Remarks of Patricia Jagtiani on behalf of the Natural Gas Supply Association
Reliability Technical Conference, Docket No. AD23-9-000
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I want to thank the Commissioners and the staff organizers for giving me this opportunity to speak on behalf of the Natural Gas Supply Association (NGSA) at this year's Reliability Technical Conference at the Federal Energy Regulatory Commission.[1]

With the power sector comprising 40% of natural gas consumption, it is important to NGSA's members to ensure that we have products and services readily available to meet the gas supply needs of our power customers; thereby doing our part to help support grid reliability. As was highlighted by staff at the Commission's September meeting, policymakers and stakeholders have been grappling with gas-electric coordination issues for more than a decade and, while progress has been made in some areas, such as increased information sharing by pipelines with regional operators and closing the gap between the Timely Cycle and dispatch times, there is still much room for improvement.

In today's remarks, I would like to provide some insights from the gas producer/marketer perspective in terms of the primary challenges that should be prioritized to break the existing logjam. I encourage you to consider the solutions proposed by the Reliability Alliance, which is a gas-electric collaborative effort between the Electric Power Supply Association (EPSA), the Interstate Natural Gas Association of America (INGAA), and NGSA. These solutions were crafted after months of direct dialogue among member company representatives from pipeline companies, gas producers, and our power customers. While there is no simple solution to addressing these challenges, we believe substantial improvements are possible if we focus on the key issues and work constructively together to uncover solutions.

Documenting Root Causes of Real-life Challenges Should Set Regulatory Priorities
Past efforts to break the gas-electric coordination logjam may not have been successful because they tended to focus on issues that were not central to resolving the underlying challenges. Prior efforts typically focused on NAESB nomination schedules, the no-bump rule and changing the start of the Gas Day, which merely nipped around the edges of the central issues. In those past instances, it is likely that we prematurely jumped into working potential solutions before documenting if those were the true core stumbling blocks hindering a generator's ability to secure gas.

[1] NGSA represents integrated and independent companies that supply natural gas. Founded in 1965, NGSA is the only national trade association that focuses on producer-marketer issues related to the downstream natural gas industry. NGSA advocates for well-functioning markets that foster a growing, competitive market for natural gas. NGSA is dedicated to achieving a cleaner future through strong partnerships with renewables and supporting innovative technologies and market solutions that reduce emissions.

Fortunately, with considerable time and attention spent by stakeholders participating in the NAESB Forum, data gleaned from both the FERC-NERC and PJM reports on Winter Storm Elliott, and in-person talks with our power customers about their actual experiences, the central challenges are emerging with more clarity. As we move forward, we hope FERC and NERC will convene similar roundtable sessions with a manageable number of relevant stakeholders to allow for frank dialogue and a healthy exchange on potential solutions.[2]

Prior to such roundtable sessions, it is important that we all have a better line of sight into the root causes underlying the outages attributable to natural gas in the FERC/NERC report. If we fully explore the individual elements within the broad category called "fuel issues," there will be no reason for conjecture about our priorities for addressing gas-electric coordination. Similar to Recommendation 2 in the FERC-NERC report's presentation, which calls for a technical review of the individual causes of the generator mechanical/electrical outages to be conducted by either an independent subject-matter expert group, we believe that this review should not exclude fuel, which was the third main cause of outages.[3]

Drilling down into those root causes presents a rare opportunity to allow the facts to drive priorities. We have seen some assessments and reports over the past year that assume "fuel issues" equate to physical reliability issues experienced in the natural gas industry. Yet, as the FERC-NERC staff pointed out, this category includes "the combined effects of decreased natural gas production, cold weather impacts and mechanical issues at processing and pipeline facilities, the specific terms and conditions of natural gas commodity and pipeline transportation contracts, market issues, and other issues like low natural gas pipeline pressure."[4]

In addition to the factors mentioned by FERC staff, a generator's gas availability issues may reflect price considerations, how far in advance a generator was able to procure gas, and dynamics that become increasingly prevalent when an operator unexpectedly calls on a generator in the Real-Time Market in the midst of an extreme winter event. These dynamics include but are not limited to the inability to secure pipeline transportation and conforming to

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[2] Such a manageably sized roundtable would be in stark contrast to the NAESB Forum that encompassed over 700 stakeholders and press, necessitating the need for formal position statements as the primary mode of communication instead of consensus building and constructive dialogue among industry participants to explore solutions.

[3] See Slide 17 of September 21, 2023 presentation, "December 2022 Winter Storm Elliott Grid Operations: Key Findings and Recommendations."

[4] To date, although production declines during Winter Storm Elliott exacerbated the availability of gas, NGSA has not seen an assessment that specifically details the percentage of these outages directly associated with production shortfalls (e.g., outages due to gas sellers that were unable to serve generators that had firm sales agreements and had confirmed pipelines transport). EIA issued a report that stated that a new one-day historical demand record was set on December 23, 2022, which was met with the help of storage and Canadian imports. See EIA https://www.eia.gov/naturalgas/weekly/archivenew_ngwu/2023/01_19/.

the FERC-approved NAESB cycle delivery times and abiding by pipeline tariff provisions on ratable takes.[5]

New Insights from Winter Storms Uri and Elliott

Industry discussions and more detailed analysis by FERC and NERC as well as PJM of the past two winter storms (Uri and Elliott) have provided some key insights about how, when, and why most gas-electric issues arise.

- ***Most gas availability issues happen during the Real-Time Market***. PJM's analysis on Winter Storm Elliott showed that on the peak day of outages, nearly 90% of all gas generator outages attributed to the availability of natural gas occurred when generators were called to run in the Real-Time Market – with only 3% of total system outages occurring when gas generators were dispatched in the Day-Ahead market.[6] This illustrates the importance of planning in advance for both gas supply and pipeline transportation during a critical period. It also underscores that one of the most impactful actions to help gas-electric coordination involves crafting market-based solutions that promote advance purchases as well as reviewing current fuel cost policies in organized electric markets.

- ***For now, this is a "few days a year" problem***. On its face, it sounds beneficial that there are only a limited number of days per year in which gas generators have major challenges in their ability to procure gas. In fact, often the peak needs occur for a limited block of hours within those limited number of days. Yet, these handful of hours or days occur during the most critical periods in which operators need gas generators to be available to support reliable operations. Also, the short duration of days (at least for now) makes it extremely challenging for generators operating in competitive markets to invest in solutions like firm pipeline capacity, storage, LNG, enhanced flexible services, or backup fuel oil, all of which come with a relatively high price tag when allocated over a limited number of days.[7] Is it economically prudent for a generator to sign up for a flexible pipeline service, e.g. when that service is provided at no additional charge most days of the year. Do potential economic and other damages related to power outages offset the cost of investing in these potential solutions? Ultimately, it is up to power market participants, regional operators, FERC, and NERC to decide what level of

[5] When called to run in real time, even generator shippers that have firm supply or transport contracts will have difficulties meeting operator short start times that assume pipeline flexibility and hence, unit failure will be categorized as a forced outage.

[6] See attached NGSA paper "An Analysis of PJM's Winter Storm Elliott Report: Key Insights and New Priorities" or the following link: https://www.ngsa.org/wp-content/uploads/sites/3/2023/09/An-Analysis-of-PJMs-Winter-Storm-Elliott-Report.pdf.

[7] Also, the number of days for which there is limited flexibility are likely to grow as gas generators are increasingly called upon to support intermittent resources and will require pipeline capacity to provide for those new usage patterns.

investment and risk is acceptable to ensure grid reliability during these limited, yet critical, few days a year.[8]

- ***Pipelines routinely provide flexibility outside the tariff***. While Commission-approved pipeline tariffs typically include ratable take provisions and reference the NAESB nomination cycles for gas delivery times, pipeline companies routinely allow its customers, including gas generators, to go beyond what is permitted by the tariff when they have the operational capability to provide this flexibility on a non-discriminatory best-efforts basis. In fact, pipeline accommodations outside of the tariff provisions have become so common place that operating parameters in the Real-Time Market incorporate start times that assume this flexibility will always be available. However, during tight winter market conditions when pipeline shippers with firm capacity rights are fully using their pipeline capacity, these assumed off-tariff expectations cannot be met, which puts gas generators in a very precarious situation when faced with their commitments to the ISO or RTO.[9] While additional communication and data from the gas industry may be helpful to assess the risk a generator faces during these instances of limited pipeline flexibility and gas supply availability, no level of data can adequately substitute for mitigating these risks. Some improvements in this area are already underway to allow generators to update their operating parameters in real time to reflect limited pipeline flexibility. However, relying on the assumption that pipelines can continue to provide best-efforts flexibility regularly and reliably is not a sustainable path for maintaining grid reliability over the long-term.

- ***Competitive power market rules were crafted after an extensive pipeline network was already in place***. While this may not seem all that insightful, it is important to understand why certain challenges exist and what created the current dynamics from an historical perspective. For many years, organized markets operated reliably with little need to consider how power market rules could support natural gas infrastructure investment because generators generally could rely on subscribed but not fully utilized capacity originally developed and contractually supported by foundation shippers like producers, LDCs and industrials. Consequently, regional organized power markets do not generally have market designs that support such long-term investment. As the power market has modified its gas usage during winter peaks and pipeline capacity has become more difficult to expand, gas generators are now competing with LDCs and others for limited gas pipeline capacity, particularly during winter peak periods. As the collective need for new pipeline capacity to support reliability and more flexibility

[8] Pipeline capacity provides the backbone that supports the ability of gas generators to reliably receive their purchased gas and the flexibility they may require on a day-to-day basis. However, it is important to note that there is a distinction between natural gas system reliability (the existing physical system to perform) and reliability impacts associated with insufficient pipeline capacity.

[9] Additionally, since these off-tariff capabilities are provided at no additional cost, it is challenging for generators to justify signing up for pipeline or marketer products and services that provide these capabilities.

grows, new market-based approaches may need to be considered to support long-term investment in natural gas pipeline or storage infrastructure.[10]

- ***A diverse portfolio of assets, especially storage, is essential during critical events***. The past two winter storms (Uri and Elliott) have shown that storage plays a significant role in helping natural gas users meet their needs during extreme events, which is how natural gas storage is intended to be used. Having a diverse set of assets and supplier options mitigates the overall risk that a customer may face during extreme weather by allowing a gas customer to create its own "reserve margin." LDCs have successfully employed this strategy for decades to ensure reliability during peak demand periods and this solution, when possible, would greatly assist in supporting electric reliability as well if market-based approaches in organized power markets could be crafted that encourage storage investment.

Many of the challenges outlined above are detailed in the consensus Reliability Alliance document filed by EPSA, INGAA and NGSA in this docket, which also suggests a number of solutions and market-based options that would increase generator certainty of dispatch times and recovery of fuel costs so that they are more confident to make their fuel arrangements in advance of severe winter conditions. Moreover, eight of the NAESB Forum co-chair recommendations are closely aligned with the recommendations offered by the Reliability Alliance.[11]

Gas Producer and Marketer Preparations for Winter

U.S. natural gas production for this coming winter is expected to average 101.7 Bcf/d, slightly up from the previous winter. Our nation's supply comes from over a half million gas wells, with 90% of these wells located in eight states.[12] About 9,000 independent producers are responsible for 90% of this nation's natural gas production and develop 91% of these wells.[13] NGSA represents many of the larger producers with most of NGSA's members also operating as marketers for both their own production and the production of others.

The bulk of NGSA member company-operated assets were able to maintain production through Winter Storm Elliott with minimal impacts to production, but the majority of that production is located outside of Marcellus and Utica. As the FERC-NERC presentation shows, there were

[10] Today's regulatory and market paradigm requires that parties demonstrate need for new pipeline capacity, which also entails demonstrating that a project is economically viable in order to secure capital financing.

[11] The NAESB Forum co-chair recommendations that request further consideration of similar topics raised by the Reliability Alliance include Recommendations 5, 8, 9, 13, 17, 18, 19 and 20. NGSA supported the vast majority of the NAESB recommendations as issues that may be worthy of further exploration although we had hoped priority challenges would have first been identified to allow for regulators and stakeholders to have a sense of the actions that are of most consequence to act upon and of the most value . FERC and NERC's direction to hold a Forum was valuable in bringing gas-electric issues to the forefront and helped to precipitate industry discussion.

[12] A third of wells are in Texas (120,000) and Oklahoma (40,000), another third in Pennsylvania (70,000), West Virginia (50,000) and Ohio (30,000) and another third in the West (Wyoming, Arizona, and Colorado). See https://www.eia.gov/dnav/ng/ng_prod_wells_s1_a.htm.

[13] See https://www.ipaa.org/independent-producers/.

substantial declines in production during Winter Storm Elliott with a 16% decline nationally; there was a more significant decline in Appalachia, with Marcellus and Utica declining by 26% on its peak day.[14] Certainly, production shortfalls created a tighter market for natural gas in real time and created a need for customers to rely on their storage capabilities to supplement flowing gas as the industry worked to meet an all-time record demand day.[15]

The FERC-NERC report on Winter Storm Elliott found that, "[t]he major causes of the decline in natural gas production were due to wellhead freeze-offs and other equipment freezing, as well as poor road conditions (due to effects of the winter storm/cold weather) that prevented the removal of fluids from production sites or access to facilities to make necessary repairs." Unpassable roads and power loss are both factors outside of the direct control of a producer, although there are actions that can be taken to make road-clearing a priority and to designate gas facilities as critical to protect them from power loss. In addition to road conditions and power loss, rapid drops in temperatures can also limit a producer's ability to carry out intended preparedness actions prior to a storm, especially in remote areas.

Because of the distinct characteristics that influence winter preparedness actions, there is no one-size-fits-all approach to winterization that works across all production. Safety, environmental, and economic considerations strongly influence winterization actions. Additionally, there are a host of other factors that influence weatherization decisions and methods, which reflect the unique characteristics of each facility such as: location/remoteness, topography, historical and anticipated weather data and patterns for the region, facility type, the facility's critical components and configuration, the actual and expected volumes produced, age of the facility and expected decline rates/life of the well. Prevailing climate and weather differences among producing regions and local demand patterns impact weatherization approaches as well, primarily as a matter of physics. There is no single form of weatherization that works for both extreme hot and cold environments.

After surveying NGSA members that hold onshore production, we thought it would be helpful to give the Commission some insights regarding what our onshore producer members are already doing today. NGSA's members have strong winterization continuity programs in place that provide guidance for operations at all upstream facility types during winter events. These plans help to mitigate impacts and assist in corporate-wide understanding of actions that will be taken during extreme weather events, including the strategic staging, deployment of resources and communication protocols. Members tend to have two levels of evaluation including centralized, standardized approaches as well as asset-specific action plans that are tailored to resource-specific unique characteristics. Each individual company has its own individual processes, which include its own sophisticated tracking systems, checklists, training,

[14] The FERC-NERC report separated Marcellus and Utica for its analysis, but we do not see a basis for distinguishing between the two given that they overlay the same surface area and are often drilled from the same well pads with Utica representing only about a quarter of the total volumes for that region. These plays are only distinguished by the actual depth of drilling.

[15] See https://www.eia.gov/naturalgas/weekly/archivenew_ngwu/2023/01_19/.

and preparedness programs designed to regularly test, evaluate, prepare, and improve their ability to withstand cold weather conditions.

NGSA members regularly take actions to recalibrate weatherization practices from the lessons learned during prior events and data assessments. Data is gathered through tracking systems that track failures and performance as well as through conducting root cause assessments for individual assets. Based on the results of these performance assessments, the most appropriate corrective measures are considered for that asset as well as for similar assets.

While continuation of production at each site is a priority, producers will not risk the health and safety of employees. As an example, iced-over roads prevented most industry response during Uri. In anticipation of winter events, personnel and contractors are often staged and deployed to areas of the field when possible so that they can be closer to potential problems and avoid road travel. In addition to the deployment of field staff, our members have traders and schedulers actively working around the clock to ensure responsiveness to customers requests.[16]

Conclusion

In sum, NGSA has been and will continue to be an active participant in the gas-electric arena to ensure member companies are able to provide reliable services and products to our power customers as well as the other 60% of the gas market, who sometimes feel forgotten in this conversation. We hope that the Commission will seriously consider the Reliability Alliance consensus that provides what we believe are effective solutions to real life challenges. In stark contrast to what some may believe, this is not an "us against them" situation, but one that requires solutions based on the facts and actual challenges faced by gas generators. Working constructively together to develop specific solutions through a direct exchange of ideas is how we will make the most meaningful improvements to support grid reliability now and as we transition to a new energy mix.

Respectfully Submitted,

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[16] There is a clear distinction between low levels of liquidity on weekends (when most gas has been sold in advance in the market) and the ability to transact on weekends and holidays. ICE has single day bid options and pipelines operate under the NAESB nomination cycles seven days a week. NGSA members are responsive in real time to buyers during these periods, with an average of 16 traders and 12 schedulers on call during weekends and holidays.