UNITED STATES OF AMERICA BEFORE
THE
FEDERAL ENERGY REGULATORY COMMISSION

Grid Resilience in	**)**	
Regional Transmission Organizations and	**)**	**AD18-7-000**
Independent System Operators	**)**	

COMMENTS OF THE ORGANIZATION OF MISO STATES

The Organization of MISO States ("OMS") respectfully responds to comments filed by Regional Transmission Organizations ("RTOs") and Independent System Operators ("ISOs") in compliance with the Federal Energy Regulatory Commission's ("FERC" or "Commission") January 8, 2018 order initiating this proceeding and directing the RTOs/ISOs to submit information on the resilience of the bulk power system.[1] In particular, OMS responds to the comments filed by the Midcontinent Independent System Operator, Inc. ("MISO"),[2] PJM Interconnection, L.L.C. ("PJM"),[3] and the California Independent System Operator Corporation ("CAISO"). The OMS believes that grid resilience is currently, and correctly, addressed by the North American Electric Reliability Corporation ("NERC"), the Regional Reliability Entities,[4] the RTOs/ISOs, state regulatory commissions, utilities, municipalities, and cooperatives. The OMS appreciates the Commission's efforts to review the resilience of the bulk power system in the

[1] *Grid Resilience in Regional Transmission Organizations and Independent System Operators*, Docket No. AD18-7-000 (Jan. 8, 2018) ("Grid Resilience Order"). The OMS provides these reply comments pursuant to Ordering Paragraph A of the Grid Resilience Order.
[2] Comment of Midcontinent Independent System Operator, Inc., Docket No. AD18-17-000 (Mar. 7, 2018) ("MISO Comments").
[3] Initial Comments of PJM Interconnection, L.L.C., Docket No. AD18-17-000 (Mar. 9, 2018) ("PJM Comments").
[4] The Regional Reliability Entities are the Florida Reliability Coordinating Council, Midwest Reliability Organization, Northeast Power Coordinating Council, ReliabilityFirst, SERC Reliability Corporation, Southwest Power Pool, Inc., Texas Reliability Entity, and Western Electricity Coordinating Council.

portions of the country covered by RTOs/ISOs in a holistic manner, but respectfully submits that existing and ongoing initiatives by a number of actors are sufficient to ensure the long-term reliability and resilience of the grid.[5] The OMS encourages the Commission to continue to facilitate the important discussion of resilience as a concept by focusing on areas that are truly regional in nature, supporting ongoing efforts at NERC, and otherwise allow state and local regulators to continue their successful efforts to maintain the resilience and reliability of the electric grid.

I. Background

A. The OMS's Comments in Docket No. RM18-1

The OMS filed comments in Docket No. RM18-1, the preceding Notice of Proposed Rulemaking ("NOPR"), on October 23, 2017 ("OMS NOPR Comments").[6] In the NOPR Comments, the OMS recognized the primary drivers behind DOE's interest in evaluating resilience of the nation's electric grid as the nation's evolving fuel mix, coupled with the fact that not all resource attributes are specifically valued in RTO markets. The OMS explained that resilience, although not well-defined, is closely related to reliability. The OMS pointed out that the reliability of the bulk power system is currently maintained by a wide variety of actors, from the local to the federal level, spanning multiple agencies and industries.

[5] The Illinois Commerce Commission notes that if the Commission believes that fuel security is an attribute that should be encouraged to enhance reliability and resiliency, such an objective is best pursued through the Commission focusing first and foremost on the optimization of price formation in the energy and ancillary service markets, rather than by a disruptive, administratively-determined effort to re-regulate and bifurcate electricity markets. *See* Illinois Commerce Commission Comments in Docket No. RM18-1-000, filed on October 23, 2017, at 7.

[6] Comment of the Organization of MISO States, Docket No. RM18-1-000 (Oct. 23, 2017) ("OMS NOPR Comments").

The OMS NOPR Comments included the observation that the grid is reliable and resilient today, meaning the NOPR in its original form was unnecessary in MISO.[7] To support this point, OMS highlighted state and local, regional, and federal actions that were already underway at that time to ensure reliability and resilience.[8]

The comments included support for the Commission to continue the long-held practices of respecting regional differences and technology neutrality in market mechanisms. Specifically, the OMS highlighted "the MISO region is unique in that the majority of load is served by traditionally-regulated utilities under state and local jurisdiction where attributes of reliability and resilience are already considerations in resource planning and cost recovery decisions."[9] The comments went on to state that "the goals of this proposed rule are best achieved through technology neutral, market driven price formation policies."[10]

B. MISO Comments in Response to FERC's Grid Resilience Order

In its comments to the January 8, 2018 Order, MISO explained that it does not face "any imminent reliability or resilience issues."[11] In support of that assertion, MISO noted that it currently works with the states, MISO members, and its broader stakeholder community to promote grid resilience through the development of tools and processes, specific to MISO's regional needs, that are designed to "identify, assess and avoid resilience threats . . . [and] to mitigate any impacts that may occur from high-risk events."[12] As examples of its ongoing grid resilience-promoting efforts and initiatives, MISO lists: various transmission planning

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[7] OMS NOPR Comments; *see also*, Dep't of Energy, Office of Energy Policy and Systems Analysis, *Resilience of the U.S. Electricity System: A Multi-Hazard Perspective* (Aug. 2016), *available at*: https://energy.gov/sites/prod/files/2017/01/f34/Resilience%20of%20the%20U.S.%20Electricity%20System%20A%20Multi-Hazard%20Perspective.pdf.
[8] OMS NOPR comments at 8-14.
[9] *Id*. at 5.
[10] *Id*. at 19.
[11] MISO Comments at 7.
[12] *Id*. at 1.

processes; training sessions and preparation drills; Market Roadmap process; gas-electric coordination enhancements; reliability initiatives, including the Resource Availability and Need stakeholder group discussions; the recent Market System Enhancement, conducted to determine the system performance and security requirement needed for MISO's long-term needs, which resulted in cyber-security fortification and the development of new systems; and the ongoing MISO stakeholder proceedings regarding grid resilience.[13]

MISO suggested that the Commission could best help enhance grid resilience by: ensuring that the NERC Critical Infrastructure Protection ("CIP") mandatory reliability standards are flexible enough to enable electric industry adoption of superior new technology and best practices regarding information technologies to mitigate cyber-security risks; supporting additional dialogue regarding "effectively valuing resilience in transmission planning processes;" working in partnership with state regulators, to the extent the Commission is interested in addressing resilience at the distribution level; and considering enhancements to inter-regional operations processes to support grid resilience.[14]

Specifically, in relation to interregional processes, MISO points to its recent interregional transmission planning initiatives with PJM as "the model for seams operation."[15] MISO urges the Commission to continue to promote coordination across RTO seams where appropriate "to ensure that resources across the interconnection can be effectively leveraged to respond to unexpected events and disturbances on the system."[16]

Finally, MISO states that its understanding of resilience generally matches the

[13] *Id.* at 3-7.
[14] MISO Comments at 7-8.
[15] *Id.* at 45.
[16] *Id.*

Commission's proposed definition, but advocates expanding the definition to encompass the ability to adapt to changes in the region's power supply portfolio.[17]

C. CAISO's Comments in Response to FERC's Grid Resilience Order

Similar to MISO, CAISO urges the Commission to consider grid resilience in the context of the unique circumstances and conditions facing each region."[18] CAISO also argues that, as defined in the Grid Resilience Order, the concept of resilience appears to be very similar to the concept of reliability, noting that the order "does not address any potential overlap between resilience and reliability, clearly articulate the differences between the two, state why a new, wholly separate concept is needed, or indicate what specific requirements a resilient system must meet."[19] In discussing the Grid Resilience Order's use of the term "disruptive events," CAISO notes:

> Disruptive events can cause a contingency to occur on the grid. The NERC reliability standards define acceptable system performance in response to those contingencies. It is unclear whether the Commission intends that ISOs/RTOs must separately plan for both contingencies and disruptive events, or whether the two are interwoven.[20]

The CAISO argues that ***if*** the Commission decides to establish objective resilience standards and guidelines that are separate and distinct from the existing NERC reliability standards, the Commission should clearly articulate the differences between resilience and reliability.[21] CAISO suggests that such an exercise might require the consideration of objective criteria, metrics, and standards to first determine whether the existing grid is resilient, and incorporate the use of cost-benefit analyses, prudence assessments, and determinations regarding the ability of entities to finance resilience efforts.[22]

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[17] *Id.* at 10.

[18] CAISO Comments at 1; *see also*, *Id.* at 7-8.
[19] *Id.* at 10.
[20] *Id.* at 9.
[21] *Id.* at 10.
[22] *Id.* at 8.

D. PJM's Comments in Response to FERC's Grid Resilience Order

PJM's comments described the actions that PJM and its stakeholders have already taken, or are in the process of undertaking, to enhance grid resilience. PJM emphasizes that the PJM-operated portion of the bulk electric system "is safe and reliable today – it has been designed and is operated to meet all applicable reliability standards."[23] Despite this, PJM argues that more is needed, stating that "resilience actions are anchored in, but go beyond what is strictly required for compliance with, the existing reliability standards."[24] PJM asks the Commission to, among other things, finalize a definition for resilience and assert that jurisdiction over resilience *concepts* is included within FERC's existing statutory authority pursuant to section 215 of the Federal Power Act ("FPA").[25] PJM goes on to argue that resilience efforts will "require changes to transmission and infrastructure planning, operation rules, and market rules, as well as to recovery and restoration processes."[26] It alleges that all of these efforts implicate FERC-jurisdictional tariffs and rates, and as such, are within the Commission's existing authority to establish just and reasonable rates under the FPA.[27]

II. Comments

The OMS appreciates the Commission's direction to review the resilience of the grid in the portions of the country covered by RTOs/ISOs in a holistic manner. OMS was encouraged to see the Commission cite its own existing actions to address resilience,[28] even though those actions were not undertaken specifically in the name of "resilience." Similarly, the OMS NOPR Comments pointed out the many historical and ongoing actions by state and local regulators that

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23 PJM Comments at 4.
24 *Id*.
25 16 U.S.C. § 824o.
26 *Id.* at 11.
27 *Id*.
28 Grid Resilience Order at P 12.

enable and bolster resilience, although the regulators may not necessarily use that term to describe their actions.[29] The OMS believes that resilience is currently, and correctly, addressed by NERC, the Regional Reliability Entities, state regulatory commissions, municipalities, cooperatives, and utilities.

However, the need and manner by which to ensure resilience varies by region. The Commission recognized this variation in its order initiating Docket No. AD18-7 by specifically asking the RTOs/ISOs to assess resilience given their unique geographic needs. MISO and its stakeholders have recognized the same variation exists within its footprint, which is supported by the many parties involved in ensuring resilience. The OMS believes that MISO has been proactive in this area and does not have any additional, immediate needs to address resilience in its footprint. That said, MISO should continue to focus on regional issues, and state and local agencies should continue to be vigilant of their unique local circumstances, being mindful of how they may impact the region as a whole.

While ensuring a resilient power system requires resilience of all components of the system, it cannot be overstated that electricity outages overwhelmingly result from disruptions in the distribution systems (over 90 percent of electric power interruptions)[30] both in terms of duration and frequency of outages, which are largely due to weather. If power system resilience issues do arise in the future, they are likely to originate within the state and local jurisdictional distribution systems, where state and local regulators, with a focus on resilience (and reliability) for customers, already have a number of activities underway to address potential concerns. Additionally, state and local responsibilities include resilience-focused activities such as resource planning, assessment of disruptions, and emergency management. State and local regulators are

[29] OMS NOPR Comments at 8-10.
[30] Department of Energy, Quadrennial Energy Review, Second Installment at 4-2 (2017).

also responsible for assessing the cost of jurisdictional resilience measures and ensuring that customers receive corresponding value. Efforts to ensure resilience in the MISO footprint must continue to be undertaken in partnership with all stakeholders, including state and local regulators.

A. The OMS Agrees That MISO's Current Initiatives Are Sufficient to Address Grid Resilience.

The OMS agrees with MISO's explanation that, due in part to MISO's existing, ongoing initiatives and efforts, there are no immediate or imminent resilience concerns in the MISO region. In its filing, MISO described the list of activities and actors that have been providing resilience within its footprint for decades. OMS members and the utilities they regulate are the key actors enabling that resilience. The OMS agrees with MISO's characterization that resilience has been maintained through both cooperative and independent actions by these actors. Further, the OMS is a frequent participant in the processes that have produced the initiatives that MISO cited in its filing.

The participation of state and local regulators in MISO's efforts to evolve its markets and planning processes provides for a sophisticated level of coordination that is extremely important in efforts to maintain reliability and resilience. State and local regulators are able to provide important insight into considerations that are important for other parties involved in ensuring resilience at the state and local level.

In addition, it is clear to the OMS that the appropriate processes are already in place to identify and adapt to the evolution of the industry and perceived threats to resilience. All of the initiatives that have been undertaken at the MISO-level have occurred through existing channels and did not require extraordinary procedures to enable their development, which is why the OMS disagrees with MISO's suggested modification to the proposed definition of resilience as discussed below.

B. The OMS is Only Supportive of Resilience as a Concept

1. OMS Generally Agrees with FERC's Definition of Resilience.

The OMS generally agrees with the Grid Resilience definition put forward by the Commission as a *qualitative concept*. However, while the industry-wide discussion of resilience is beneficial, there is no need for FERC to impose additional rules or standards specifically to address resilience on the RTOs and ISOs, or to codify the definition of resilience in new regulations.

The OMS identifies the main differentiator between resilience and reliability as the frequency and magnitude of the event. NERC mandatory reliability standards are put in place to address potentially-frequent, well-known issues. For example, reliability standards contemplate the loss of a generator or a transmission line while discussions of resilience tend to focus on more catastrophic events such as the loss of an interstate natural gas pipeline or the loss of major portions of the distribution system. Resilience deals with the high-impact low frequency events that are less well-defined and predictable.

Resilience is a system-wide issue that involves all levels of the electric grid and regulatory structure with the majority of relevant decision makers on the state and local level, and as such, specific standards for resilience may not be needed at the FERC level. The OMS notes that utilities and their regulators have long been addressing resilience through normal processes (e.g., fuel diversity considerations in resource planning, service quality monitoring, resource technology mix, investing in distribution systems, and transmission planning), as well as through recent actions (e.g., grid modernization, state energy assurance, and cybersecurity efforts). These actions occur because state and local regulators are charged with maintaining reliable electric service to all customers at reasonable rates, and as challenges to carrying out this task manifest themselves, action is taken. The complex interplay between all these actors is best-suited to address resilience

in a way that takes regional and local differences into account.

2. The OMS Agrees with CAISO's Point Regarding the Interconnected Nature of Reliability and Resilience.

The OMS agrees with CAISO's assessment that the Commission's consideration of grid resiliency appears to be inextricably related to reliability rather than a wholly distinct concept.[31] The OMS also supports the CAISO's statements regarding the need to consider issues of reliability and resilience in the context of the unique circumstances and conditions facing each region."[32] The CAISO's point about the existing NERC reliability standards' ability to address resilience issues is also well-taken:

> Many reliability standards address, in some manner, acceptable bulk electric system performance, and the system's ability to withstand or recover from disruptive events including the capability to anticipate, absorb, adapt to, and/or rapidly recover from such an event.[33]

To the extent that the CAISO's comments support the development of objective resilience standards and guidelines that are separate and distinct from the existing NERC reliability standards, the OMS disagrees. Grid resilience is appropriately addressed by NERC and concurrent, ongoing RTO/ISO initiatives undertaken in concert with the states and other stakeholders.

3. The OMS is Concerned by PJM's Push for Changes to RTO/ISO Planning, Markets, and Operations in the Name of Resilience.

PJM's comments are premised on the idea that the existing framework for addressing reliability and resilience issues is inadequate; the OMS disagrees. Specifically, the OMS disagrees with both PJM's suggestion that the Commission should undertake broad measures to require changes (in the name of resilience) to planning, markets and operations within an RTO/ISO. PJM's suggestion that the Commission exert jurisdiction over all aspects of grid resilience would likely

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[31] CAISO Comments at 16.
[32] CAISO Comments at 1; *see also, Id.* at 7-8.
[33] *Id.* at 9.

undermine the Commission's policies regarding the importance of maintaining regional variability.

The Commission has already found that grid resilience touches on a wide variety of issues, many of which are under state and local jurisdiction.[34] The Commission should continue its policy of avoiding overly broad solutions and distinguishing between concerns and solutions that implicate the Commission's expertise and those that are truly regional in nature.

4. The OMS Does Not Support MISO's Proposal to Expand the Definition of Resilience.

The OMS generally supports MISO's comments, but disagrees with MISO's suggestion to add "evolving fuel mix" to the definition of resilience.[35] Generation resource mix issues should continue to be considered as part of the broader discussion between MISO and its stakeholders (e.g., discussions surrounding the OMS-MISO Resource Adequacy Survey) but not as part of an effort to define resilience or create metrics for assessing it at the federal level. Including fuel mix metrics in any formal FERC definition of grid resilience could conflict with the division of federal and state jurisdiction established by the FPA[36] and impinge on states' traditional authority over electric generation facilities, decisions regarding resource adequacy, the best generation mix for their states, and the appropriate costs to be recovered from retail ratepayers.

MISO and its stakeholders already have the ability to address any concerns related to the evolving fuel mix for the region's power generation; there is no need for an expanded federal role. MISO has been, and continues to be, proactive with its markets to help alleviate resiliency threats

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[34] Grid Resilience Order at P 19, n.31 ("We also note that concept of resilience necessarily involves issues, topics, and questions that extend beyond the Commission's jurisdiction, such as distribution system reliability and modernization.").

[35] MISO Comments at 3 ("MISO views resilience beyond just the ability to respond to events, but also the ability to assess and respond to changes in the nature of "events" that are the result of the transformative industry changes in fuel economics, environmental regulations, technology, customer preferences and State policies.").

[36] 16 U.S.C. §§ 824(b)(1) and 824o(i)(3).

that could be caused by changes in the fuel mix. Examples include: the "ramp product," emergency pricing modifications, and the use of Dispatchable Intermittent Resources. MISO also has plans to help mitigate risks to resilience through improvements to its Automatic Generation Control and Resource Availability and Need assessment. In addition to these market mechanisms, MISO's transmission planning process is very robust, with sub-regional planning meetings that can actively address more local needs.

Moreover, the OMS identifies the primary threats to grid resilience as coming from disruptions to the delivery of electricity, not to the generation thereof. State and local regulators regularly participate in regional and state emergency management drills and risk assessments that help to mitigate resilience threats. State and local regulators are also included in the spring and fall drills performed by MISO. Risk assessments include identifying critical infrastructure and key resources, assessing the threats and vulnerabilities of those assets, and evaluating the consequences of losing a vulnerable asset. The resulting risk management strategies can help consider the numerous priorities and resources available to reduce identified resilience risks.[37] All of these practices will continue, incorporating any impacts caused by the changing resource fleet.

Focus should continue to be on limiting disruptions of service caused by the distribution system, and to a lesser extent the transmission system. This is especially important given the geographic size and predominantly rural nature of the MISO footprint. These two characteristics lend themselves to a large number of total miles of transmission and distribution lines per customer, which can render the economics of enabling resilience through redundancy expensive. MISO's current planning processes, and the existing and ongoing drills and risk assessments

[37] *See, e.g.*, http://www.michigan.gov/documents/cybersecurity/120815_Michigan_Cyber_Disruption_Response_Plan_Online_Version_003_544764_7.pdf.

undertaken in concert with state and local regulators, are effective protective measures to ensure the reliability and resilience of the MISO-operated bulk power system.

C. Effective Interregional Coordination Does Not Require Standardization or Uniformity of Processes Across RTO/ISO Seams with Neighboring Regions.

The OMS agrees with MISO's general point that good interregional coordination between RTOs/ISOs and their neighboring regions can enhance reliability and grid resilience.[38] However, the OMS is concerned that MISO's statement that its recent interregional transmission planning initiatives with PJM are "the model for seams operation"[39] could suggest that the MISO-PJM inter-regional planning process could, or should, be replicated wholesale at other MISO seams or seams between other RTOs/ISOs and neighboring regions. The OMS supports developing seams solutions using consistent principles whenever possible; however, a crucial component of respecting regional differences is respecting different methods of interaction across the various RTO/ISO seams.

The OMS notes that while the MISO-PJM interregional planning process may be effective and appropriate for the MISO-PJM seam, effective interregional coordination does not require, and should not seek to impose, standardization in planning criteria, procedures, and cost allocation rules across all of MISO's seams. The MISO region is large and diverse, has multiple seams partners with very different planning processes, and sits in the middle of the Eastern Interconnection. For example, the MISO-SERTP seam is significantly different from the MISO-PJM and the MISO-SPP seams. It is difficult to see how MISO's suggestion that tools that "support more frequent and flexible congestion management tools" are needed to "promote more resilient grid operations"

[38] MISO Comments at 45 ("MISO encourages the Commission to continue to promote advancements in seams coordination to ensure that resources across the interconnection can be effectively leveraged to respond to unexpected events and disturbances on the system.").
[39] *Id*.

at a seam where only one side has an organized market. While the OMS supports the use of consistent principles and application of rules across all MISO seams, there is no need to develop uniform rules to govern the treatment of resources and transmission planning across the seams. Rather than seeking to standardize processes across all MISO seams, MISO and its stakeholders should continue focusing on reliability and resilience initiatives that are targeted to the specific circumstances of each individual seam.

D. Resilience Issues Will Continue to Be Addressed by NERC, in the RTO Stakeholder Process, and at State and Local Levels.

1. NERC is Best Equipped to Address Overall Grid Resilience.

Existing NERC processes allow for an identification of specific issues that require action. The standard development process can be utilized to thoroughly vet reliability issues that may threaten resilience without the creation of resilience-specific standards. Furthermore, since NERC is the home of Bulk Power System reliability standards, it is in the best position to understand the inter-related nature of reliability and resilience.

The recent efforts of NERC related to Essential Reliability Services ("ERS") are an example of how the agency is already addressing many important components of resilience through its existing processes. The RTOs have shown they are able to take the important findings from NERC related to ERS and incorporate them into market mechanisms or planning processes where appropriate for their region.

2. FERC Should Avoid Duplicative and Possibly Conflicting Efforts.

If FERC attempts to impose additional requirements for resilience, the effort is likely to be duplicative, adding inefficiency to the system. As described in earlier sections, given the large number of actions that are already underway and the large number of parties involved in those actions, additional requirements from the Commission would at the very least overlap some of

these existing actions and possibly even disrupt proven processes that have been used to ensure reliability and resilience in the past.

The activities of state and local regulators, utilities, and other local agencies should continue to rely on existing channels for coordination up to the state, regional, and federal levels. Plenty of channels for coordination exist today to enable bottom-up coordination that supports resilience. Any action from the federal level must first clearly identify these channels, assess potential gaps, and be aware of how further action could disrupt ongoing coordination.

III. Conclusion

For the reasons stated above, the OMS urges the Commission to recognize that regional differences limit the need for further FERC action on resilience, especially in the MISO footprint. The OMS agrees with MISO that current initiatives and existing processes are sufficient to ensure resilience now and into the foreseeable future, and a strict definition and associated standards for resilience are unnecessary. Further, the OMS agrees with commenters who have recognized the close relationship between resilience and reliability and supports continued use of existing NERC processes to quantify and address specific reliability issues. Lastly, the OMS does not support expansion of either the definition of resilience or the Commission's jurisdiction as proposed by PJM.

The OMS files these comments because a majority of its members are in support. The North Dakota Public Service Commission does not join these comments.[40] The Indiana Utility Regulatory Commission abstains. The Manitoba Public Utilities Board did not participate in the vote.

[40] NDPSC reiterates its comments filed October 23, 2017 in Docket RM18-1. NDPSC remains concerned whether the premature retirement of coal and nuclear baseload generation for economic reasons is jeopardizing the resilience of frequency response from system inertia provided by large baseload thermal generators.

Respectfully Submitted,

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