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Via Overnight and Electronic Delivery

June 19, 2018

The Honorable Fred Upton, Chairman
Committee on Energy and Commerce
Subcommittee on Energy
2125 Rayburn House Office Building
Washington, D.C. 20515-6115

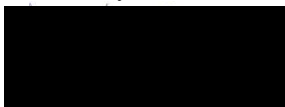
Dear Chairman Upton:

Thank you for the opportunity to appear before the Subcommittee on Energy on Thursday, May 10, 2018 to testify at the hearing entitled "Examining the State of Electric Transmission Infrastructure: Investment, Planning, Construction and Alternatives."

Pursuant to your letter of June 5, 2018, containing additional questions for the record submitted by Members following the hearing, attached please find my responses to those questions.

Please do not hesitate to contact me should you have any questions regarding the attached responses to the additional questions for the record. You may also contact Kurt Bilas, MISO's executive director of government relations, in our Washington, D.C. office, at (202) 309-3550, or kbilas@misoenergy.org.

Sincerely,



Jennifer Curran
Vice President, System Planning
Midcontinent ISO

cc: The Honorable Bobby L. Rush, Ranking Member, Subcommittee on Energy
Ms. Kelly Collins, Legislative Clerk, Committee on Energy and Commerce

Attachment: QFR Responses_20180510 Energy Subcommittee Hearing_Curran.docx

Jennifer Curran
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Responses to Member's questions for the record for the House Subcommittee on Energy's May 10, 2018, hearing entitled "Examining the State of the Electric Transmission Infrastructure: Investment, Planning, Construction and Alternatives"

Questions from the Honorable Fred Upton

- 1. FERC Order 1000 requires that certain transmission projects be competitively bid. I understand that MISO has opened just two bidding opportunities for projects under Order 1000. Other RTOs such as ISO-New England have not offered any opportunities for competitive bidding, and your neighbor, SPP, has offered just one, which failed.**
 - a. Why does it appear that RTOs are not opening up transmission projects for competitive bidding?**

MISO's competitive transmission process identifies two project types that are eligible for competitive developer selection – Market Efficiency Projects (MEPs) and Multi-Value Projects (MVPs).

Since FERC's acceptance of MISO's competitive transmission process in 2015, MISO has approved three MEPs. Two of these were opened for competitive developer selection – the Duff-Coleman Project in 2015 and the Huntley-Wilmarth Project in 2016 (which was awarded to the incumbent following an applicable state right of first refusal statute). A third MEP, the Hartburg-Sabine Junction 500 kV Market Efficiency Project, was identified in 2017 and is currently undergoing the selection process.

Order 1000 focused on reducing barriers to regional projects, which tend to be cyclical in nature. To be eligible for competitive selection in MISO's region, transmission projects must meet certain criteria, including a benefit-to-cost ratio where benefits are equal to or exceed costs. In 2011, prior to Order 1000, MISO approved a major set of regional investments – a portfolio of seventeen MVPs across its footprint, representing approximately \$6 billion in transmission system investment. The projects were designed to reduce system congestion and meet Renewable Portfolio Standards in several MISO states through 2026. The last project will go into service in 2023.

As the resource portfolio continues to shift, MISO believes that the strength of its planning process will continue to identify regional projects that demonstrate value.

- 2. We've heard multiple times that interregional transmission lines simply are not being constructed. Can you explain why?**

Order 1000 allows adjacent regions to explore potential solutions that may be more cost effective or efficient than regional or local solutions. Interregional projects must show benefit for both regions. MISO's experience has shown that most transmission needs can and are being addressed by more cost effective and efficient regional or local solutions.

MISO, which covers an expansive geographic footprint across 15 states and one Canadian province, has facilitated nearly \$30 billion in total transmission investment, which includes interstate transmission, since the first MISO Transmission Expansion Plan in 2003.

Interregional planning under Order 1000 is a relatively recent development. While MISO has nearly 15 years of regional transmission planning experience, Order 1000 interregional compliance filings were made during 2013 and compliance orders were issued through the end of 2015. As a result, interregional planning has been slower to evolve as we bridge regional differences. Further, the pace of interregional project development, as well as recent larger scale regional transmission efforts, has been significantly impacted in recent years by several factors, including the need to evolve the metrics used to assess the benefits of transmission to reflect changing system conditions. The uncertainty of the future energy landscape and lack of clear policy to address that future uncertainty continues to hinder the business case for long-lead, large scale transmission projects.

Transmission investment provides value to the marketplace by opening up opportunities to access the most economic resources on the system. That access and ability to maximize the benefit of interregional transmission can be hindered by administrative or economic hurdles, which in some cases reflect differing operating philosophies and are difficult to overcome. In general, it is difficult to achieve alignment and agreement of future needs, benefits and cost allocation across multiple regions that are geographically expansive and contain a diverse spectrum of stakeholder opinions. A high level of consensus is critical when moving forward with interregional projects.

Nevertheless, MISO and PJM have made significant progress that our regions can build from. We jointly developed and implemented a new transmission concept called Targeted Market Efficiency Project (TMEP) upgrades. TMEPs are designed, in the short-term horizon, to address historically known market-to-market congestion. MISO and SPP are also working with our joint stakeholders on how best to incorporate market-to-market congestion in coordinated transmission planning. While these projects are relatively smaller upgrades, they will have a large positive benefit to the seam between regions, and we expect them to pave the way for future mutually beneficial projects.

Together with PJM, SPP and our joint stakeholders, we are working to further remove perceived barriers to enable the evaluation and potential approval of larger, more cost effective and efficient interregional projects and to enhance our processes to find efficiency gains. We anticipate adding such enhancements to our Joint Operating Agreements this year.

3. MISO was very successful with its Multi-Value Project (MVP) effort. Can you explain in more detail how the MVP process works and how it's different than the Order 1000 planning process?

MISO's planning process included many major elements of FERC Order 1000, even before that Order was issued. For example, MISO employed a regional planning process that included consideration of public policy needs and had a regional cost allocation mechanism (Multi-Value Projects, or MVPs) for those types of projects. MVPs are a category of transmission expansion projects that look at portfolios of projects that provide widespread benefits throughout the MISO region. MVPs address public policy requirements, reliability and economic benefits.

In order to be recommended as MVPs, the proposed project portfolio must also meet a series of conditions:

- aligned interests for regional transmission solutions;
- a robust business case for the projects that evaluates the projects under multiple future scenarios;

- clearly defined cost allocation methods that closely align who pays with who benefits; and
- cost recovery mechanisms that reduce financial risk.

All of these items are evaluated through an open and transparent stakeholder review process. To provide additional insight and confidence into the planning process, MVPs also undergo periodic reevaluation through MVP annual and triannual reviews.

In 2011, MISO's Board of Directors approved 17 projects, representing approximately \$6 billion in transmission system investments, as the first MVP portfolio. While the original MVP portfolio was developed prior to the implementation of FERC Order 1000, many of the planning reforms specified by the Order were already applied to the MVP planning effort. The MVPs were demonstrated to have broad regional benefits well in excess of costs, aligned to corresponding region-wide cost allocation mechanisms. The portfolio also had widespread support from state and regulatory agencies to help meet an important policy need at the time – state Renewable Portfolio Standard (RPS) mandates.

Today, the MVP project category is a part of MISO's Order 1000-compliant regional planning process. Projects that qualify as an MVP are regionally cost shared on a load ratio share basis (based on energy withdrawals). Because MVPs are regionally cost shared, future MVPs are eligible for MISO's competitive developer selection process.

a. In terms of allocating the costs of transmission projects, how does MISO seek to ensure that beneficiaries pay for transmission?

MISO employs a suite of mechanisms designed around allocating the costs of transmission projects to beneficiaries.

- Cost allocation for reliability driven projects is focused on the entity that is facing a reliability need and is thus benefitting from the project.
- Cost allocation for projects needed to interconnect new resources is focused on those customers seeking to gain access to the MISO transmission system. For higher voltage upgrades (defined as those transmission facilities 345kV and up) there is a ten percent allocation to all load in MISO in recognition of the broader efficiency impacts those facilities provide.
- Cost allocation for projects to improve market efficiency is based on the distribution of calculated benefits for those projects, utilizing multiple quantifiable metrics.
- Cost allocation for portfolios of projects that benefit the MISO region is done on a load ratio share basis. These portfolios of projects (MVPs) can be driven by public policy needs or a combination of economic and reliability factors. To ensure alignment of costs and beneficiaries MISO evaluates MVPs as a part of a portfolio of projects that impact the region.

MISO also regularly reviews cost allocation mechanisms with stakeholders and adjusts the methods as necessary for new projects to reflect changing system conditions. The development of the Multi-Value Project cost allocation method is an example of the outcome of one such stakeholder review.

Questions from the Honorable Gregg Harper

1. Under FERC's incentive policy provided certain ROE rate incentives for transmission providers to build projects that either faced unique risks or employed advanced technologies.

a. From your perspective as a grid operator, do these incentives attract needed transmission infrastructure investment?

Many different factors, including rate incentives, are taken into account by transmission providers in making transmission infrastructure investment decisions. As an RTO, MISO's planning processes focus on identifying benefits of projects to the system, but we do not build or own transmission infrastructure.

b. In your opinion, would many of these projects still get built without the incentives?

Because MISO does not build or own transmission lines or recover their costs, it is difficult to accurately predict how much impact incentives have on the business decisions of individual transmission providers.

Question from the Honorable H. Morgan Griffith

1. Given the difficulties you mention achieving consensus on who should pay for large new transmission investments, would clearer FERC policy on cost allocation address another impediment to building the next set of large transmission projects?

Cost allocation is inherently challenging. However, there are some elements of cost allocation where further FERC guidance would be helpful, in particular around which benefits should be quantified in the evaluation of regional transmission projects. Transmission, particularly large scale Extra-High-Voltage transmission, provides many benefits to multiple parties. It is critical that the full scope of benefits are included in the analysis to determine the merits of a project. FERC Order 1000 established that cost allocation should be based on a beneficiary pays principle. However, because regional transmission provides multiple types of benefits to multiple parties, to allocate to beneficiaries you must first identify who is benefitting and why. Some benefit metrics, such as Adjusted Production Cost savings, are widely utilized and understood throughout the industry. Other metrics based on new technologies or initiatives are more difficult to quantify and gain acceptance. For example, there is an increased focus in the industry around system resilience but, to date, there is no widely accepted method to quantify the economic benefit of regional transmission investment to overall system resilience. FERC or industry efforts to define and quantify an economic metric associated with improved system resilience could help integrate those elements into regional planning processes.

Questions from the Honorable Richard Hudson

On April 19, FERC issued a new rule (Order No. 845) concerning revisions to the interconnection process for large generators which are over 20 MWs. The intent of this rule is to reduce the backlog of interconnection queue requests, however, these new regulations put the onus on the transmission provider to develop new procedures to accommodate additional flexibility for interconnecting generators. The interconnection process is already quite complicated with several studies often required to determine the impact of the new generation on the transmission grid with various deadlines for each specific step in the process. This was manageable when there were only a handful of interconnection requests per year. However, these queues have grown more recently due to the significant increase in the number of smaller-sized interconnection requests for

wind and solar generation. Developers typically put in several requests at one time, knowing that many of them will not get built. In some cases, there is more proposed generation in the queue than the total customer load in a particular area.

1. Do you believe that this new interconnection rule will alleviate these backlogs?

While FERC's recent rule on generation interconnection procedures is an important step toward expediting interconnection queue processing, it will not be sufficient to alleviate MISO's current backlogs.

Prior to the issuance of Order 845 MISO had already instituted many of its provisions, and we continue to seek opportunities to improve our processes. Some of the challenges we face include queue size and related process delays due to interconnection study complexity. MISO currently has over 90,000 MW of requests in our generator interconnection queue. This is over half of MISO's current total installed generation capacity of 175,000 MW.

Historical experience and discussions with customers suggests many of the projects in the queue will not be built. The sheer size of the existing queue creates challenges that are preventing those projects that are ready and prepared for commercial operation from getting their Generation Interconnection Agreements in a timely manner.

MISO continues to work with stakeholders to develop reforms to help expedite the process and move projects through the queue more quickly. The near term focus includes changes to site control requirements and system study processes, and modifications to generation study models.

2. How would modifications made by interconnection customers affect the interconnection studies of later-queued requests?

MISO's process is designed to ensure that modifications do not adversely affect the results of later-queued requests. Any request for modifications must be evaluated by MISO to determine the potential impact on later-queued project requests. If the requested modification is determined to impact the cost or time, including study time, for a lower queued project, then MISO will deny the modification request or require the interconnection request to re-enter the queue.

Question from the Honorable Tim Walberg

1. You note that FERC Order 1000 and the advent of competitive bidding is one of the items that has increased the complexity of developing additional large scale investment plans. Can changes to this policy remove some of the challenges to developing the next set of regional transmission investments needed in MISO?

Refinement of Order 1000 would reduce the complexity of and potentially improve the collaboration around development of transmission investments in MISO's region. Key to the refinement is that FERC establish a clear, holistic view of the objectives and success measures for transmission investment. MISO's focus, first and foremost, is ensuring that necessary regional and interregional transmission – the most efficient plans to provide benefits to customers in excess of costs – is developed in the region. Metrics that reflect those objectives, rather than simply counting the number of projects in a specific category, would be welcomed.