
MEMORANDUM

To: MISO
From: The Entergy Operating Companies
Subject: LLWG Item 07: Large Load Interconnection Reliability Requirements
Tariff Updates
Date: July 7, 2026

The Entergy Operating Companies (EOC or Entergy)¹ welcome the opportunity to provide feedback on the most recent Large Load Working Group (LLWG) presentation regarding MISO’s Large Load Interconnection Reliability Requirements. We appreciate MISO’s willingness to listen to stakeholders and incorporate feedback into the proposals. These discussions have led to some specific improvements, which are a step in the right direction. For instance, Entergy is pleased with the modification of some mandatory recovery requirements related to the ride through standard.² However, additional questions remain regarding specific standards and Entergy continues to have concerns about the proposed transition period.

We restate our standing objection to MISO’s short review timelines that do not provide sufficient opportunity for Entergy to fully understand, analyze and develop comprehensive comments to the LLWG, including LLWG-2026-3, which proposes to establish mandatory reliability requirements. Our comments below therefore reflect recommendations to the extent we have had the opportunity to review the material and

¹The Entergy Operating Companies are Entergy Arkansas, LLC, Entergy Louisiana, LLC, Entergy Mississippi, LLC, Entergy New Orleans, LLC, and Entergy Texas, Inc.

² Large Load Interconnection Reliability Requirements (LLWG) presentation (June 29, 2026), [https://cdn.misoenergy.org/20260629%20LLWG%20Item%2007%20Large%20Load%20Interconnection%20Reliability%20Requirements%20\(LLWG-2026-3\)765705.pdf](https://cdn.misoenergy.org/20260629%20LLWG%20Item%2007%20Large%20Load%20Interconnection%20Reliability%20Requirements%20(LLWG-2026-3)765705.pdf), Slide 23, “Large Load Voltage Ride-through Technical Compendium” detailing Mandatory Recovery at 0.50 – 0.90 pu and eliminating the restoration of >90% power within 1 second of voltage recovery above 0.90 pu requirement.

develop our response under an expedited timeline that is not commensurate with the complexity and scope involved. To this end, the following comments focus on one aspect of MISO's various proposals related to modified ride through requirements. Entergy continues to track multiple proposed requirements related to this issue more broadly and the many separate issues recently discussed on the LLWG's agenda.

1. MISO Must Protect Existing Commercial Arrangements

MISO should follow the clear direction from FERC to provide sufficient transitional periods to protect current large load agreements that have already been signed or that are nearing completion, but the loads are not yet online. The Commission's guidance on this point is unambiguous and reflects a repeated precedent when it issues new tariff requirements to ISOs/RTOs, and in particular MISO, to grandfather existing projects from new requirements. The implementation of reasonable transition periods is vital to protect ongoing projects from disruption. MISO's current transition period window is wholly insufficient and, if not modified, will significantly disrupt agreements that have been executed and commitments already in mid-stream status.

The Commission's Order to Show Cause ("Show Cause Order") was recently issued and directly addresses some of our concerns on MISO's transition period. Specifically, it requires the grandfathering of agreements already executed by Entergy's customers and directs MISO to further protect agreements that have taken significant steps but have not yet signed final agreements. As such MISO should take affirmative steps to protect projects that have already been initiated under the existing Tariff. The Commission's intent has been made clear:

“We note that large loads, including data centers, are actively working with transmission owners and other relevant entities to interconnect to, and to take interconnection and/or transmission service from, the transmission system and may be at varying stages of that process. We appreciate that different large loads are currently at different stages of that process. We also understand that large loads and Eligible Customers taking transmission service on behalf of large loads are negotiating, entering into, and/or have executed various agreements related to interconnecting to the transmission system and/or the provision of transmission service. We direct further briefing regarding how MISO and the Transmission Owners, in responding to the order to show cause, should protect existing commercial arrangements including: (1) what would be a reasonable implementation period to ensure minimal disruption to such existing commercial arrangements, and (2) how to allow a reasonable amount of time to finalize ongoing agreements that are nearing completion as of the date such Tariff provisions are filed with the Commission.”³

FERC has thus confirmed that existing agreements or agreements nearing completion must be protected against disruptions. The only question is how MISO will ensure that such arrangements are not subject to disruption. A key point to the Show Cause Order is that MISO should incorporate necessary reforms in a prospective manner so as to ensure minimal disruption to existing commercial arrangements and allow a reasonable amount of time to finalize ongoing agreements that are nearing completion.⁴ The Commission explicitly states that “[s]uch proposed Tariff revisions should include a

³ Show Cause Order, Para 123.

⁴ Show Cause Order, Para 5 “We recognize that large loads, including data centers, are actively working with transmission owners and other relevant entities to interconnect to, and to take service from, the transmission system. We appreciate that different large loads are currently at different stages of that process. We also understand that large loads and Eligible Customers taking transmission service on behalf of large loads are negotiating, entering into, and/or have executed various agreements related to interconnecting to the transmission system and/or the provision of transmission service. This proceeding is not intended to disrupt existing commercial arrangements, but rather to establish prospective reforms. Accordingly, any Tariff revisions offered by MISO and/or the Transmission Owners in response to this proceeding should (a) propose a reasonable implementation period to ensure minimal disruption to such existing commercial arrangements, and (b) allow a reasonable amount of time to finalize ongoing agreements that are nearing completion as of the date such Tariff provisions are filed with the Commission.”

reasonable effective date that accommodates such considerations regarding these existing commercial arrangements.”⁵

This requirement to protect existing commercial arrangements is a well-established principle. For example, FERC has repeatedly required grandfathering provisions to protect ongoing commercial arrangements and transmission agreements when directing MISO to make significant adjustments to its tariff. These protections span multiple categories of MISO proceedings and include: (1) the original MISO formation and the six-year transition for pre-existing bilateral transmission contracts;⁶ (2) a series of generator interconnection queue reforms from 2008 through 2024, each of which included grandfathering provisions that were adjusted according to a specific project’s stage in the interconnection study process;⁷ and (3) other changes related to the MISO-SPP Joint Operating Agreement queue priority reform.⁸

⁵ Id.

⁶ MISO’s 1998 formation included a FERC-approved six-year transition period to protect two categories of pre-existing obligations: (1) bundled retail load served by MISO transmission owners under state-regulated rates, and (2) pre-existing wholesale bilateral transmission contracts executed before September 16, 1998, known as Grandfathered Agreements (GFAs). See *Midwest Independent Transmission System Operator, Inc. and the Transmission Owners of the Midwest Independent Transmission System Operator, Inc.*, 136 FERC ¶ 61099 at P3 (2011) (Addressing the MISO TO Agreement, which set forth the rules governing the relationship between and among MISO and the MISO TOs, including the administration of GFAs to establish two revenue distribution methodologies - one applicable during the six-year transition period ending January 31, 2008, and the second applicable after the end of the transition period). The D.C. Circuit upheld FERC’s decision to preserve GFAs in *Wisconsin Public Power, Inc. v. F.E.R.C.*, 493 F.3d 239, 254 (2007) (agreeing with the Commission’s conclusion that carving out a relatively small number of GFAs would not threaten the reliability of MISO’s grid or seriously compromise the efficiency of its markets).

⁷ See, e.g., Facilities Study Agreement in Docket No. ER08-1169-000, *Midwest Independent Transmission System Operator, Inc.*, 124 FERC ¶ 61,183 at P 90 (2008) (granting transition period of a reasonable time period to allow existing projects to meet the specified milestones and deposits); and Revisions to Generator Interconnection Procedures (“GIP”) and pro forma Generator Interconnection Agreement in Attachment X of MISO’s Tariff in Docket No. ER17-156-000, *Midwest Independent Transmission System Operator, Inc.*, 158 FERC ¶ 61003 at P (2017) (accepting MISO’s transition plan, as it respected queue positions by grandfathering late-stage interconnection requests and setting out specific transition timelines for groups of interconnection customers based on their status as of the effective date of the new GIP).

⁸ A significant reform, accepted by the Commission in May 2022, changed the point in each RTO’s study process that established relative queue priority from the initial study entry deadline to the close of Decision

MISO's proposed transition mechanism fails to meet the standards of the Show Cause Order. For example, given current supply chain conditions, any data center load set to ramp on by November 1, 2027 would have already ordered processor chips.⁹ When placing these orders, large load customers were not aware of MISO's proposed reliability requirements. Based on MISO's currently-proposed tariff language, such data centers that have procured processor chips may not be able to meet the new or revised performance requirements.

To require such customers to cancel current orders and start the purchasing process anew would be inherently and unreasonably disruptive. Even if the requirements were finalized today, and new chips were ordered, it would be sometime in calendar year 2028 before the chips would be ready for delivery and installation.¹⁰ Beyond the issue of delayed large load interconnection, the cost to source and procure the additional chips would be exorbitant. For instance, re-ordering chips for one project may equal or exceed the cost of building a new 500MW gas-fired power plant.

Point 1 (DP1) after Phase 1 studies. The reform included a transition plan that grandfathered all interconnection cycles and clusters preceding MISO's DPP-2020 cycle and SPP's DISIS-2018-001 cluster, preserving the prior deadline approach for those earlier projects. The Commission found this transition plan just and reasonable as a prospective tariff change under FPA section 205, and consistent with its broader policy of protecting the reliance interests of interconnection customers whose projects were sufficiently advanced under the prior rules. *See* Order Accepting Joint Operating Agreement Revisions in Docket Nos. ER22-1533-000, ER22-1535-000, *Southwest Power Pool, Inc., Midcontinent Independent System Operator, Inc.*, 179 FERC ¶61148 (2022) at P 28 (“[T]he proposed transition point appropriately respects the expectations of existing interconnection customers while improving the Affected System study process for new interconnection customers . . . such transitions should consider grandfathering interconnection requests submitted in prior cycles and clusters.”).

⁹ In the context of data centers and heavy computational workloads, “chips” are formally described as high-performance semiconductor devices, integrated circuits (ICs), or microarchitectures.

¹⁰ If MISO has collected information from customers regarding the capability to make sufficient purchasing and agreement implementation adjustments within MISO's currently-proposed timeline, such information should be made transparent to allow Entergy and other Transmission Owners the opportunity to review and understand those discussions.

The lack of a reasonable transition mechanism and grandfathering period will impose the substantive new requirements on approximately 90% to 100% of customers that the Entergy Operating Companies consider “in flight” because we have executed retail Electric Service Agreements (“ESAs”) with them. Moreover, even a transitional exemption from Ramp and Ride Through requirements does not offer meaningful relief to a significant number of these customers. While there may be some who will take 50MW or more of metered demand prior to the November 1, 2027 deadline, all or most of those customers plan to increase that demand by 25MW or greater after that date.

Thus, we view MISO’s current transmission mechanism as disruptive to arrangements of our large load customers, who have already made plans and in many cases have begun construction of their facilities. To date, MISO has not offered any technical rationale for its November 1, 2027 transition date. Yet, as drafted, MISO’s new requirements will affect ~10 GW of load for Entergy Operating Companies’ large load customers that are “in flight.”

In light of the Commission’s recent guidance and clear intent in the Show Cause Order, Entergy recommends that MISO adopt the following transition period: ***all executed agreements signed no later than six months from MISO’s filing to the Commission of new reliability requirements will be grandfathered such that the Tariff as it existed prior to MISO’s filing shall be the operative one for each such customer.*** Consistent with the Show Cause Order, this language will protect existing commercial agreements and provide a reasonable amount of time to finalize agreements that are nearing completion.

2. Technical Refinement of MISO's Proposed Ride Through Requirements Remain Outstanding and Require Additional Coordination with Stakeholders

While Entergy recognizes that ride through requirements are important technical standards, our concern is that MISO's proposal lacks sufficient technical rigor and will therefore impose unnecessary costs without providing reliability benefits. As such, we again express our concern that there are still in-flight projects (with signed ESAs) that will have immediate disconnects for voltages above 1.1 pu or below 0.7 pu. The proposed ride-through requirements are not feasible for projects where major electrical equipment, such as UPS systems and GPU chips, have already been ordered and the equipment ordered did not take into account the ride-through requirements that MISO now proposes.

Entergy is also concerned with the proposed ride-through requirements as related to the question of proportional reduction. MISO expects large computational loads to satisfy ride-through requirements in a manner similar to generators. However, many UPS /inverter systems isolate during voltage depressions (up to 0.7 pu) and are unable to meet a proportional reduction requirement given that these systems are not designed to modulate load as a function of grid voltage. In addition, MISO has not demonstrated system risks which allow for flexible reduction (down to 0 MW) for voltage depressions less than 0.5 pu while allowing only proportional reduction for voltage depressions between 0.5 pu – 0.9 pu. It is also important to note that even generator ride-through requirements allow for momentary cessation during which the generator is allowed to reduce output to zero MWs while remaining electrically connected to the grid. Thus, it is

unclear why large computational load facilities would only be allowed a proportional reduction and held to a stricter standard.

In addition, Entergy is concerned that the proposed ride-through requirements do not fully account for how large computational loads can affect post-fault voltage recovery. In certain locations, requiring a data center to maintain high MW load levels during a disturbance, or permitting it to return to pre-fault levels at a fast rate, may contribute to fault-induced delayed voltage recovery or precipitate voltage collapse. These risks are highly dependent on local system strength, data center load composition, and reactive power support available in the surrounding network. As such, the appropriate ride through behavior during and after a fault cannot be generically assigned and should be evaluated on a case-by-case basis through system studies.

Separately with respect to this proposed ramp rate requirements, MISO should be able to demonstrate some technical analysis that confirms a 30 MW/min ramp rate is necessary to avoid some given transmission system risks, and those risks should be specifically set forth. The need for study-based observations (which have not to this point been provided) and flexible requirements will also be necessary because even within MISO's footprint a certain ramp rate may need to be more restrictive in certain zones and less restrictive in others. Once MISO provides technical justifications for its ramp rate proposal, Entergy looks forward to providing further comments.