Oct. 10, 2017) (“Proposal”).

² *Grid Resilience in Regional Transmission Organizations and Independent System Operators*, 162 FERC ¶ 61,012 (2018) (“Grid Resilience Order”).

BPS fuel diversity currently exists and is expected to continue for the foreseeable future.³ As stated in comments on the Proposal, AGA reiterates herein that natural gas has been and continues to be an extremely reliable fuel for power generation. From the perspective of AGA member natural gas local distribution companies (“LDCs” or “gas utilities”) – whose primary focus is on the safe and reliable delivery of abundant and affordable natural gas supplies – the reliability and resilience of the natural gas transportation system is critical to the gas utility business operations and their regulatory obligations to serve.

AGA submits these comments following a review of the ISO/RTO submissions. As a general observation, the ISO/RTO filings reiterate what is already known – that different circumstances with respect to resilience issues and concerns exist in the different wholesale electric organized market regions. Given this, in the Commission’s review and determination of any next steps, AGA believes that a one-size-fits-all solution may not solve the reliability and resilience concerns facing the BPS for many of the reasons noted in the ISO/RTO submissions. Ultimately, the issue may be what level of electric grid reliability and resilience a particular region wants and how much that region is willing to pay to enhance reliability and resilience.

Reliability is not free. When gas-fired generators realize a need to accommodate an expected level of reliable operations, they may seek to enter into contracts for additional natural gas services. However, those services must be aligned with the market incentives. When that alignment occurs, new or expanded natural gas infrastructure may be needed to ensure that reliability exists for both the BPS and natural gas systems. In situations where expansion or development of new natural gas infrastructure is needed, there must be a determination of who

³ See 2017 Annual Energy Outlook, U.S. Energy Information Administration. The DOE grid reliability report also acknowledges this point. See also DOE Staff Report to the Secretary on Electricity Markets and Reliability, August 2017 at 90 (“DOE Grid Study”).

will pay for the costs associated with such infrastructure. AGA recognizes that in some regions, solutions other than expanding pipeline capacity may exist to help ensure electric-side reliability, such as dual fuel requirements, and that a one-size-fits-all solution may not solve the reliability and resilience concerns facing the BPS.

In terms of comments on specific RTO/ISO filings, AGA's comments specifically respond to the Comments and Responses of PJM Interconnection, L.L.C. ("PJM").⁴ PJM recommends greater coordination and communication with LDCs that supply wholesale generation, including that the Commission support such efforts by evaluating whether communication and coordination obligations should be *imposed* on LDCs.⁵ AGA believes that this recommendation is flawed for many reasons as discussed in these comments, considering that the Commission's limited jurisdictional authority, the role of state regulatory jurisdiction and requirements, and the proposed data sharing – particularly among LDCs with interstate pipelines affiliates – could create Order 787-like compliance complications. The recommendation is also premature. Before requesting the Commission impose jurisdictionally-questionable generic requirements on LDCs, PJM should first engage with all LDCs in its footprint in a collaborative forum for further discussions⁶ and PJM and the Commission can initiate three concrete steps that would immediately improve overall energy grid resilience as outlined below. At this time, there simply is no basis to impose mandatory information-sharing requirements on LDCs, as advocated by PJM.

⁴ See *Comments of PJM Interconnection, L.L.C.*, Docket No. AD18-7-000 ("PJM Response").

⁵ *Id.* at 28.

⁶ At one time, PJM had a Gas-Electric Senior Task Force, but it no longer appears on the web site.

II. COMMUNICATIONS

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III. IDENTITY AND INTERESTS

The AGA, founded in 1918, represents more than 200 state-regulated and municipal natural gas utility companies that deliver clean natural gas to more than 177 million Americans. AGA also advocates for the more than 73 million residential, commercial and industrial natural gas customers in the U.S., of which 95 percent – more than 69 million customers – receive their gas from AGA members. Today, natural gas meets more than one-fourth of the United States' energy needs.⁷

AGA member natural gas LDCs own and operate local natural gas distribution pipeline systems that typically receive natural gas supplies that have been transported on the interstate pipeline system. LDCs deliver natural gas under locally-regulated rates, terms and conditions, directly to residential, commercial and industrial customers, including electric generators – some that participate in Commission-regulated wholesale electricity markets. AGA members take service from virtually every interstate natural gas pipeline regulated by the Commission under the Natural Gas Act (“NGA”). As customers of jurisdictional pipelines and providers of natural gas distribution service to power generation, AGA members are directly affected by Commission

⁷ For more information, please visit www.aga.org.

rules and policies addressing or affecting the reliability of the natural gas system, including coordination between the natural gas and electricity markets. AGA member companies, therefore, have a direct and substantial interest in the issues raised in this proceeding.

IV. COMMENTS

The Commission stated that its goals in this proceeding are to: (1) develop a common understanding among the Commission, industry, and others of what resilience of the BPS means and requires; (2) understand how each RTO and ISO assesses resilience in its geographic footprint; and (3) use this information to evaluate whether additional Commission action regarding resilience is appropriate at this time.⁸ AGA's interest in this proceeding and the general basis of its review of the ISO/RTO submissions regards that the growth in the use of natural gas for power generation has led some – particularly those unfamiliar with natural gas operations and contracting practices – to question the ability of natural gas to continue to serve this market reliably.

A. The Natural Gas Network is Reliable

As discussed in AGA's comments on the Proposal, natural gas is a clean, domestic, abundant, efficient and affordable resource; its use helps strengthen America's economy, addresses environmental challenges, and improves our overall national security by reducing our dependence on foreign energy sources. America's natural gas resource base is immense with economically accessible natural gas resources that include significant sources of unconventional gas such as shale gas.⁹ Additionally, while unusually severe weather events have the potential to disrupt the natural gas system, outages of firm pipeline transportation and storage services have

⁸ Grid Resilience Order at P 18.

⁹ According to analysts, natural gas resources and current reserves have the ability to supply over 100 years of demand at today's consumption rates.

been rare.¹⁰ In sum, the natural gas production, transmission, storage and distribution systems in this country support the most flexible and resilient natural gas market in the world.¹¹

The physical characteristics of natural gas, as well as the industry's operational practices, provide an extremely high level of reliability and resilience for gas customers. Additionally, natural gas contracting practices are important to ensure reliability and resilience for the natural gas and electric markets. Specifically, if large-volume customers, such as natural gas-fired generators, seek the highest level of reliable natural gas service, they may choose to achieve that level by entering into "firm" or, in some cases, even "no-notice" contractual arrangements to ensure pipeline capacity and/or storage service is available when needed to benefit from this physical reliability. Alternatively, based on their specific local circumstances, other generators may choose to achieve a very high level of reliability through a combination of interruptible pipeline capacity coupled with oil backup, or other resources of their choosing to similarly meet their fuel requirements.¹²

The 2014 Polar Vortex ("Polar Vortex") is frequently used as an example by those expressing concern that electric generators may be placing too much reliance on natural gas.¹³ However, during the Polar Vortex, the natural gas industry performed and honored firm fuel supply and transportation contracts in an exemplary manner. The natural gas-fired generation units that experienced natural gas supply interruptions during this time period were not using

¹⁰ Natural Gas Council White Paper, *Natural Gas Systems: Reliable & Resilient*, July 2017, at 4-7 (NGC White Paper). <https://www.aga.org/federal-regulatory-0/federal-regulatory/federal-regulatory-issues-and-advocacy/natural-gas/natural>.

¹¹ See e.g., *Comments of the American Gas Association*, Proposal, Docket No. RM18-1-000, filed Oct. 23, 2017.

¹² AGA does not oppose an investigation of alternate approaches to address resilience; it is reasonable for FERC and stakeholders to cooperate in looking at multiple scenarios in evaluating the right design threats. Firm contracts and no-notice service could be the proper fit in some scenarios; other backup approaches may be more appropriate for other scenarios and may be properly the subject of further investigation.

¹³ Proposal, 82 Fed. Reg. 46,942 (Oct. 10, 2017).

firm service, but were typically relying upon interruptible service contracts even during the peak winter period without sufficient alternative fuel resources available.¹⁴ However, generation other than natural gas-fired generation also failed to perform up to expectations during the Polar Vortex.¹⁵

In particular, LDCs were well prepared and met the challenge by executing plans made for just such contingencies. During the Polar Vortex, underground storage provided a critical supply component along with firm pipeline capacity, local production, and third-party transportation agreements. Some gas utilities used LNG as a peak-shaving asset to meet incremental load requirements on the coldest days, and many utilities supplemented supplies via spot commodity purchases.¹⁶

Additionally, the inherent reliability of the natural gas system was evidenced in late August last year during Hurricane Harvey. AGA received reports that local gas utility distribution systems remained operational in the Houston area. Further, the use of natural gas-powered microgrids and combined heat and power systems allowed certain businesses and

¹⁴ In looking at generator reliability, some in the industry continue to be imprecise and fail to distinguish between interruption of interruptible service, failure to obtain gas supply for price or other reasons, force majeure curtailment and other possible causes. For example, in “PJM Cold Snap Performance Dec. 28, 2017 to Jan. 7, 2018,” dated Feb. 26, 2018, <http://www.pjm.com>, at 16, PJM states: “PJM uses ‘gas supply issue’ to refer to a generator outage that was due to lack of natural gas fuel supply, which could be due to a number of varying circumstances. Gas supply issues include transportation restrictions and interruptions as well as spot gas commodity availability.”

¹⁵ See PJM Report, “Analysis of Operational Events and Market Impacts During the January 2014 Cold Weather Events,” May 8, 2014. <http://www.pjm.com/~media/library/reports-notice/weather-related/20140509-analysis-of-operational-events-and-market-impacts-during-the-jan-2014-cold-weather-events.ashx>. AGA notes that mechanisms to enhance reliability in a fuel-neutral manner have already been put in place by RTOs/ISOs, and the Commission should consider how those mechanisms work in connection with the Proposal. See also, FERC Staff 2014 State of the Markets Report (March 19, 2015) slides 17, 18 and 20.

¹⁶ American Gas Association, “Promise Delivered: Planning, Preparation and Performance during the 2013-14 Winter Heating Season,” September 2014.

hospitals to remain open after Hurricane Harvey,¹⁷ as well as following Hurricane Sandy.¹⁸ This is the definition of resilience.

It is also important to understand that the contracted level of natural gas service also matters and plays a significant role in achieving a natural gas customer's desired level of reliability and resilience. In order to benefit from the reliability of the natural gas system, large-volume customers, such as industrial users, electric generators, commercial customers and LDCs, must contract for firm transportation services to meet their own or their customers' obligations. Interruptible customers, such as generators, may be able to achieve equally high levels of electric reliability through the use of backup fuel supplies, dual-fuel capabilities, or other alternative resources. Absent customers' purchasing pipeline capacity on a firm basis,¹⁹ pipelines may not have transportation capacity available for them to use, or higher priority firm transportation customers may bump their service even if there are no physical gas or transportation disruptions. On peak days, when weather-sensitive firm transportation customers are using their full contractual entitlements, there may be little or no interruptible transportation capacity left over for interruptible customers.²⁰

In summary, the 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.

¹⁷ Some examples include: <https://www.bizjournals.com/sanantonio/news/2017/08/28/microgrids-pass-crucial-test-for-heb-during-harvey.amp.html>; [CHP Installation Keeps Hospital Running During Hurricane Harvey; Natural Gas Infrastructure in Good Shape During Harvey](#)

¹⁸ [How CHP Stepped Up When the Power Went Out During Hurricane ...; CHP Kept Schools, Hospitals Running Amid Hurricane Sandy...](#)

¹⁹ Note, this discussion assumes capacity is determined to be needed and is either available and/or can be constructed. AGA understands that in certain regions of the country, such as New York and New England, existing pipelines are fully-subscribed on a firm basis and/or the construction of new or the expansion of pipeline infrastructure may be more costly than other back-up fuels or is impacted by other factors.

²⁰ In such cases, having back-up dual-fuel capability may be an option. For example, gas-fired generators in New York City are generally required to have dual-fuel capability, maintain specified levels of back-up fuel, and to have automatic fuel switching capability or operate on alternate fuels during critical system conditions. The fixed costs of dual-fuel capability are reflected in the capacity market demand curves for New York City.

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.²¹

B. Response to PJM’s Submission

In its comments, PJM states that the bulk electric system (“BES”) it operates is safe and reliable today.²² However, PJM states that improvements can and should be made to make the BES more resilient against known and potential vulnerabilities and threats.²³ PJM notes that in many cases, resilience actions are anchored in, but go beyond what is strictly required for compliance with, the existing NERC reliability standards.²⁴

PJM states that resilience is not only about high-impact, low-frequency events, but also involves addressing vulnerabilities that evolved over time and threaten the safe and reliable operation of the BES (or timely restoration), but are not yet adequately addressed through existing RTO planning processes or market designs.²⁵ Given this, PJM requests the Commission

²¹ See e.g., Texas Gas Transmission, LLC, 130 FERC ¶ 61,158 (2010) (accepting tariff proposal to establish, on a two-year experimental basis, a new Winter No-Notice Service to meet the needs of the electric generation market); Natural Gas Pipeline Co. of Amer., 92 FERC ¶ 61,221 (2000) (accepting tariff sheets to establish a new Firm Reverse Storage Service designed primarily to meet the needs of the electric generation market during the summer peak period); ANR Pipeline Co., 89 FERC ¶ 61,210 (1999) (accepting proposal to create a firm and interruptible hourly flow service designed to meet the demand for natural gas among electric generators and those who service the electric generation market). Additionally, see the recent Texas Eastern Enhanced Reliability Project – Open Season (August 1-September 30, 2017, as extended): <https://infopost.spectraenergy.com/GotoLINK/GetLINKdocument.asp?Pipe=10076&Environment=Production&DocumentType=Notice&FileName=Open+Season++PJM+Reliability.pdf&DocumentId=8aa1649f5e56d0a4015e7bf865b5045e>

²² PJM Response at p 4.

²³ Id.

²⁴ Id.

²⁵ Id.

take several actions to enhance resilience of the grid and interrelated systems that depend on the BES. Among them is the following recommendation:

[G]reater communication and coordination is needed with the local distribution companies (“LDCs”) that supply wholesale generation, and the Commission should support such efforts including evaluating whether communication and coordination obligations should be *imposed* on LDCs that supply jurisdictional wholesale generation.²⁶

In this regard, PJM recommends that one possible manner of imposing obligations on LDCs might be as customers of interstate pipeline tariffs.²⁷ This recommendation suffers from several flaws, discussed below.

1. PJM’s Proposal is Jurisdictionally Flawed

As a preliminary matter, AGA member gas utilities are generally exempt from the Commission’s jurisdiction under NGA section 1(b) for local distribution and/or 1(c) under the Hinshaw exemption.²⁸

Additionally, PJM overlooks the fact that Congress amended the Federal Power Act (“FPA”) to specifically give the Commission authority over electric reliability and all the organizations that develop the standards and implement them, but not all facilities are considered part of the interstate BES under the Commission’s oversight. The NGA does not have an equivalent overarching authority, so jurisdiction is split among the Commission and the states.

²⁶ See *Comments and Responses of PJM Interconnection, L.L.C.*, Docket No. AD18-7-000 at p 8 (emphasis added).

²⁷ *Id.* at Footnote 9.

²⁸ Section 1(c) of the NGA exempts from the Commission’s NGA jurisdiction pipelines which transport gas in interstate commerce if: (1) they receive natural gas at or within the boundary of a state; (2) all the gas is consumed within that state; and (3) the pipeline is regulated by a state commission. This exemption is referred to the “Hinshaw exemption” named after the congressman who introduced the bill that amended the NGA to include section 1(c). See also, *ANR Pipeline Co. v. Federal Energy Regulatory Comm’n*, 71 F.3d 897, 898 (1995) (*ANR v. FERC*) (which provides a brief summary of the history of the Hinshaw exemption). LDCs are subject to FERC’s limited jurisdiction as blanket marketing certificate holders, as capacity release certificate holders, as service providers under 284.224, and as general market participants (Form No. 552 and in terms of anti-manipulation/enforcement).

While AGA members support efforts for coordination with the state commissions, the Commission does not have jurisdiction to compel LDCs to take action in the way PJM recommends.

Further, PJM's recommendation to consider the Commission's jurisdictional authority over LDCs as interstate pipeline shippers as a means of imposing communication and coordination obligations - while creative, is also flawed. Specifically, to argue that because LDCs are shippers on the interstate pipeline, and therefore the Commission can impose communication and coordination requirements only with respect to wholesale generators, would be incomplete. The assumption that LDCs supply wholesale generators is without regard to the realities of the natural gas wholesale market and delivery system. In fact, LDCs are rarely, if ever, the gas supplier for the wholesale electric generator; rather, LDCs are only one part of the transportation chain. To single out LDCs and require them to undertake any responsibility for the reliable operation of generators located in the LDC territory – without the Commission first exercising its lawful jurisdiction over pipelines, marketers and electric generators and their suppliers – would be regulatory overreach. The Commission should reject PJM's suggestion in this regard. Additionally, imposing these types of requirements on contracts between interstate pipelines and LDC shippers could frustrate the ability of LDCs to enter into Asset Management Arrangements – one of the existing ways to provide for market efficiency by allowing unused LDC interstate pipeline capacity to be utilized by other parties such as electric generators.

2. PJM's Request for Changes to Order No. 787 Information Sharing is Flawed

PJM requests that the Commission make the voluntary information sharing provisions of Order No. 787²⁹ mandatory and apply those provisions to LDCs as well as interstate pipelines.

²⁹ *Communication of Operational Information Between Natural Gas Pipelines and Electric Transmission Operators*, Order No. 787, 78 Fed. Reg. 70,163 (Nov. 22, 2013), FERC Stats. & Regs. ¶ 31,350 (2013).

The proposal would require that interstate pipelines and LDCs make “real-time” operational information available to PJM before it becomes available to other market participants. This raises several concerns with this request, as discussed below.

First, critical pipeline operational information is already publicly shared on the pipeline websites. RTOs/ISOs and integrated electric utilities can access this information and be notified of all emerging material events on the interstate pipeline grid at the same time as pipeline shippers. For an RTO/ISO to obtain this material pipeline information on a confidential basis in “real time” before other shippers – which is the stated intent from PJM’s comments – would undermine the fairness of natural gas commodity and capacity markets and would give electric utilities preference over other shippers that use the interstate pipeline grid and compete to secure natural gas supplies and delivery of those supplies.³⁰

Second, the contracted level and character³¹ of natural gas service may play a more significant role in achieving a natural gas customer’s desired level of reliability and resilience. Generation located behind the LDC city gate is a relatively small portion of the total generation in the PJM footprint.³² However, generators located behind LDC city gates can have varying levels of service priority with the LDC transporter/supplier. For example, gas utilities may offer an interruptible “bundled” sales service and/or a stand-alone interruptible transportation service for the transportation customer-owned gas on the local distribution system; however, the LDC

³⁰ Note that the Commission’s current voluntary informational sharing under Order No. 787 forbids public utilities that receive non-public information from sharing it with marketing function employees. Because gas purchasing is not considered a marketing function, however, the restriction does not address the underlying concern of PJM.

³¹ For example, firm vs. interruptible, primary firm vs. secondary firm, in-path vs. out of path.

³² See “Phase 2 Report: Interregional Transmission Development and Analysis for Three Stakeholder Selected Scenarios And Gas-Electric System Interface Study,” DOE Award Project DE-OE0000343, issued July 2, 2015 Volume 10, sponsored by the Eastern Interconnection Planning Collaborative (EIPC) and prepared by Levitan & Associates, Inc. at 10-41 (showing baseline results for PJM that under each of six scenarios, “Scheduled Energy with Undeliverable Gas” never rose above 11%, even before consideration of dual-fuel capability).

may not be able to maintain interruptible transportation service at all times.³³ As a result, a natural gas-fired power generator relying on an LDC distribution system, particularly on an interruptible basis, needs to plan for the use of alternate fuels, maintain on-site fuel storage, or contract for a higher level of service from the LDC. Receiving information from the LDC does not necessarily improve a generator's desired level of reliability and resilience.

Third, the Commission should not provide preferential access to non-public market information to public utilities that would reduce the fairness and efficiency of the gas commodity and capacity markets. As discussed above, the natural gas system is reliable and provides service to firm customers, including in severe weather conditions. In order to benefit from the reliability of the natural gas system, large-volume customers, such as industrial users, electric generators, commercial customers and LDCs, must contract for firm transportation services to meet their own or their customers' obligations.³⁴

Fourth, PJM's argument that LDCs should be required to share confidential information with RTOs fails to consider the fact that LDCs have confidentiality obligations with their customers as a matter of contract and state regulation. The release of operating information to any other party could breach these obligations. The relationship between an LDC and generator is typically limited to the LDC providing natural gas supply and/or transportation service, upon request, at a contract or tariff rate. In contrast, PJM and other grid operators have a direct interest in whether a particular generator can generate electricity and perform in accordance with

³³ For background see Natural Gas Systems: Reliable & Resilient, issued July 2017 by the Natural Gas Council at p. 19.

³⁴ PJM and its members certainly recognize this because it is the basis of the Capacity Performance auction reforms that will become fully effective in 2020. <http://www.pjm.com/~media/library/reports-notice/capacity-performance/20150720-capacity-performance-at-a-glance.ashx>. (“As a ‘pay-for-performance’ requirement, generators may receive higher capacity payments and are expected in return to invest in modernizing equipment, firming up fuel supplies and adapting to use different fuels. (Natural gas plants will improve fuel security, placing them on a par with traditional resources having firmer fuel supplies.)”) AGA members have taken notice that these reforms, though not yet fully implemented, have improved reliability within PJM.

its bid or as requested by the grid operator. Therefore, AGA suggests that PJM be able to: (1) request relevant operational information, including upstream pipeline contract and gas supply information, directly from the generators attached to the PJM grid; and (2) penalize generators that fail to provide such accurate information.

Both markets – electric and natural gas – are important to serve the nation’s consumers on cold days.³⁵ The Commission should assess carefully any action that would advantage one energy sector in favor of another. Moreover, certain LDCs that have not signed information-sharing agreements with PJM have not done so because, in addition to the above reasons, they have concerns that the PJM operating agreement, Section 18.1.f., provides for information sharing for the sole purpose of enhancing electric grid reliability but not for natural gas infrastructure reliability. As gas-fueled electric generation expands,³⁶ it is only a matter of time before an LDC, in reacting to a force-majeure event on its pipeline supplier, is going to have to look to the electric sector for emergency support. To agree to share information for the purpose of improving the reliability of the electric grid without a reciprocal obligation on the part of the electric industry to support the natural gas grid would therefore be a shortsighted approach to securing overall energy system reliability.³⁷

³⁵ The natural gas industry delivers important energy on peak days when consumers need it most. This winter, the United States set an all-time high for demand on the system. On January 1, 2018, US natural gas consumption topped 147 Bcf, according to data from S&P Global. These volumes include natural gas delivered to all sectors and include exports and pipeline fuel. For the residential and commercial sectors combined, the natural gas industry delivered approximately 79 Bcf, primarily to meet heating needs. These volumes represent a tremendous amount of energy. 79 Bcf of natural gas is energy equivalent to nearly 24 terawatt-hours of generated electricity or the same amount of energy that 1,000 gigawatts of electric capacity, similar to the size of the entire US electric grid, could produce over 24 hours. (The EIA reports 1,074 gigawatts of net summer capacity available for the United States in 2016.)

³⁶ U.S. Energy Information Administration, Annual Energy Outlook 2018 with projections to 2050 at p 70 (Feb. 6, 2018) <https://www.eia.gov/outlooks/aeo/pdf/AEO2018.pdf>.

³⁷ PJM’s recent evaluation found that a generation fleet fueled exclusively or predominately by natural gas would be more reliable than even the more diverse portfolio that exists today. See “PJM’s Evolving Resource Mix and System Reliability PJM Interconnection” dated March 30, 2017, at 29. (“When coal and nuclear units were retired and replaced [under the study assumptions], portfolios with the highest composite reliability indices tended to be

C. A Collaborative Approach Should Be Pursued First

Earlier this decade, PJM had a task force in which it met with gas industry representatives on a periodic basis. AGA members have a shared interest with generators and electric grid operators to make sure that pipelines operate reliably and that points of common failure are minimized. Certainly, when talking about resilience, it is the cooperation of AGA, its members, and the Natural Gas Council with NERC³⁸ that should be most helpful in meeting those goals. Gas industry members are willing to meet openly with RTOs in a planning capacity to share non-confidential information. That cooperation would be more constructive than a requirement to share confidential non-public market information. And, most importantly, it can proceed without creating a market or informational preference for one set of parties over another.

In the meantime, AGA would support the following actions that would increase resilience of the energy infrastructure. First, AGA recommends that the Commission encourage PJM and other gas and electric operating entities in the PJM footprint to work together in an effort to discuss issues related to critical gas system components as provided for in the recently approved NERC reliability guideline for electric-driven compression. This guideline was developed to help ensure that natural gas transmission lines remain as reliable and resilient as possible, despite their increased reliance on electric power to drive key infrastructure components including compressors, storage facilities, and processing plants. As part of the “Reliability Guideline: Gas and Electrical Operational Coordination Considerations” approved by the NERC Operating Committee on December 13, 2017, that committee stated parties should identify critical gas system components in this manner:

ones in which natural gas is the predominant replacement resource. This is because natural gas provides a broad range of the generator reliability attributes.”)

³⁸ See Natural Gas Systems: Reliable & Resilient, issued July 2017 by the Natural Gas Council.

It is essential [that] gas and electric operating entities coordinate to ensure that critical natural gas pipelines, compressor stations, LNG, storage, natural gas processing plants, and other critical gas system components should not be subject to electric utility load shedding in general but more specifically Under Frequency and or Manual Load shedding programs.³⁹

And the NERC Committee further found that:

entities should try to ensure critical gas sector infrastructure is not located on electrical circuits that are subject to the load shedding described above. Electric operators should establish contact with the gas companies operating within its jurisdiction to compile a list of critical gas and other fuel facilities which are dependent upon electric service for operations. This list should also consider the availability of backup generation at critical gas facilities. Once the list is compiled, a comprehensive review of load shedding procedures/schemas/circuits should be done to verify that critical infrastructure is not connected to or located on any of those predefined circuits. This review should be considered for evaluation at least annually. The best practice in this area is to try and ensure that these facilities are not included in the initial under frequency or manual load shedding protocols at the outset.⁴⁰

AGA believes that discussions regarding NERC's guidelines would be a helpful first step in further coordinating communication between the natural gas and electric industries.

Second, AGA recommends that, where appropriate, interstate pipelines be encouraged to discuss with their shippers the potential for the installation of stand-by compression – such as in critical market areas serving firm markets. This is a step that was taken by the parties to the Columbia Gas Transmission Company modernization settlement.⁴¹

³⁹ North American Electric Reliability Corporation, Reliability Guideline: Gas and Electrical Operational Coordination Considerations at p. 4 (approved by the Operating Committee on December 13, 2017) https://www.nerc.com/comm/OC_Reliability_Guidelines_DL/Gas_and_Electrical_Operational_Coordination_Considerations_20171213.pdf.

⁴⁰ *Id.* at 4.

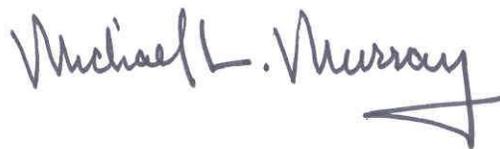
⁴¹ Columbia Gas Transmission, LLC, 142 FERC ¶ 61,062 (January 24, 2013) (order approving contested settlement in Docket No. RP12-1021-000). It has proven non-controversial and has been used successfully.

Finally, with respect to reliability and resilience of the generation supply chain, AGA recommends that the Commission consider modifying posting and bidding requirements for capacity releases. The secondary market in many regions is dominated by delivered commodity sales which are already effectively deregulated. Parties that hold capacity would be better able to direct gas supply to customers in need quickly if they could enter into pre-arranged transactions at the maximum tariff rate without having those transactions subject to the posting and bidding requirements.

V. CONCLUSION

Wherefore, for the reasons stated above, the American Gas Association respectfully requests that the Commission consider these comments in this proceeding. In the end, the Commission must ensure that its policy solutions are not implemented at the expense of the reliable and resilient functioning of either the wholesale electricity markets or the natural gas industry.

Respectfully submitted,

A handwritten signature in blue ink that reads "Michael L. Murray". The signature is written in a cursive style with a large, stylized initial "M" and a long horizontal stroke at the end.

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May 9, 2018