



# Louisiana Public Service Commission

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October 10, 2025

### **VIA HAND DELIVERY**

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LA PUBLIC SERVICE COMM  
OCT 10 2025 PM03:02

***Re: Docket X-37608, Louisiana Public Service Commission, ex parte. In re: After-Action Review of Cleco Power and Entergy Louisiana's May 25, 2025 outages, pursuant to General Order dated April 13, 2017 (Docket No. R-32786).***

To whom it may concern:

Enclosed for filing in the above referenced matter is After-Action Report of the Louisiana Public Service Commission Staff Pursuant to General Order No. R-32786 Regarding May 25, 2025 Load Shed Event in Entergy and Cleco Service Territories. A confidential version of this filing is being provided under seal.

Please also accept this letter as notification that this docket shall be converted to a "U" docket and published in the next bulletin with a 25-day intervention period.

If you have any questions about this filing, please do not hesitate to contact me.

Sincerely,

A handwritten signature in blue ink, appearing to read "K. Bowman", is written over a horizontal line.

Kathryn Bowman (Bar Roll 31628)  
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Louisiana Public Service Commission  
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cc: Service List (via email)

**PUBLIC VERSION**

**LOUISIANA PUBLIC SERVICE COMMISSION**

**DOCKET NO. X-37608**

**LOUISIANA PUBLIC SERVICE COMMISSION,  
EX PARTE**

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*In re: After-Action Review of Cleco Power and Entergy Louisiana's May 25, 2025 outages, pursuant to General Order Dated April 13, 2017 (Docket No. R-32786)*

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**AFTER-ACTION REPORT  
OF THE LOUISIANA PUBLIC SERVICE COMMISSION STAFF  
PURSUANT TO GENERAL ORDER NO. R-32786  
REGARDING MAY 25, 2025 LOAD SHED EVENT  
IN ENTERGY AND CLECO SERVICE TERRITORIES**

**EXECUTIVE SUMMARY OF STAFF'S AFTER-ACTION REPORT**

Pursuant to a directive issued at the June 18, 2025 Business and Executive Session ("B&E") (the "Directive"), Staff, with assistance from outside consultant United Professionals Company, LLC ("UPC") and outside counsel Stone Pigman, completed an after-action review (the "Staff Report") of the May 25, 2025 load shed event (the "May 25 Load Shed Event") that occurred in Cleco Power, LLC's ("Cleco") and Entergy Louisiana, LLC's ("ELL") service territories. Staff's review was conducted in accordance with General Order No. R-32786 dated April 13, 2017 (*In re: Rulemaking to Establish "Best Practices" Protocols for Disaster Planning and Response by All LPSC-Jurisdictional Utilities*), Attachment A, Section III.

Specifically, the Commission's Directive ordered Staff to review and report on the following related to the May 25 Load Shed Events:

1. The causes, including the root causes, of Cleco and ELL's outages and [Midcontinent Independent System Operator's] load shed orders;
2. Recommendations for remedying any of the causes identified;
3. Whether notifications to and communications with the Commission and customers regarding the outages were in compliance with General Order No. R-32786, and any other applicable orders or requirements;
4. Recommendations for improvements to communications protocols; and,



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5. Whether any fines, penalties, or monetary damages are warranted pursuant to Section VIII of Attachment A of General Order R-32786, or pursuant to any other provision of law.

This Executive Summary outlines the findings included below in the detailed Staff Report following Staff's extensive research and analysis of the May 25 Load Shed Event and of Cleco's, ELL's, and Midcontinent Independent System Operator's ("MISO") actions immediately preceding and surrounding the event.

This Executive Summary does not substitute for the facts and conclusions contained in the Staff Report.

- 1. The causes, including the root causes, of Cleco's and ELL's outages and MISO's load shed orders.**

### **Root Cause**

Primarily, the root cause of the May 25 Load Shed Event was MISO's declaration of a Transmission System Emergency ("TSE") due to a *Temporary* Interconnection Reliability Operating Limit ("IROL") on the [REDACTED]. As discussed further below, this Temporary IROL was driven by a combination of factors, primarily (i) limited transfer capability caused by the ongoing outage of the Nelson-Richard 500kV transmission line; (ii) lack of available generation within the Amite South load zone due to both planned and unplanned outages; and (iii) the pre-defined parameters of MISO's unique "temporary" IROL designation, which required an immediate load shed for a projected post-contingent exceedance without reasonable notice.

### **Ongoing Outage of the Nelson-Richard 500kV Transmission Line**

The primary transmission contribution to the May 25 Load Shed Event was the outage of the Nelson-Richard 500kV line, which went out of service on March 24, 2025 due to damage caused by severe weather. At the time of the May 25 Load Shed Event, this line was scheduled to return to service on May 30, 2025; however, Entergy was able to return the line to service early on the evening of May 27, 2025. When the Nelson-Richard 500kV line is out, Amite South's import limit materially declines and operators must rely on costly local redispatch and must-run commitments to maintain voltage and stability.

### **Lack of Available Generation in the Amite South Load Zone Due to Planned and Unplanned Outages**

Regarding the contribution of generation to the event, Staff reviewed numerous responses to data requests and information related to generation outages that contributed to the May 25 Load Shed Event. This information is summarized in Table 2 of the Staff Report.

While the amount of planned generation outages was not problematic (2,984 MWs), when combined with the amount of forced outages (3,937 MWs) and forced derates (1,093 MWs), total generator outages in the Amite South load zone exceeded 50% of all generation. These outages were widely dispersed among generator owners, both regulated and unregulated.



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Staff's high-level review of the outages for the regulated entities do not indicate a concern regarding potential imprudent behavior; however, such a full review will take place in the 2025 Fuel Adjustment Clause audits for ELL and Cleco to be performed in the future, unless the Commission orders an earlier review. Staff has no ability to review the more than 1 GW of outages and derates for the unregulated generators that contributed to the May 25 Load Shed Event, but Staff has been able to confirm that some cooperative load in the Amite South load pocket has relied on some of that same capacity to meet its MISO Planning Reserve Margin Requirement ("PRMR").

Further, and based on disclosures made by the MISO Independent Market Monitor ("IMM") in its review of the May 25 Load Shed Event, Staff has verified that some solar generation and suspects that some of the other non-regulated generation did not follow dispatch instructions resulting in increased flows on the constraint. However, Staff has no way to verify that suspicion because related information was not disclosed by MISO.

Staff finally notes that one available unit had been identified as capable of mitigating the constraint. Given the timing of the final forced outage, committing that unit at that juncture would not have provided timely relief. However, even before that outage, the Amite South load pocket was operating with an elevated level of forced outages.

### **MISO's Temporary IROL Designation**

An IROL is a North American Electric Reliability Corporation ("NERC") defined system operating limit that, if violated, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Bulk Electric System ("BES"). NERC rules require the Reliability Coordinator (in this instance, MISO) to cure an IROL exceedance within thirty minutes. However, the concept of a "temporary" IROL is a MISO-specific, real-time operating designation (i.e., a "Temporary" IROL is not a NERC-defined term) based upon a post-contingent concern. This is not an IROL based on an actual real-time occurrence but rather it's a real-time operating designation based upon a potential event.

On identifying a Temporary IROL condition, MISO conducts a 15-minute stability/cascade evaluation. If that study confirms the identified post-contingent risk, or MISO cannot complete its stability/cascade evaluation within fifteen minutes, MISO then treats the Temporary IROL as an IROL exceedance, and MISO counts its fifteen minute temporary IROL evaluation window as part of (or leading to) the NERC-defined thirty minute window to cure IROL exceedances, which is why actions during these TSEs can escalate quickly, as happened during the May 25 Load Shed Event.

Based on ELL's and MISO's post event reports and the responses to Staff's discovery requests, Staff is concerned that MISO's unique, real-time Temporary IROL action call based on a post-contingent risk forces planning and operations into the IROL exceedance mitigation window with little to no warning and limits effective targeting, coordination, and transparency. Both ELL and MISO acknowledged at least some of Staff's concerns in their post event reports and propose some potential solutions or actions. Staff additionally recommends a two-stage redesign of the Temporary IROL construct, as discussed in Section 2 immediately below.



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### **2. Recommendations for remedying any of the causes identified.**

All parties acknowledge (and Staff agrees) that under the current framework, a recurrence of the same conditions would likely result in another load shed event. To mitigate such recurrence, Staff recommends the following of the Commission, its jurisdictional utilities, and the MISO stakeholder process:

#### **a. Revisit unit-commitment thresholds in load pockets during periods of elevated forced outage risk.**

- Staff questions whether the current thresholds for committing additional generation to manage anticipated voltage and reliability risks are set appropriately. Staff recognizes that earlier or additional commitments can increase costs to customers; nevertheless, following the May 25 Load Shed Event, a reassessment of commitment criteria is warranted.

#### **b. Reform MISO's Temporary IROL procedures to allow for more time, communication, and targeted solutions for post-contingent risks.**

- ELL has requested that MISO make actions taken pursuant to Temporary IROL conditions more explicit and targetable. ELL further proposes methods to improve pre-event readiness (e.g., interruptible load protocols, drills/training, proactive internal triggers), tighter model alignment and reconfiguration coordination with MISO, and engaging NERC on clearer guidance for certain thresholds and conditions.
- MISO commits to evaluate adjustments to internal procedures, review its forward-reliability process, continue Load Modifying Resource ("LMR") reforms, and working through the stakeholder process to improve pre-emergency and emergency communications with member utilities.
- In addition to, and in coordination with ELL and MISO's proposed actions, Staff recommends a two-stage redesigning of the Temporary IROL construct. This recommendation would provide for a notification of concern at one level (e.g. >125% line exceedance) and action to address the concern at another level (e.g. >150%). This two-step process would allow for a more orderly development of specific action plans to address IROL concerns as further discussed in Section IV.B.2 of Staff's Report.

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### **c. Continue prudent transmission planning to increase import capability into the Amite South load pocket.**

- Both ELL and MISO's post event reports highlight the structural challenges associated with serving the Amite South load pocket. ELL has recently sought (or is currently seeking) Commission certification of transmission projects advanced and approved through the MISO Transmission Expansion Plan ("MTEP") process.<sup>1</sup> While ELL's transmission certification proceedings are in various stages of the adjudication process before the Commission, and Staff makes no pre-determination on their approval, they nevertheless illustrate that ELL, MISO, and the Commission are all focused on trying to find solutions to help improve the ability to move power within the Amite South load pocket and increase load-serving capability. Prudent transmission planning should continue to seek projects that the Commission may find are in the public interest.

### **3. Whether notifications to and communications with the Commission and customers regarding the outages complied with General Order No. R-32786, and any other applicable orders or requirements.**

Staff finds that both ELL and Cleco complied with Sections II (Emergency Services Plans), IV (Statewide Electricity Outage Reporting System), and V (Automated Customer Notification/Text Messaging System) of Attachment A of General Order R-32786.

#### **ELL**

Staff concludes that ELL failed to comply with Section VI (Non-Emergency Outage Reporting) of Attachment A of General Order dated April 13, 2017. Section VI.1 requires utilities to promptly notify the Commission of any loss of service that is expected to be more than three hours. ELL first notified the Commission of the service disruption approximately 1.5 hours after MISO ordered ELL to shed load. ELL could and should have alerted the Commission to the load shed in advance of or, at the very latest, concurrently with the load shed.

ELL additionally failed to comply with Section VI.1.a, which requires an estimated restoration time to be communicated to the LPSC Executive Secretary, LPSC ESF-12 Lead, and the relevant LPSC District Office(s), although ELL did send alerts to customers with an estimated restoration time at the time of the outage and updated customers with revised estimated restoration times as the event progressed. .

Further, ELL failed to fully comply with the reporting requirements of Section VI.2.d, which require the utility to notify the Commission within twenty-four hours and provide a full

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<sup>1</sup> See LPSC Docket Nos. S-37113 (Audubon Substation Project), U-37527 (East Bank Geismar 230kV Project), U-37143 (West Bank 230kV Project), U-37467 (West Bank 500kV Project), and U-37563 (Adams Creek-Robert 230kV Project).



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report within seventy-two hours of the service disruption where prior notification is not possible. While ELL notified the Commission of the outage within 24 hours through its emails to Commissioners and Commission Staff on May 25, ELL did not provide a full report until two months later when it provided its post event report on August 1 and appeared at the June 18, 2025 B&E to answer questions and report on the status of its ongoing investigation. Staff acknowledges, however, that the current rule does not specify what is meant by a "full report," and that it would be difficult for an entity to provide a detailed root cause analysis within 72 hours of an outage. As discussed in Section VI of Staff's Report, Staff recommends that the Commission consider providing more detail as to what type of reporting is required, when it is required to be submitted, and suggests that a preliminary report would be appropriate within 72 hours, with a fuller report due at a later interval, such as 60 days.

### **Cleco**

Staff finds that Cleco promptly notified the Commission of the disruption in service (Section VI.1) given the late notice it received from MISO. Staff finds that because Cleco did not have advance warning of the possibility of a load shed event, and given the urgency of having to address an unforeseen call to shed load, its phone call to Commissioner Skrmetta half an hour after receiving the load shed order and five minutes after the load shed commenced was prompt notification. In the future, however, Cleco and other Louisiana utilities should promptly notify *all* Commissioners and Commission Staff of load sheds, not just a particular Commissioner or Commissioners, and should provide that notification prior to or at least concurrently with a load shed.

Cleco failed to comply with Section VI.1.a, which requires an estimated restoration time to be communicated to the Executive Secretary, LPSC ESF-12 Lead, and the relevant District Office(s). Cleco made phone calls to Commissioner Skrmetta, Commissioner Lewis, and the Executive Secretary during the outage, and states that restoration information was provided in real time without estimates. MISO has also stated that it did not provide a projected restoration time and reported as the process of restoring load was ongoing until all load was restored. However, Cleco and all utilities should be aware that failure to provide restoration estimates violates the requirements of Section VI.1.a. All utilities should endeavor to ascertain estimated restoration times and to communicate those estimates to the identified Commission representatives and the public as soon as possible.

Cleco failed to provide a report to the Commission within seventy-two hours of the service disruption (Section VI.2.d). Cleco did not provide and, as of the time of writing this report still has not provided, any written report to the Commission related to the May 25 Load Shed Event.

### **MISO**

MISO notified Commissioners and Commission Staff once the load shed was underway, but did not notify the Commission in advance of the load shed. MISO's lack of prior notice in this situation was the unfortunate byproduct of the design of its Temporary IROL process. That process should be redesigned to allow for adequate stakeholder notice, but based on the prevailing standards as they exist today, MISO notified the Commission of the event in a reasonable time frame.



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MISO's communications with Entergy and Cleco were substantially lacking. MISO did not provide any advanced warning to Cleco that a load shed event was a possibility. MISO informed Entergy that a post-contingent load shed event was possible, but not the pre-contingent event that occurred. MISO also failed to timely notify Entergy that a line reconfiguration proposal that had been previously discussed as an effective mitigation measure was found by more recent MISO studies to no longer be an effective option. Once the load shed order was given, MISO did not alert Entergy that the order was intended to respond to IROL-like conditions or emergency conditions following an IROL study. MISO also failed to provide Entergy and Cleco with clear load shed instructions, delaying the execution of the load shed order.

#### **4. Recommendations for improvements to communications protocols.**

Following its review of the May 25 Load Shed Event and ELL, Cleco, and MISO's actions, Staff recommends the following improvements to communications protocols:

- a. The Commission develop and adopt notification and communications requirements for RTOs and LPSC-jurisdictional utilities during TSEs and localized emergencies that are similar to the notification and communication requirements during Energy Emergency Alerts ("EEA"), as provided in the Commission's General Order dated May 31, 2022. Alternatively, Staff recommends that "Emergency Events" be clearly defined in General Order dated May 31, 2022 and expanded to include TSEs and localized emergencies, as well as EEAs (Section VI.1 of Staff's Report).
- b. The rules for notification and reporting in General Order dated April 13, 2017 for load shed events such as the May 25 Load Shed Event be amended and/or clarified consistent with the recommendations throughout Staff's Report to provide ELL, Cleco, MISO, and all other utilities and RTOs operating in Louisiana with sufficient notice and guidance on what is expected of them during such events (Section VI.2 of Staff's Report).
- c. Staff supports the recommendations by MISO in its responses to Staff discovery requests and its post event report to improve communications, internal procedures, and education and training related to transmission system emergencies and plans to participate in MISO stakeholder proceedings to ensure these improvements are implemented (Section VI.3 of Staff's Report).
- d. Staff supports ELL's recommended actions that it provided in its post event report to improve public and internal communications (Section VI.4 of Staff's Report). ELL should report on the results of its discussions with MISO regarding improvements, as well as any improvements it supports in the MISO stakeholder process, within 60 days of any order accepting this recommendation, and at 60-day intervals thereafter until Staff determines that such reports are no longer helpful or necessary.



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### **5. Whether any fines, penalties, or monetary damages are warranted pursuant to Section VIII of Attachment A of General Order R-32786, or pursuant to any other provision of law.**

Staff is recommending against the assessment of penalties against ELL, Cleco, and MISO. While ELL and Cleco both failed to meet certain communication requirements outlined in Attachment A of General Order R-32786, these failures were due in large part to MISO's failure to communicate and coordinate effectively with the utilities. Additionally, there is a lack of clarity in the precise requirements of Section VI of Attachment A of General Order R-32786 as discussed in Staff's Report. The Commission does not have jurisdiction to impose penalties on MISO, even if it found such penalties to be appropriate. This lack of accountability structure will be assessed in the Staff's on-going review of RTO membership and alternatives.

While the Staff is not recommending fines, the Staff emphasizes that LPSC-jurisdictional utilities should report outages to the Commission, including all Commissioners and key Commission Staff, prior to an outage occurring where possible, or concurrent with the outage if prior notice is not possible. Further, utilities should proactively provide reporting following load shed events as soon as possible, even if all of the causes are not yet known and the report should be supplemented at a later time to provide complete explanation of causes and recommended corrective actions.

MISO's failure to communicate to ELL that a pre-contingent load shed remained a possibility, even as it told ELL that its reconfiguration was sufficient to eliminate the need for a post-contingent load shed, and its failure to communicate with Cleco at all, hampered those utilities' ability to manage the load shed to mitigate customer harm, to call on interruptible load to curtail power usage in an attempt to avert or lessen the outages, and to provide prior public notice of the impending power loss. MISO's gaps in communication, whether due to lack of sufficient transmission emergency protocols, or its Temporary IROL design, should be fixed as quickly as possible to mitigate future harm to Louisiana customers from MISO-called load sheds. The Staff will participate in MISO stakeholder processes to ensure improvements are made in these areas.

## **I. INTRODUCTION**

On May 25 at approximately 4:00 p.m. EST, thousands of customers of Entergy Louisiana, LLC ("Entergy" or "ELL") and Cleco Power, LLC ("Cleco") in southeast Louisiana lost power for several hours ("May 25 Load Shed Event").<sup>2</sup> The outage constituted a "Load Shed Event," where the Midcontinent Independent System Operator ("MISO"), the regional transmission organization

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<sup>2</sup> Customers of Entergy New Orleans, LLC ("ENO") also lost power during this load shed event. However, as ENO is regulated by the New Orleans City Council, this report focuses on the actions of LPSC-jurisdictional utilities Entergy Louisiana, LLC and Cleco impacting those companies' service territories.

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("RTO") that operates the transmission system in Cleco and Entergy's service territory, ordered both utilities to cut power to customers in certain areas to address instability on the grid and prevent larger-scale uncontrolled cascading outages.

MISO called for the load shed when it identified a temporary Interconnection Reliability Operating Limit ("IROL"), a reliability condition that results from a potentially overloaded transmission line that threatens grid stability. After exhausting all other available mitigation options, MISO issued emergency operating instructions to local Transmission Operators, directing a reduction in electricity demand by approximately 600 MW to prevent a broader system failure.

At the June 18, 2025 Business and Executive Session ("B&E"), the Louisiana Public Service Commission ("LPSC" or the "Commission") directed Staff to complete an After-Action Review of the May 25 Load Shed Event in accordance with LPSC General Order No. R-32786, Attachment A, Section III.<sup>3</sup> Specifically, the Commission ordered Staff to review and report on the following:<sup>4</sup>

- (1) The causes, including the root causes, of Cleco and ELL's outages and MISO's load shed;
- (2) Recommendations for remedying any of the causes identified;
- (3) Whether notifications to and communications with the Commission and customers regarding the outages were in compliance with General Order No. R-32786, and any other applicable orders or requirements;
- (4) Recommendations for improvements to communications protocols, and

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<sup>3</sup> LPSC General Order, Docket No. R-32786, dated April 13, 2017, Louisiana Public Service Commission, ex parte, *In re: Rulemaking to establish "Best Practices" protocols for disaster planning and response by all LPSC-jurisdictional utilities* ("General Order dated April 13, 2017").

<sup>4</sup> LPSC Notice of Proceeding, Docket No. X- 37608, dated June 18, 2025, Louisiana Public Service Commission, ex parte, *In re: After-Action Review of Cleco Power and Entergy Louisiana's May 25, 2025 outages, pursuant to General Order dated April 13, 2017 (Docket No. R-32786)*.



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- (5) Whether any fines, penalties, or monetary damages are warranted pursuant to Section VIII of Attachment A of General Order No. R-32786, or pursuant to any other provision of law.

This report addresses that directive.

To complete this report, Staff propounded several sets of formal and informal data requests to MISO, ELL, Cleco, 1803 Electric Cooperative, Inc. ("1803"), Dixie Electric Membership Corporation ("DEMCO"), Jefferson Davis Electric Co-op, Inc ("JDEC"), Southwest Louisiana Electric Membership Corporation ("SLEMCO"), Concordia Electric Cooperative, Inc ("CEC"), and Pointe Coupee Electric Membership Corporation ("PCE") and reviewed all of the responses to those requests. As part of its discovery responses, ELL provided a May 2025 Load Shed After-Action Report, which is attached as Staff Exhibit 1, and MISO provided a May 25 Load Shed Event August 2025 Report, which is attached as Staff Exhibit 2.

## **II. BACKGROUND**

### **A. HISTORY OF LOUISIANA PARTICIPATION IN MISO**

ELL is the largest electric utility in Louisiana, providing electricity to 1.1 million customers in Louisiana. ELL is a wholly owned subsidiary of Entergy Corporation, which operates five regulated electric utilities in the southeast, serves 3 million customers across that area, owns or operates approximately 24,000 megawatts of generating capacity, and owns more than 16,000 miles of transmission lines. Cleco is an electric utility that serves approximately 295,000 customers primarily in central, southern and western Louisiana, but that also serves customers in the far eastern part of the state north of Lake Pontchartrain. Cleco owns or operates approximately 3,600 megawatts of generating capacity and owns approximately 1,387 miles of transmission lines. The Commission regulates both ELL's and Cleco's Louisiana state retail jurisdictional activities.

MISO, as one of seven RTOs in the United States, is an entity approved by the Federal Energy Regulatory Commission ("FERC") that exercises functional control over the transmission

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assets in its territory that have been ceded to the RTO by transmission owners. RTOs are responsible for managing the day-to-day grid operations, ensuring that the grid remains stable in real time, regional planning for transmission grid expansion, and operating wholesale energy markets. Like all RTOs, MISO's most fundamental purpose, as defined by the FERC, is to ensure non-discriminatory access to the grid to achieve competitive, fair, market-based prices that reflect supply and demand in the wholesale electricity market.<sup>5</sup> MISO operates the electric transmission system in portions of 15 states in the Midwest and South and the Canadian province of Manitoba.

Both Entergy and Cleco are transmission-owning members of MISO that have ceded functional control of their transmission assets to MISO. Entergy joined MISO under pressure from the United States Department of Justice, which had been investigating Entergy's alleged non-competitive behavior. The Justice Department issued a public statement that indicated that Entergy's entry into MISO would satisfy the concerns under investigation:

Since the division began its investigation, Entergy announced that it intends to join the Midwest Independent Transmission System Operator<sup>6</sup> (MISO) and has entered an agreement to divest its electric transmission business to ITC Holdings Corp. ("ITC"), an independent transmission company<sup>7</sup>. . . Entergy's commitments to obtain membership in an RTO and divest its transmission system to a third party with the incentive to make efficient transmission investments are significant steps towards restoring competition in the Entergy service area. If Entergy follows through on its commitments, these measures will address the Antitrust Division's concerns by eliminating Entergy's ability to maintain barriers to wholesale power markets, ensuring that all Entergy service area

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<sup>5</sup> See Order No. 888, 61 Fed. Reg. 21540, at 21,596 (1996) ("The primary purpose of an ISO is to ensure fair and non-discriminatory access to transmission services and ancillary services for all users of the system.").

<sup>6</sup> MISO has since been renamed Midcontinent Independent System Operator.

<sup>7</sup> Entergy subsequently withdrew its ITC proposal due to a lack of state and local regulatory support. Entergy News Release, *Entergy, ITC Discontinue Pursuit of Transmission Spin/Merger* (December 14, 2013), <https://www.entergy.com/news/entergy-itc-discontinue-pursuit-transmission-spin-merger>. Retail regulators were concerned that the ITC transaction would erode their jurisdiction and raise rates for customers, with the Mississippi Public Service Commission unanimously rejecting the proposal in December of 2013. *In re Joint Application for the Transfer of Ownership & Control of Entergy Mississippi Inc.'s Transmission Facilities & Assets, etc.*, No. 2012-UA-358, 2013 WL 6708918, at \*1 (M.P.S.C. Dec. 10, 2013).



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generation is dispatched independently and at lowest cost, increasing market transparency and oversight, and properly aligning incentives for the construction of transmission.<sup>8</sup>

Entergy and Cleco joined MISO in December of 2013, after approvals from the FERC<sup>9</sup> and the Louisiana Commission.<sup>10</sup> The Entergy and Cleco service areas, and Entergy's operations in New Orleans, Arkansas, Mississippi, and Texas, are referred to as the MISO South region.

The Louisiana Commission approved Entergy joining MISO subject to numerous contingencies and conditions that the Commission found necessary to preserve Commission jurisdiction, to ensure that Entergy fulfills its public service responsibilities, to provide ratepayer protections, to ensure net benefits from MISO membership, and to provide access to MISO's books and records.<sup>11</sup> Finding that "Entergy's MISO membership created circumstances whereby Cleco and its ratepayers will be better off operating in MISO with Entergy rather than operating outside of MISO as an island," the Commission approved Cleco's application to join MISO with similar Conditions and Contingencies.<sup>12</sup> In 2020, the Commission found that Entergy's and Cleco's continued membership in MISO is in the public interest, subject to numerous additional

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<sup>8</sup> United States Department of Justice Press Release, *Justice Department Statement on Entergy Corp.'s Transmission System Commitments and Acquisition of KGen Power Corp.'s Plants in Arkansas and Mississippi* (Nov. 14, 2012), <https://www.justice.gov/archives/opa/pr/justice-department-statement-entergy-corp-s-transmission-system-commitments-and-acquisition>.

<sup>9</sup> See generally *Order Conditionally Accepting Tariff Revisions & Requiring Compliance Filing*, 139 F.E.R.C. ¶ 61,056 (2012); *Order on Compliance Filings & Tariff Revisions*, 142 F.E.R.C. ¶ 61,215 (2013).

<sup>10</sup> LPSC Order No. U-32148, dated June 28, 2012, Entergy Louisiana, LLC and Entergy Gulf States Louisiana L.L.C., ex parte, *In re: Joint Application Regarding Transfer of Functional Control of Certain Transmission Assets to the Midwest Independent Transmission System Operator, Inc. Regional Transmission Organization, for an Accounting Order Deferring Implementation Costs, and Request for Timely Treatment* ("LPSC Order No. U-32148"); LPSC Order No. U-32631, dated July 12, 2013, Cleco Power LLC, ex parte, *In re: Application of Cleco Power LLC for (I) Public Interest Finding in Favor of the Transfer of Functional Control of Certain Transmission Assets to the Midwest Independent System Operator, Inc. Regional Transmission Organization; (II) An Accounting Order Deferring Costs Related to Cleco Power LLC's Transmission Independent Transmission System Operator, Inc. Regional Transmission Organization; and (III) Expedited Treatment* ("LPSC Order No. U-32631").

<sup>11</sup> LPSC Order No. U-32148 at 17-33.

<sup>12</sup> LPSC Order No. U-32631 at 11.

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conditions.<sup>13</sup> Staff is currently examining the costs and benefits of Louisiana utilities' continued membership in RTOs and examining alternatives to RTO membership pursuant to a Commission directive issued at the August 16, 2023 Commission B&E.<sup>14</sup>

### **B. MISO'S ROLE IN ENSURING RELIABILITY IN LOUISIANA**

MISO acts as the North American Electric Reliability Corporation ("NERC") approved Reliability Coordinator ("RC") and Balancing Authority ("BA") for its geographic footprint. The unique roles of MISO as the RC, BA, and RTO, and ELL and Cleco as the Transmission Operators ("TOP"), are all essential to maintain reliability and security across the grid.

As the RC, MISO has area-wide responsibility to ensure that electricity across the bulk power system in its footprint is delivered safely and reliably from where it is generated to where it is used in real-time, while also ensuring visibility beyond local areas to detect and prevent cascading failures. In this RC role, MISO coordinates real-time and next-day operations between multiple entities, including TOPs and BAs, and has the authority to direct actions, including load shedding or dispatching of generation, to preserve system reliability. RC activities are governed by NERC, a non-profit organization designated by FERC, with responsibility for ensuring the reliability, security, and adequacy of the bulk power system in the US, Canada, and portions of Mexico.

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<sup>13</sup> LPSC Order No. U-34447, dated July 1, 2020, Entergy Louisiana, LLC, ex parte, *In re: Application Regarding Continued Participation in the Midcontinent Independent System Operator, Inc. Regional Transmission Organization*; LPSC Order No. U-34501, dated June 30, 2020, Cleco Power LLC, ex parte, *In re: Application Regarding the Costs and Benefits of Continued Participation in the Midcontinent Independent System Operator, Inc. Regional Transmission Organization*.

<sup>14</sup> August 16, 2023 B&E Transcript at 124-25 (directive to Staff, Cleco Power, Entergy Louisiana, and SWEPCO to perform cost benefit analyses of continued membership in current regional transmission organizations compared to alternatives, at the request of Commissioner Skrmetta).



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As the BA, MISO keeps real-time production and consumption of electricity in balance. MISO performs this function for its entire 15-state balancing authority area utilizing a Day-Ahead and Real-Time Energy Market.

The Day-Ahead Market ("DAMKT") is a reliability-constrained economic model that takes offers from all generators available to provide power for the next day and matches those offers with bids from Load Serving Entities ("LSE") of how much electricity they will need for the next day. Generator owners can either put in a market offer at or near its cost or it can choose to self-schedule the generator, meaning that the owner has decided to have the generator provide energy the next day irrespective of its economics compared to other available generation. The intended result of the DAMKT is that the most economic generators, and the self-scheduled or otherwise reliability-needed generation, will receive commitment instructions for the next day that will inform those generator owners of when to be on and ready to provide energy to the market. While the DAMKT attempts to provide the most reliable economic generation for the next day, the next day real time load, generator and transmission availability will not match exactly what was used for the DAMKT.

The Real-Time Market is run on the operating day and matches real-time updated generation offers and bids using a reliability-constrained model. The Real-Time Market sends generators the actual dispatch instructions for each time interval, informing the Generator Owners of when and how much energy to actually provide to the grid. If a generator has a long lead time for startup and does not receive a commitment from the DAMKT, its availability for a real-time market dispatch instruction is limited by that lead time because it will not be available to make such a dispatch.

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Entergy Services, LLC (sometimes referred to as "ESL," "Entergy Services," or "Entergy Transmission, LLC") and Cleco are the TOPs with local area responsibility for the real-time operation of the transmission system to ensure reliable delivery of electricity across the grid within its local area. Entergy Services acts as the TOP for both ELL and ENO. TOPs are also governed by NERC and have direct control of their local networks along with responsibility to execute emergency orders, such as load shedding or switching actions, to protect the grid during disturbances.

On May 25, 2025, MISO directed both ELL and Cleco to shed load. This type of forced outage is a controlled service interruption that MISO directed as part of its responsibilities as RC for the region. Because MISO is the RC for their service territories, ELL and Cleco, as the TOPs, were required to follow MISO's instructions and maintain each controlled outage until MISO determined the system was no longer at risk. Additionally, because ELL and Cleco are members of MISO, they are subject to MISO's administrative decisions that are necessary for the protection of the public health, safety, or environment for all MISO market participants and members.

### C. **GENERAL ORDER DATED APRIL 13, 2017 (DOCKET NO. R-32786)**

General Order dated April 13, 2017 was developed to address concerns related to storm restoration, communication, monitoring, and reporting that arose in the aftermath of Hurricane Isaac in 2012 and several other natural disasters that occurred during the pendency of that rulemaking.<sup>15</sup> Specifically, General Order dated April 13, 2017 is intended to provide a framework for all utilities in implementing "best practices" related to planning for, responding to, and communicating during and after various types of disasters and other emergencies.<sup>16</sup>

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<sup>15</sup> General Order dated April 13, 2017 at 1-3.

<sup>16</sup> *Id.* at 1-2.



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After Hurricane Isaac in 2012, the Commission retained outside consultants to investigate service restoration and communications during and in the aftermath of outages caused by the storm.<sup>17</sup> That investigation revealed discrepancies in the quality and type of information provided by utilities prior to, during, and after catastrophic events.<sup>18</sup> Based on that investigation, then-Chairman Skrmetta directed Staff to investigate the possibility of implementing a statewide outage monitoring and reporting system.<sup>19</sup> Additionally, at the Commission's August 6, 2014 B&E, Commissioner Campbell directed Staff to include a requirement in the rules for electric utilities to communicate with customers via an automated telephone and/or text messaging system to keep customers apprised of the status of outages.<sup>20</sup>

On April 27, 2015, during the pendency of the rulemaking, a storm caused widespread outages in southern Louisiana that lasted approximately five days.<sup>21</sup> Reports and discussions after that event showed that vegetation-related issues had hindered efforts to restore power. Therefore, Staff determined that it was appropriate to include additional requirements, including after-action reviews and potential penalties, in General Order dated April 13, 2017.<sup>22</sup>

At the March 2017 B&E, the Commission adopted the Emergency Planning Response Rules attached as Attachment A to General Order dated April 13, 2017 ("Attachment A"). The rules in Attachment A are applicable to all LPSC-regulated utilities and their retail service offerings unless stated otherwise in the rules.<sup>23</sup> Section III of Attachment A provides that the

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<sup>17</sup> *Id.* at 2.

<sup>18</sup> *Id.*

<sup>19</sup> *Id.*

<sup>20</sup> *Id.*

<sup>21</sup> *Id.* at 3.

<sup>22</sup> *Id.*

<sup>23</sup> *Id.* at Attachment A, Section I.

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Commission "may, at its discretion, initiate a proceeding to review any utility's response to a disaster or outage."<sup>24</sup> This After-Action Review of the May 25 Load Shed Event is conducted pursuant to Section III of Attachment A in General Order dated April 13, 2017.

The May 25 Load Shed Event differs from the events that led to General Order dated April 13, 2017 because it was not the result of natural disasters and was instead a forced outage to protect the reliability of the larger electrical grid. Although General Order dated April 13, 2017 was created largely to address emergency situations created by natural disasters, Section VI of Attachment A provides reporting requirements for reporting for these "non-emergency outages."<sup>25</sup>

### III. JURISDICTION AND AUTHORITY

The Commission has plenary authority to regulate the rates charged, services rendered, and operations of public utilities pursuant to the Louisiana Constitution, Article IV, Section 21(B), which provides:

The commission shall regulate all common carriers and public utilities and have such other regulatory authority as provided by law. It shall adopt and enforce reasonable rules, regulations, and procedures necessary for the discharge of its duties, and shall have other powers and perform other duties as provided by law.

This Constitutional grant of authority comes directly from the people. The Commission has the right and obligation to exercise its authority over both the rates charged and services rendered by public utilities in its jurisdiction.

The Commission has and exercises broad, plenary, independent power and authority to regulate common carriers and public utilities operating in Louisiana. To accomplish this goal, the

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<sup>24</sup> *Id.* at Attachment A, Section III.A.

<sup>25</sup> *See id.* at Attachment A, Section VI & n.8 (describing April 23, 2014 transmission and generation outages that resulted from a MISO request for Entergy to shed load to maintain system reliability as an example of an RTO-directed outage that falls under Section VI).



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Commission may adopt and enforce reasonable rules, regulations, and procedures necessary for the discharge of its duties.<sup>26</sup>

While the Commission unquestionably has the authority to enforce its existing rules and adopt additional rules as it deems necessary to protect reliability with respect to public utilities in Louisiana like ELL and Cleco, it exercises a form of hybrid authority over RTOs operating in Louisiana, sharing jurisdiction with federal authorities that have asserted it. Under the Federal Power Act ("FPA"), FERC has exclusive jurisdiction over the sale of electricity at wholesale in interstate commerce and the transmission of electricity across state lines, which includes oversight over RTOs in those areas.<sup>27</sup> However, the FPA preserves state jurisdiction by denying FERC authority over "any other sale of electric energy" and restricting FERC's authority "over facilities used for the generation of electric energy or over facilities used in local distribution or only for the transmission of electric energy in intrastate commerce."<sup>28</sup> The FPA further specifies that FERC's jurisdiction "extend[s] only to those matters which are not subject to regulation by the States."<sup>29</sup>

Traditionally, the states have had authority over fuel choices and the choice of which generating resources should be maintained, constructed, or used to provide electric service in its borders. Section 215(i)(3) of the FPA reserves jurisdiction over the "safety, adequacy, and reliability of electric service" to the states.<sup>30</sup> The United States Supreme Court acknowledged states' "traditional authority" in *Pacific Gas & Electric Co. v. State Energy Resources Conservation & Development*, 461 U.S. 190, 212 (1983), where it found that "states exercise their

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<sup>26</sup> *La. Power & Light Co. v. La. Pub. Serv. Comm'n*, 609 So. 2d 797, 800-01 (La. 1992).

<sup>27</sup> 16 U.S.C. § 824(b)(1); *see, e.g., Hughes v. Talen Energy Mktg., LLC*, 578 U.S. 150, 157 (2016) (discussing that FERC "extensively regulates the structure" of a wholesale capacity auction administered by an RTO).

<sup>28</sup> 16 U.S.C. § 824(b)(1).

<sup>29</sup> 16 U.S.C. § 824(a).

<sup>30</sup> 16 U.S.C. § 824o(i)(3).

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traditional authority over the need for additional generating capacity, the type of generating facilities to be licensed, land use, ratemaking, and the like."

MISO has recognized that, under the Federal Power Act and FERC precedent, state regulators and their jurisdictional utilities are vested with the authority to plan for adequate generation and to address resource adequacy needs within their jurisdictional footprints, even when the states jurisdictional utilities are members of MISO.<sup>31</sup> The MISO Transmission Owners Agreement sets forth the basis for and limitations to the authority of MISO, which includes functional control and operations of the transmission system, acting as a balancing authority, scheduling transmission service, tariff administration, transmission planning and reliability, operating capacity and energy markets and acting as the NERC Regional Reliability Coordinator.<sup>32</sup> The MISO Bylaws recognize the Organization of MISO States ("OMS"), the regional state committee for MISO, as an autonomous and self-governing body that has the right to provide input on transmission planning, resource adequacy, and cost allocation.<sup>33</sup> OMS may take policy positions based on a majority of voting members, but those positions do not bind or alter the authority of the member states.<sup>34</sup> Thus, any regulatory agency having utility rates or services jurisdiction over a MISO Member reserves the right to exercise all lawful means available to protect its existing jurisdiction and authority.

Therefore, although RTOs fall under FERC's jurisdiction in the areas of wholesale electricity markets and interstate transmission, states have authority over RTO actions as they

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<sup>31</sup> *Midcontinent Indep. Sys. Operator, Inc.*, 192 F.E.R.C. ¶ 61,064, ¶ 90 (2025).

<sup>32</sup> Agreement of Transmission Facilities Owners to Organize the Midcontinent Independent System Operator, Inc., a Delaware Non-Stock Corporation, at PDF pp. 268-69, available at [https://cdn.misoenergy.org/MISO%20TOA%20\(for%20posting\)47071.pdf](https://cdn.misoenergy.org/MISO%20TOA%20(for%20posting)47071.pdf) (last visited Oct. 8, 2025).

<sup>33</sup> *Id.*, Bylaws, § 6.3, at PDF pp. 308-309.

<sup>34</sup> Organization of MISO States Bylaws, available at [https://www.misostates.org/images/OrgDoc/BYLAWS\\_OMSasAmended13September2012.pdf](https://www.misostates.org/images/OrgDoc/BYLAWS_OMSasAmended13September2012.pdf) (last visited Oct. 8, 2025).



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impact areas under state jurisdiction, like resource adequacy, retail rates, and reliability. FERC asserted that it can override state laws that prevent utilities from joining RTOs in connection with approving SPP as an RTO, but that assertion of preemption has not been challenged or finally determined by the federal courts.<sup>35</sup> Meanwhile, the LPSC exercised its authority to impose conditions on MISO in approving Louisiana utilities' membership in that RTO.<sup>36</sup> MISO and the utilities submitted to that jurisdiction.<sup>37</sup> The Louisiana Commission can and should exercise its authority, to the maximum extent possible, to protect the public interest and ensure that reliable, adequate, and reasonably priced resources can be dispatched to meet the State's energy needs.

Furthermore, RTOs operating in Louisiana historically have complied with Commission orders regarding emergency plans, reporting requirements, and communications protocols, and have coordinated with the Commission in developing emergency response plans. For example, both MISO and SPP have filed reports after emergency energy events, filed emergency contact lists as required by the Commission's General Order dated May 31, 2022 (Docket No. R-34758),<sup>38</sup> and have complied with certain aspects of General Order Dated April 13, 2017.<sup>39</sup> As a result of

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<sup>35</sup> *Opinion No. 472*, 107 F.E.R.C. ¶ 61,271, ¶ 128 (2004) ("The Commission finds that it may exercise its authority under PURPA section 205(a) to override the laws and regulations of Virginia in order to allow AEP to integrate into PJM by October 1, 2004.").

<sup>36</sup> *See generally, e.g.*, LPSC Order No. U-32148 (assessing whether Entergy joining the MISO RTO was in the public interest and granting conditional approval, subject to certain conditions to protect the Commission's jurisdiction and protect Louisiana ratepayers); LPSC Order No. U-32631 (July 12, 2013).

<sup>37</sup> *See, e.g.*, LPSC Order No. U-32148 at 47-57; LPSC Order No. U-32631 at 10-18. MISO has made several compliance filings in Dockets No. U-32148 and U-32631 pursuant to the conditions imposed by the Commission. *See, e.g.*, Report of the Midcontinent Independent System Operator, Inc. in response to LPSC Order No. U-32148 Condition E(4) and Order No. U-32631 Condition (C)(3), Docket No. U-32148, dated March 4, 2015.

<sup>38</sup> LPSC General Order, Docket No. R-34758, dated May 31, 2022, Louisiana Public Service Commission, *ex parte*, *In re: Timely disclosure of facts and notices, regarding such matters as MaxGen alerts, to Commission and Commissioners, and related matters* ("General Order dated May 31, 2022"). The Commission subsequently issued an Order dated August 26, 2022 temporarily waiving certain provisions of General Order Dated May 31, 2022; however, those provisions are not applicable herein.

<sup>39</sup> *See, e.g.*, Report of the Midcontinent Independent System Operator, Inc. Concerning Winter Storm Elliott MaxGen Event, Docket No. R-34758 (Apr. 25, 2023); Designated Energy Emergency Contacts for Midcontinent Independent System Operator, Docket No. R-34758 (May 23, 2023); Report on Energy Emergency Alert 1 for

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this review, the Commission can and should exercise its authority to enforce its existing rules to protect the public interest and to amend those rules as suggested in this Report to ensure better handling of load shed events in Louisiana in the future.

#### **IV. THE CAUSES, INCLUDING ROOT CAUSES, OF RTO-DIRECTED LOAD SHEDS IN ENTERGY AND CLECO SERVICE TERRITORIES.**

##### **A. TIMELINE OF EVENTS**

On Sunday, May 25, 2025, around 3:59 p.m. EST, MISO declared a Transmission System Emergency due to a temporary IROL<sup>40</sup> identified on the [REDACTED]

After evaluating all other available options, and as a measure of last resort, MISO directed load sheds generally in the New Orleans and Slidell areas to Entergy (which includes ELL and ENO) at 4:20 PM EST for 500 MW of load and to Cleco at 4:26 PM EST for 100 MW of load.

At 4:53 PM EST, MISO had indications that the IROL exceedance had been mitigated, however load shedding and restoration activities extended beyond that time.

At 5:48 PM EST, MISO began issuing orders to restore load. At 7:00 PM EST, Cleco informed MISO that all load previously ordered to be shed had been restored. At 8:49 PM EST, Entergy reported that all load except for one feeder breaker with issues had been restored. At 10:43 PM EST, Entergy reported that all load previously ordered to be shed had been restored.

A more detailed confidential timeline of events is provided below in Table 1:

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Southwest Power Pool, Inc., Docket No. R-34758 (Oct. 24, 2024); Energy Emergency Contact for Southwest Power Pool, Inc., Docket No. R-34758 (Aug. 28, 2024).

<sup>40</sup> Interconnection Reliability Operating Limit (IROL): A system operating limit that, if violated, could lead to instability, uncontrolled separation, or cascading outages that adversely impact the reliability of the Bulk Electric System.



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Table 1<sup>41</sup>

|           |                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5/21/2025 | 1408<br>2:08 PM EST  | River Bend Nuclear, a 1,000+ MW generating station, entered and unplanned outage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 5/22/2025 |                      | Entergy's Transmission Control Center ("TCC") sent an e-mail to MISO addressing potential constraints in the Amite South area, along with reconfiguration options to alleviate those constraints. Based on studies performed by Entergy's transmission operations team, it suggested a mitigation plan to MISO that would reconfigure the system to redirect power flow through the region. MISO agreed with the proposed reconfiguration option.                                                                                                                |
| 5/23/2025 | 1655<br>4:55 PM EST  | A 590 MW generating station entered an unplanned outage.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 5/24/2025 | 1125<br>11:25 AM EST | <p>MISO RCs notified Entergy that there was very little generation left to re-dispatch for:</p> <div style="background-color: black; height: 80px; width: 100%;"></div> <p>Entergy was informed that post-contingent load-shed would have to be included in the post-contingent action plan.</p>                                                                                                                                                                                                                                                                 |
| 5/24/2025 | 1518<br>3:18 PM EST  | A 440 MW generating unit began reducing load to come offline due to a mechanical issue.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5/24/2025 | 1531<br>3:31 PM EST  | <p>MISO notified Entergy that Rodermacher 2 coming off line and would have negative impact on <span style="background-color: black; color: blue;">[REDACTED]</span></p> <p>MISO RC mentioned this would increase the amount of <b>post-contingent</b> load shed if required.</p> <p>Entergy informed MISO that they were studying a reconfiguration option for <span style="background-color: black; color: green;">[REDACTED]</span> to provide some relief on the constraint (i.e. <span style="background-color: black; color: green;">[REDACTED]</span>)</p> |

<sup>41</sup> Information summarized from ELL and MISO After-Action Reports as well as numerous responses to data request.

<sup>42</sup> The [REDACTED] constraint is in blue font, while the [REDACTED] constraint is shown in green font.

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|           |                      |                                                                                                                                                                                                                               |
|-----------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5/24/2025 | 1548<br>3:48 PM EST  | MISO and Entergy agreed that opening the [REDACTED] [REDACTED] could be part of the post-contingent action plan but it would only help slightly and would not eliminate the need for a load shed.                             |
| 5/24/2025 | 1819<br>6:19 PM EST  | MISO asked Entergy whether any chance of Nelson – Richard 500kV line back in service prior to May 30.                                                                                                                         |
| 5/24/2025 | 1845<br>6:45 PM EST  | Entergy responded that Nelson – Richard 500kV could not be returned early.<br><br>MISO RC's mentioned that due to the transmission constraints, load-shed would be required for post contingency action.                      |
| 5/25/2025 | 0155<br>1:55 AM EST  | MISO began coordinating with SERC <sup>43</sup> and Entergy to study possible transmission system reconfiguration options to alleviate predicted transmission system congestion around the New Orleans area later in the day. |
| 5/25/2025 | 0303<br>3:03 AM EST  | ESL discussed the proposed reconfiguration option with MISO, and MISO confirmed that the reconfiguration option was valid.                                                                                                    |
| 5/25/2025 | 0838<br>8:38 AM EST  | SERC agreed to the transmission reconfiguration at the Adams Creek substation to allow 235 MW units to come online and help with congestion.                                                                                  |
| 5/25/2025 | 1141<br>11:41 AM EST | Entergy agreed to implement the transmission reconfiguration at the Adams Creek substation.                                                                                                                                   |

<sup>43</sup> SERC Reliability Corporation, under FERC-approved delegation agreement with NERC, is responsible for the reliability and security of the electric grid across the southeastern and central regions of the United States.



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|-----------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5/25/2025 | 1256<br>12:56 PM EST | <p>Entergy agreed to a transmission reconfiguration <b>post-contingent</b> action at the [REDACTED] substation for the [REDACTED] contingency.<sup>44</sup></p> <p>MISO's response to Staff Data Request 1-7(i) states: MISO informed Entergy that this reconfiguration will alleviate the need for some of the post-contingent load-shed.</p> <p>Entergy's responses to Staff Data Requests 1-1 and 5-7 state: MISO stated on a call with the TCC that the reconfiguration "relieves the constraint entirely. At that point in time, we don't even have to shed load."</p> <p>MISO's After-Action Report changed prior statement to: At that time, MISO informed Entergy that this reconfiguration would alleviate the need for the post-contingent load shed.</p> |
| 5/25/2025 | 1329<br>1:29 PM EST  | <p>Entergy agreed to a <b>post-contingent</b> action plan for the [REDACTED] involving lowering generation of the Bayou Cove 1, 2, and 3 units (116 MW), and the Lake Charles Bulk unit (930 MW).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 5/25/2025 | 1348<br>1:48 PM EST  | <p>MISO began coordinating with Entergy on a transmission reconfiguration at the Lake Charles Bulk substation to mitigate transmission congestion in and around the Lake Charles area caused by west to east flows into the New Orleans area with the Nelson – Richard 500kV line out of service.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 5/25/2025 | 1406<br>2:06 PM EST  | <p>MISO recommended implementing the reconfiguration at Lake Charles Bulk immediately pre-contingent.</p> <p>Entergy responded they would get back to MISO after discussing the reconfiguration with management.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 5/25/2025 | 1418<br>2:18 PM EST  | <p>MISO requested Entergy study a transmission reconfiguration involving Bayou Cove substation in combination with the 930 MW Lake Charles Bulk reconfiguration.</p> <p>Entergy responded they would have to get manager approval prior to agreeing to these reconfigurations.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

<sup>44</sup> MISO Response to Staff Data Request 3-5.

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|-----------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5/25/25   | 1423<br>2:23 EST    | Entergy informed MISO that they were experiencing a real-time overload of the [REDACTED]. Entergy told MISO that immediate action was needed to remedy this, and MISO agreed to manually adjust the output of one of the 116 MW units in response.                                                                                                                                                                                                      |
| 5/25/2025 | 1429<br>2:29 PM EST | Entergy informs MISO that the transmission reconfiguration at Lake Charles Bulk and Bayou Cove result in unsolved contingencies.                                                                                                                                                                                                                                                                                                                        |
| 5/25/2025 | 1452<br>2:52 PM EST | <p>MISO informed Entergy that a likely cause of the unsolved contingencies in Entergy's study results was the fact that MISO does not monitor Entergy's 69kV transmission lines.</p> <p>Entergy was concerned that the [REDACTED] was now loading close to the Temperature Adjusted Rating. Entergy wanted MISO to lower the generation at Bayou Cove and Lake Charles Bulk.</p> <p>MISO agreed to begin using market binding to lower this loading</p> |
| 5/25/2025 | 1506<br>3:06 PM EST | MISO agreed to bind the Bayou Cove units lower due to MISO's state estimator solving lower than real-time values for the [REDACTED]                                                                                                                                                                                                                                                                                                                     |
| 5/25/2025 | 1521<br>3:21 PM EST | <p>Entergy informed MISO that due to unsolved voltage results in their studies they would not agree to the transmission reconfigurations at Lake Charles Bulk and Bayou Cove.</p> <p>Entergy wanted MISO to continue to decrease generation at the Bayou Cove and Lake Charles Bulk units.</p>                                                                                                                                                          |
| 5/25/2025 | 1530<br>3:30 PM EST | <p>Entergy informed MISO that the [REDACTED] was exceeding its emergency rating.</p> <p>MISO dispatched the Bayou Cove 1 unit to its economic minimum generation level.</p>                                                                                                                                                                                                                                                                             |



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|-----------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5/25/2025 | 1541<br>3:41 PM EST | <p>Entergy informed MISO that they are still exceeding the emergency ratings for the [REDACTED]</p> <p>MISO dispatched the Bayou Cove 3 (116 MW) and Bayou Cove 4 (116 MW) units to their economic minimum generation level.</p> <p>MISO explained to Entergy that this may not solve the problem as the overall issue was the limited transmission system capability to serve load.</p> <p><u>MISO states:</u> The transmission and generation dynamics that unfolded between 1300 and 1545, particularly involving the [REDACTED], the status of three 116 MW units, and the sustained unavailability of support across the Lake Charles Bulk 138kV interface, heavily impacted the amount of load flowing on other import lines. At this point, there was no capacity to increase the amount of electricity flowing into the load pocket.</p> |
| 5/25/2025 | 1559<br>3:59 PM EST | <p>MISO informed Entergy that they were declaring a Transmission System Emergency (TSE) due to a cascading outage study result that found that the loss of the [REDACTED] would have resulted in the overload of the [REDACTED] the loss of which would have caused further cascading outages and possible voltage collapse.</p> <p><u>ELL states:</u> MISO did not request any action at that time and did not indicate that the previously discussed reconfiguration proposal was not effective.</p> <p>As total amount of load that would be lost could not be determined immediately, MISO made the conservative decision to treat the [REDACTED] as a temporary IROL</p>                                                                                                                                                                    |

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|-----------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5/25/2025 | 1602<br>4:02 PM EST | <p><b>MISO issued a declaration of a TSE via Operator Interface<sup>45</sup> for the temporary IROL post contingent exceedance of [REDACTED]</b></p> <p>[REDACTED]</p> <p>Between 1602 and 1620, studies were run related to a reconfiguration of [REDACTED] as a possibility in lieu of load shed.</p> <p>However, while the proposed solution helped address one specific issue, it ultimately worsened other system constraints that operators were already struggling to manage in the Lake Charles, LA and Brookhaven, MS area.</p> |
| 5/25/2025 | 1604<br>4:04 PM EST | <p>Entergy informed MISO that the [REDACTED] was no longer exceeding its emergency rating.</p> <p>MISO also raised Marginal Value Limit ("MVL") resulting in increased market action to reduce emergency rating exceedance.</p> <p>MISO requested ESL operational personnel to study and review the reconfiguration solution again to compare results in preparation for potential implementation.</p>                                                                                                                                   |
| 5/25/2025 | 1608<br>4:08 PM EST | <p>MISO Shift Manager posted, via the Reliability Coordinator Information System ("RCIS"), that a Transmission System Emergency was declared upon confirmation of and IROL on the [REDACTED]</p>                                                                                                                                                                                                                                                                                                                                         |

<sup>45</sup> Table 1 entries related to IROL events are shaded in light purple.



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|           |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5/25/2025 | 1620<br>4:20 PM EST | <p><b>MISO issued an operating instruction to Entergy to shed<sup>46</sup> 500 MW of load in the New Orleans and Slidell area</b> effective immediately, until further notice</p> <p><u>ELL states:</u> By a phone call from MISO to the Transmission Operators at the TCC in Jackson, Mississippi, MISO issued a directive to ELL and ENO to "shed 500 MWs of load in the Slidell and New Orleans areas until further notice." MISO did not specify that the load shed was to respond to IROL-like conditions or to emergency conditions following an IROL study. The TCC's real-time models did not show the necessity for load shed with the reconfiguration option implemented.</p> |
| 5/25/2025 | 1625<br>4:25 PM EST | Entergy called MISO to confirm that load shed would occur prior to attempting the reconfiguration and MISO responded that it wanted the load shed done immediately.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 5/25/2025 | 1628<br>4:28 PM EST | <b>MISO issued an operating instruction to Cleco to shed 100MW in the Northshore area</b> effective immediately, until further notice.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 5/25/2025 | 1629<br>4:29 PM EST | Per MISO's response to Staff Data Request 1-60, this was <b>the deadline to mitigate IROL exceedance within 30 minutes</b> of its identification which started at 3:59 PM EST.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 5/25/2025 | 1632<br>4:32 PM EST | <p>Cleco called MISO to ask the reason for the load shed order. MISO responded by explaining the generation and transmission situation requiring the order.</p> <p>Cleco responded that they were working on implementing the order.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                |

<sup>46</sup> Table 1 entries related to load shed are shaded in light blue.

**PUBLIC VERSION**

|           |                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5/25/2025 | 1633<br>4:33 PM EST | <p>ESL began to shed load on behalf of ELL and ENO. Consistent with standard practices, the Distribution Operations Center ("DOC") initially began the load shed process. The TCC relayed MISO's instruction verbatim to the DOC. Due to the lack of specificity in MISO's load shed instruction, ESL was not able to identify the specific load shed protocols to activate. The DOC stated they could not shed load in the Slidell area as it is under the control of Cleco.</p> <p>Accordingly, the ESL Transmission Operations team identified ELL and ENO load in the New Orleans area as the load to be shed in compliance with MISO's locational directive. The TCC instructed the DOC to continue with the Operating Instruction in the New Orleans area. The DOC stated that they did not have 500 MW in the load shed tool, but they would start shedding load.</p> |
| 5/25/2025 | 1639<br>4:39 PM     | 75 MW of load had been shed from the Entergy distribution system. Because the load shed at the distribution level was not resulting in enough load shed fast enough, the TCC instructed the DOC to discontinue shedding load at the distribution level. The TCC began opening circuit breakers to shed load at the transmission level.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 5/25/2025 | 1640<br>4:40 PM EST | <p>MISO called Entergy to get an update on the amount for load shed.</p> <p>Entergy responded that they had shed 75MW using the distribution system and they were working on shedding load using the transmission system.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 5/25/2025 | 1653<br>4:53 PM EST | <p>Per MISO's response to Staff Data Request 1-60, MISO had indications from its real time monitoring and situational awareness tools <b>the IROL exceedance had been mitigated</b>. This placed the IROL exceedance at approximately 54 minutes, though actual load shedding and restoration activities extended beyond that point.</p> <p><u>ELL states:</u> Although MISO did not declare a Temporary IROL to ELL, ENO, or ESL on May 25, MISO since has specified that the May 25 Load Shed Event was a Temporary IROL event. It is Entergy's understanding that 4:53 pm would be the end of the classification as a Temporary IROL. Entergy does not know the time that the Temporary IROL started.</p>                                                                                                                                                                 |
| 5/25/2025 | 1710<br>5:10 PM EST | Cleco informed MISO that as of 5:05 PM, Cleco had shed 104MW of load.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



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|           |                     |                                                                                                                                                                                                                                                                                                                                |
|-----------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5/25/2025 | 1713<br>5:13 PM EST | Entergy informed MISO that they had shed 585MW of load                                                                                                                                                                                                                                                                         |
| 5/25/2025 | 1742<br>5:42 PM EST | MISO and Entergy began coordinating to perform the transmission reconfiguration at the [REDACTED] substation as previous low voltages negated the feasibility of previously agreed to reconfiguration.                                                                                                                         |
| 5/25/2025 | 1748<br>5:48 PM EST | MISO issued an Operating Instruction to Entergy to restore 100 MW of load in New Orleans area. [Total ELL load restored at this point: 100 MW]                                                                                                                                                                                 |
| 5/25/2025 | 1749<br>5:49 PM EST | MISO issued an Operating Instruction to Cleco to restore 20MW of load previously shed. [Total Cleco load restored at this point: 20 MW]<br><br>Cleco informed MISO that they would accomplish this by shedding 80MW in one area and restoring 100MW in a different area at the top of the hour, in a rolling blackout scheme.  |
| 5/25/2025 | 1752<br>5:52 PM EST | Entergy called MISO to inform them that their initial report of 585 MW of shed load was incorrect, the actual value was 460 MW of load shed, asking if this would change MISO's Operating Instruction to restore 100 MW of load. MISO responded to carry out the Operating Instruction and restore 100 MW of load.             |
| 5/25/2025 | 1804<br>6:04 PM EST | MISO called Entergy to evaluate additional load restoration with the understanding that post-contingent load-shed would be needed if the [REDACTED] contingency were to occur.                                                                                                                                                 |
| 5/25/2025 | 1805<br>6:05 PM EST | Cleco informed MISO that the 20MW of load restoration was completed.                                                                                                                                                                                                                                                           |
| 5/25/2025 | 1806<br>6:06 PM EST | Entergy and MISO discussed sequence of evaluation for reconfiguration and implementation and further load restoration.<br><br>Entergy informed MISO that they would prefer to wait until after the [REDACTED] transmission reconfiguration has been evaluated and implemented before any further load restoration takes place. |
| 5/25/2025 | 1816<br>6:16 PM EST | Cleco informed MISO that they had completed their study of the [REDACTED] transmission reconfiguration and were good with proceeding with implementation.<br><br>MISO issued an Operating Instruction to Cleco to implement the [REDACTED] transmission reconfiguration.                                                       |

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|-----------|---------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5/25/2025 | 1818<br>6:18 EST    | The reconfiguration solution described above was implemented to assist with the restoration of load.                                                                                                                                                                                                                             |
| 5/25/2025 | 1822<br>6:22 PM EST | MISO issues an Operating Instruction to Entergy for an additional 100 MW of load to be restored. [Total Entergy load restored at this point: 200 MW]                                                                                                                                                                             |
| 5/25/2025 | 1822<br>6:22 PM EST | MISO issues an Operating Instruction to Cleco for an additional 20 MW of load to be restored. [Total Cleco load restored at this point: 40 MW]                                                                                                                                                                                   |
| 5/25/2025 | 1836<br>6:36 PM EST | Cleco informed MISO that they had completed the Operating Instruction to restore 20 MW of load.<br><br>MISO issued Cleco an Operating Instruction to restore an additional 20MW of load. [Total Cleco load restored at this point: 60 MW]                                                                                        |
| 5/25/2025 | 1843<br>6:43 PM EST | Entergy informed MISO that they had completed the Operating Instruction to restore 100 MW of load.<br><br>MISO issued Entergy and Operating Instruction to restore an additional 100 MW of load. [Total Entergy load restored at this point: 300 MW]                                                                             |
| 5/25/2025 | 1847<br>6:47 PM EST | Cleco informed MISO that the Operating Instruction to restore 20MW of load was completed.<br><br>MISO issued an Operating Instruction to restore the remaining 40 MW of load shed. [Total Cleco load restored at this point: 100 MW]                                                                                             |
| 5/25/2025 | 1900<br>7:00 PM EST | <b>Cleco informed MISO that all load previously ordered to be shed had been restored.</b>                                                                                                                                                                                                                                        |
| 5/25/2025 | 1924<br>7:24 PM EST | Entergy informed MISO that due to load dropping off, finding the 100MW of load to restore from the previous load restoration Operating instruction was becoming more difficult.<br><br>MISO issued Entergy an Operating Instruction to restore an additional 100 MW of load. [Total Entergy load restored at this point: 400 MW] |
| 5/25/2025 | 1935<br>7:35 PM EST | MISO issues an Operating Instruction to Entergy to restore the final 100 MW of load originally shed. [Total Entergy load restored at this point: 500 MW]                                                                                                                                                                         |



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|           |                     |                                                                                                                                                       |
|-----------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5/25/2025 | 2005<br>8:05 PM EST | MISO Shift Manager posted to RECI that the TSE had officially ended, as the system had stabilized following successful load shed and reconfiguration. |
| 5/25/2025 | 2049<br>8:49 PM EST | <b>Entergy reports all load has been restored except for one feeder breaker which was having issues.</b>                                              |
| 5/25/2025 | 2243<br>10:43 EST   | Entergy reports that all load previously ordered to be shed had been restored.                                                                        |

### **B. CAUSES OF LOAD SHED EVENT**

The root cause for the May 25 Load Shed Event was MISO's declaration of a Transmission System Emergency due to a temporary IROL identified on the [REDACTED]

[REDACTED] This temporary IROL was driven by a combination of factors, primarily (i) the limited transfer capability caused by the ongoing outage of the Nelson–Richard 500 kV line (due to March storms); (ii) lack of available generation in the Amite South load zone due to both planned and unplanned outages; and (iii) the pre-defined parameters of MISO's unique "temporary" IROL designation, which required an immediate load shed for a projected post-contingent exceedance without reasonable notice.

The Amite South Load Zone, located in southeastern Louisiana, is a transmission-constrained area within the Entergy system that includes the Greater New Orleans metropolitan area and surrounding parishes. Amite South is recognized by MISO as a distinct load pocket because of its limited transmission import capability and reliance on a finite set of local generating resources to maintain reliability. The primary limiting factors are the region's geography and resulting network topology—a peninsular, water-bounded landscape that restricts right-of-way corridors and yields a grid with few high-capacity ties and relatively long, corridor-dependent elements—thereby constraining transfer capability and voltage support. The zone has historically experienced binding transmission constraints during periods of high demand or generator outages,

which can result in elevated congestion costs and localized reliability concerns. Due to these characteristics, the Amite South Load Zone is frequently referenced in resource adequacy, transmission planning, and reliability assessments.

**1. Transmission and Generator Outage Contributions to the May 25 Load Shed Event**

The primary transmission contribution to the May 25 Load Shed Event was the outage of the Nelson – Richard 500 kV line, which went out of service on March 24, 2025 due to damage caused by severe weather. At the time of the May 25 Load Shed Event, this line was planned to come back in service on May 30, 2025. Entergy was able to return the line to service on May 27, 2025 at around 7:00 PM. The Nelson–Richard 500 kV transmission line is a critical pathway for delivering bulk power into the Amite South load pocket, significantly enhancing its limited transmission import capability and helping to maintain reliability under high-load and contingency conditions. When this line is out, Amite South's import limit materially declines and operators must rely on costly local redispatch and must-run commitments to maintain voltage and stability. The system can approach N-1/N-1-1 reliability thresholds - raising the risk of emergency procedures and, in extreme cases, firm-load curtailments.<sup>47</sup>

Regarding generator outages, Staff reviewed numerous responses to data requests and outage information provided by MISO, ELL, and Cleco related to generation outages that contributed to the load shed, and, although the information did not perfectly align, Table 2 below presents a materially accurate compilation of the generator outage information.

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<sup>47</sup> An N-1 N-1-1 NERC contingency (or N-1-1 contingency) is a power system reliability analysis, mandated by the NERC TPL-001-4 standard, that studies a system's ability to withstand a sequential failure of two components (transmission or generation) in a row. It involves two stages: first, assessing the impact of losing a single "N-1" component, then analyzing the system's behavior again after the primary loss and a subsequent "N-1" failure, leading to the overall "N-1-1" contingency scenario. This analysis identifies and helps mitigate risks of cascading outages and ensures the grid's resilience to multiple failures.



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Table 2<sup>48</sup>

| Owner                  | Unit                        | MW Out       | Purpose                                                    | Submitted Date | Submitted Time | Approved  | Planned Start | Planned End | Return to Service                 |
|------------------------|-----------------------------|--------------|------------------------------------------------------------|----------------|----------------|-----------|---------------|-------------|-----------------------------------|
| <b>PLANNED OUTAGES</b> |                             |              |                                                            |                |                |           |               |             |                                   |
| Entergy                | Ninemile Unit 4             | 750          | Repair Facility                                            | 10/3/2024      |                | 2/21/2025 | 3/1/2025      | 5/30/2025   |                                   |
| Entergy                | Waterford Nuclear Unit 3    | 1,214        | Refuel Outage                                              | 8/9/2024       |                | 4/23/2025 | 4/26/2025     | 6/10/2025   |                                   |
| Cleco Power            | Rodermacher Unit 1          | 620          | General Maintenance                                        | 6/20/2024      |                | 5/15/2025 | 5/23/2025     | 6/5/2025    |                                   |
| Cleco Power            | Nesbitt 1                   | 400          |                                                            |                |                |           | 5/23/2025     | 6/5/2025    |                                   |
|                        | <b>PLANNED OUTAGE TOTAL</b> | <b>2,984</b> |                                                            |                |                |           |               |             |                                   |
| <b>FORCED OUTAGES</b>  |                             |              |                                                            |                |                |           |               |             |                                   |
| Entergy                | Little Gypsy 3              | 535          | Turbine Issues                                             | 4/1/2025       |                |           |               |             | 8/10/2025                         |
|                        |                             |              |                                                            |                |                |           |               |             |                                   |
| Entergy                | Riverbend                   | 1,080        | Equipment Issue                                            | 5/21/2025      | 6:30           |           |               |             | 5/26/2025                         |
| Cleco                  | Cleco Acadia                | 640          | Equipment Failure                                          | 5/22/2025      | 14:29          |           |               |             | 5/30/2025                         |
|                        |                             |              |                                                            |                |                |           |               |             |                                   |
| Cleco                  | Rodermacher 2               | 547          | Boiler Tube Leak                                           | 5/24/2025      | 15:26          |           |               |             | 5/28/2025                         |
|                        |                             |              |                                                            |                |                |           |               |             |                                   |
| Entergy                | Washington Parish CT2       | 235          | Valve Issues (lasted just over 3 hours)                    | 5/25/2025      | 13:09          |           |               |             | 5/25/2025<br>16:19<br>4:19 PM EST |
|                        | <b>FORCED OUTAGE TOTAL</b>  | <b>3,937</b> |                                                            |                |                |           |               |             |                                   |
| <b>FORCED DERATES</b>  |                             |              |                                                            |                |                |           |               |             |                                   |
| Entergy                | Coughlin 7                  | 190          | Weather Catastrophe-CTI Tripped                            | 3/31/2025      |                |           |               |             | 6/11/2025                         |
| Entergy                | Entergy Acadia              | 241          | Weather/Catastrophe - Unit below Must Offer due to ambient | 5/13/2025      |                |           |               |             | 6/1/2025                          |
| Entergy                | Little Gypsy 2              | 25           | 3 Burners Unavailable                                      | 5/23/2025      | 13:00          |           |               |             | 5/27/2025                         |
| Entergy                | Waterford 2                 | 236          | Boiler Tube Leak                                           | 5/23/2025      | 17:30          |           |               |             | 6/19/2025                         |
|                        |                             |              |                                                            |                |                |           |               |             |                                   |
| Entergy                | St Charles (JWL)            | 191          | Unknown-ambient Temperature                                | 5/25/2025      | 10:55          |           |               |             | 5/25/2025<br>22:00<br>10:00 EST   |
|                        | <b>FORCED DERATE TOTAL</b>  | <b>1,093</b> |                                                            |                |                |           |               |             |                                   |

<sup>48</sup> Entries on Table 2 for [REDACTED] are confidential and will be redacted in the public version of this report.

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Table 2 illustrates that, although the level of Planned Generation was not problematic, there was a material number of forced outages and forced derates, which drove total generator outages for the Amite South Load Zone to greater than 50%. The generator outages and derates were not concentrated to any one generator owner, but rather were widely dispersed among generator owners, both regulated and unregulated. Staff's high-level review of the outages for the regulated entities do not indicate a concern regarding potential imprudent behavior; however, that full review will take place in the future Fuel Adjustment Clause audits for ELL and Cleco for 2025, unless the Commission orders an earlier review. Staff has no ability to review the more than 1 GW of outages and derates for the unregulated resources that contributed to the May 25 Load Shed Event, but it has been able to confirm that some cooperative load in the Amite South load pocket has relied on some of that capacity to meet its planning reserve margin.

In addition to outages, there were certain generators that did not follow their dispatch instructions, which contributed to the flow on the constrained line: [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

No explanation was provided as to why [REDACTED] failed to curtail as instructed, which is concerning.

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<sup>49</sup> Generation Shift Factor (GSF): The linear (DC) power-flow sensitivity, in MW/MW, of flow on a specified monitored element (line/transformer) to a 1-MW increase in output at a given generator bus, paired with an equal 1-MW withdrawal at a defined sink (e.g., the system reference or distributed load), for the stated topology/contingency. A positive GSF means raising that generator's output increases flow in the constrained direction; a negative GSF means it reduces it.



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As of the time of this report, Staff has been unable to obtain information regarding all of the generation in the Amite South load pocket, including generation relied upon by cooperative load located in the Load Zone. Staff is aware that the load of both the regulated investor-owned utilities ("IOUs") and cooperatives is served by load that is remote to Louisiana, some as far away as Michigan. Staff appreciates Pelican Power, LLC providing its generation for review, but that information is required to remain confidential for this report. Further, based on disclosures made in the MISO Market Monitor's review of the event, Staff suspects that some of the non-regulated generation in the load pocket serving load did not follow dispatch instructions in a manner that increased the flow on the constraint; however, Staff has no way to verify this.

Regarding generation's contribution to the event, Staff notes that one available unit had been identified as capable of mitigating the constraint; however, given the timing of the final outage, committing it at that juncture would not have provided timely relief. Even before that outage, the Amite South load pocket was operating with an elevated level of forced outages. In light of these conditions, Staff questions whether the current thresholds for committing additional generation to manage anticipated voltage and reliability risks are set appropriately. Staff recognizes that earlier or additional commitments increase costs to customers; nevertheless, following the May 2025 Load Shed Event, a reassessment of commitment criteria is warranted.

### **2. MISO's "Temporary IROL" Criteria**

MISO's "Temporary IROL" is a MISO-specific, real-time operating designation (not a NERC-defined term) used when Real Time Contingency Analysis ("RTCA")<sup>50</sup> indicates that a

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<sup>50</sup> Real-Time Contingency Analysis (RTCA) is a continuous, State Estimator (SE)-based study that forecasts the post-contingent state (flows/voltages) for each credible outage. A "post-contingent overload" means the simulated contingency drives a facility above its emergency rating; the RC/TOP must act pre-contingent to reduce base-case stress so the system will stay (or be returned) within limits if the contingency actually occurs.

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credible post contingent loss of an element would load a monitored facility to  $\geq 125\%$  of its emergency rating and the associated cascading-loss risk exceeds roughly 1,000 MW. Upon identifying that condition, MISO conducts a 15-minute stability/cascade evaluation. If the study confirms the risk—or cannot be completed within 15 minutes—MISO treats the situation as an IROL exceedance, and the IROL Tv applies. In NERC usage, IROL Tv is the maximum allowable time to return the system to within an Interconnection Reliability Operating Limit after an IROL exceedance is identified (NERC caps Tv at  $\leq 30$  minutes). The RC must act or direct actions so the system is back within limits before Tv expires. In MISO's "Temporary IROL" process, the 15-minute evaluation window is treated as part of (or leading into) that Tv clock, which is why actions can escalate quickly. To meet Tv, MISO may direct pre-contingent mitigation, up to and including firm load shed, if redispatch, topology changes, and emergency transactions cannot assure a timely return to limits. The construct is documented in MISO's internal System Operations procedures (not a BPM)<sup>51</sup> and is not generally used by other RCs' Forecast Contributions.

Based on MISO's and ELL's After-Action Reports and the discovery produced in this docket, Staff is concerned that MISO's self-defined real-time "Temporary IROL" design forces planning into the mitigation window and limits effective targeting, coordination, and transparency. Those concerns are identified in more detail below:

- Deterministic, MISO-specific trigger.

MISO's real-time "Temporary IROL" is not a NERC-defined concept and is unique among RCs. By internal procedure, the status is set when RTCA shows a credible loss would load a facility  $\geq 125\%$  of its highest emergency rating and cascading risk exceeds a defined

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<sup>51</sup> Business Practices Manual. The MISO BPMs provide formal written guidance on the application of tariff provisions.



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threshold (e.g., >1,000 MW of load). If the 15-minute cascading study can't be completed, MISO still treats the condition as an IROL exceedance. In practice, this design compels pre-contingent firm load shed if redispatch/topology/transfers can't ensure return to limits within the IROL Tv.

- Planning and execution are conflated.

The same threshold that surfaces the risk ( $\approx 125\%$  post-contingent) is also used as the action trigger, collapsing analysis, coordination, and targeting into the Tv window. That contrasts with peer RC practice, where IROLs are pre-identified and TOs have operating guides and pre-staged options before a violation clock starts.

- Clock ambiguity and time pressure.

The Temporary IROL construct starts (or consumes) the IROL Tv while operators are still validating grid stability and potential for cascading risk (the 15-minute evaluation), leaving less time for targeted, lower-impact mitigations. On May 25, mitigation confirmation occurred beyond the 30-minute Tv, underscoring the operational strain this design creates.

- Hours of notice, but no pre-event outreach.

As shown in Figure 1 below, RTCA indicated sustained stress well before the shed order (e.g.,  $\geq 110\%$  from  $\sim 12:00$ ,  $\geq 120\%$  from  $\sim 14:20$ ,  $\geq 125\%$  from  $\sim 15:30$ , peaking  $\sim 132.6\%$  at  $\sim 16:20$ ). Yet there was no pre-event communication to affected TOs (no Conservative Ops/EEA type notices, no coordination call, no circulation of load shift factors or an asset-specific load-shed plan) prior to the 500 MW load shed directive.

FIGURE 1



- Targeting and transparency gaps at the moment of shed.

MISO's load shed instruction did not specify substations/feeders, MW blocks, exclusions, or an implementation sequence, forcing TOs to improvise under Tv pressure. There was also no clear declaration of the Temporary IROL state or explicit Tv timestamp, and no contemporaneous log of alternatives attempted or rejected with expected MW relief.

- Model alignment and tool readiness.

Differences between MISO's broader model and the TO's equivalenced model complicated evaluation of local reconfiguration (e.g., [REDACTED]). Demand-side tools (e.g., LMRs) were practically unavailable given 2–6 hour lead times—another reason early signaling matters.

- Threshold calibration and proportionality.

Using 125% as both detection and action threshold risks early curtailment relative to



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industry protection philosophy (e.g., relay loadability contexts often reference 150%). Absent a transparent, stakeholder-vetted rationale, the criterion may be more conservative than necessary, increasing the chance of shedding when targeted planning could suffice.

- Customer impact in constrained pockets.

In load pockets like Amite South, defaulting to broad, late-stage curtailments—without pre-staged, asset-level targeting—increases the likelihood of over-shedding or impacting critical loads.

In their After-Action Reports, both MISO and ELL acknowledged at least some of the concerns identified by Staff above and proposed some potential solutions or actions. ELL asks MISO to make Temporary IROL actions more explicit and targetable—i.e., clearly declare when a Temporary IROL is invoked (or when the 15-minute study can't be finished), to stamp the implementation time, and to include a substation list/load shift factor ("LSFs")<sup>52</sup> or defined electrical boundaries with any shed order. ELL also proposes methods to improve pre-event readiness (interruptible-load protocols, drills/training, proactive internal triggers), tighter model alignment and reconfiguration coordination with MISO, and engaging NERC on clearer guidance on the 125% vs. PRC-023/150% threshold question.<sup>53</sup> MISO commits to evaluate adjustments to internal procedures, review its forward-reliability process, continue LMR reforms, and—starting

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<sup>52</sup> Load Shift Factor (LSF): The linear DC power-flow sensitivity, in MW per MW, of flow on a specified monitored element to a 1-MW change in load at a given bus, with an equal balancing injection at a defined sink (e.g., the system slack or distributed across generation) for the stated topology/contingency. Sign convention: a positive LSF means increasing that load increases constrained-direction flow—so shedding 1 MW at that bus is expected to reduce the monitored flow by  $LSF \times 1 \text{ MW}$ .

<sup>53</sup> PRC-023 (Transmission Relay Loadability): a NERC reliability standard that requires transmission owners (and certain generator/distribution owners) to set load-responsive phase relays so they do not operate for load up to specified margins—most commonly no operation at or below 150% of the highest seasonal Facility Rating (or  $\geq 115\%$  of a published 15-minute emergency rating), with additional criteria for cases like series-compensated lines and weak-source systems. Its purpose is to ensure relay settings do not unduly limit transmission loadability during stressed conditions while still providing dependable fault protection.

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in the third quarter of 2025—work through the stakeholder process to improve pre-emergency and emergency communications with member utilities. MISO supports its 125% Temporary IROL screen, but says it is open to stakeholder review of that value.

In addition to, and in coordination with ELL's and MISO's proposed actions, Staff recommends a two-stage redesign of the Temporary IROL construct for consideration by the Commission, its jurisdictional utilities, and the MISO stakeholders. Under this approach, MISO would first declare a "Temporary IROL – Planning" state at a lower, preparatory threshold (for example, a post-contingent loading of approximately 125%). That declaration would be time-stamped and, within minutes, accompanied by a targeted load-shed plan tailored to the affected load. The plan would identify substations/feeders or an electrical boundary, include a load-shift-factor ("LSF") table, define practical MW block sizes (e.g., 25/50/100 MW), specify critical-load exclusions, and set a clear implementation order. In parallel, MISO and the Transmission Owner would document and pursue available mitigations—redispatch, reconfigurations, TLR/M2M, emergency transactions, interruptible load curtailments (e.g. LMRs), and voltage/reactive measures—with estimated MW relief for each, and issue appropriate Conservative Operations/EEA type notices to enable regulator and customer communication (and, where warranted, calls for conservation). The Planning declaration would not start the IROL Tv.

Only if RTCA subsequently crosses a higher, execution threshold (for example,  $\geq 150\%$  post-contingent loading, or a documented voltage-stability/cascading criterion) would MISO declare "Temporary IROL – Execute." At that point, the IROL Tv would start. If the documented alternatives cannot ensure a return to limits within Tv, MISO and the TO would implement the pre-developed targeted plan immediately. All actions and restoration times would be time-stamped, with a brief operator log issued after the event.



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This two-stage framework—or a similar variant—would materially improve targeting, coordination, and transparency while preserving the RC's ability to act rapidly when warranted. It is a significant improvement over the current single-threshold design that resulted in immediate load shedding for a contingent risk with no prior notification during the May 25 Load Shed Event in the Amite South load pocket.

### **3. Transmission Planning**

Both the ELL and MISO After-Action Reports and discovery make clear that Amite South's core problem is structural: a peninsular, corridor-dependent grid with limited import ties, so a single high-voltage outage or cluster of generator outages can tip the area into post-contingent risk. MISO's report notes that Southeast Louisiana is a load-pocket region "heavily dependent on local generation," and that the spring 2025 wind damage to the Nelson–Richard 500 kV line—normally capable of moving on the order of 1,700 MW—further constrained imports ahead of the May 25 Load Shed Event.

Against that backdrop, the planning record shows a concentrated effort of ELL planning through the MISO Transmission Expansion Plan ("MTEP") and Commission certification process for a transmission build-out aimed at creating new high-capacity paths into the pocket and hardening the existing network.

On the West Bank of the Amite South load pocket, ELL's proposal pairs Westbank 230 kV (LPSC Docket No. U-37143) and 500 kV (LPSC Docket No. U-37467) projects with a new 500/230 kV path linking Commodore–Waterford–Churchill, including an ~84-mile 500 kV line and conversion of Waterford–Churchill from 230 to 500 kV.

On the East Bank of the Amite South Load Pocket, ELL proposes the Geismar 230 kV (LPSC Docket No. U-37527) and the new Audubon Substation (LPSC Docket No. S-37113) as a

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pair. These projects work in tandem; the Geismar project builds new Willow Glen–Conway and Conway–Audubon 230 kV lines and upgrades the associated stations; Audubon adds a new 500/230 kV interface and station cuts.

North of Lake Pontchartrain, ELL proposes the Adams Creek–Robert 230 kV (LPSC Docket No. U-37563) line that adds a ~41-mile hardened path with station upgrades at Adams Creek, Robert, Fairview, and Madisonville. ELL's testimony to Staff indicates that had the Adams Creek–Robert 230 kV line been in place, the sequence that led to the May 25 Load Shed Event would not have occurred—a conclusion that underscores how a north-of-the-lake reinforcement relieves the [REDACTED] corridor that ultimately triggered the Temporary IROL.

And, finally through the MISO MTEP process, ELL is advancing a new transmission line between Babel and Weber to add a parallel import path into the Amite South load pocket that ELL contends will strengthen the West Bank corridor, relieve recurring contingency-driven constraints, and improve N-1/N-1-1 resilience so operators are less likely to face last-minute firm load shed.

Many of those projects are currently under review by the Commission and MISO's data responses are careful to say that, because the May 25 Load Shed Event reflected a confluence of factors (many outside traditional NERC "build" criteria), no single project can be guaranteed to have averted that specific event. Nonetheless, it illustrates that ELL, MISO, and the Commission are all focused on trying to find Amite South projects that help improve the ability to move power within the load pocket and increase load-serving capability. The Commission Staff recommends continued diligence in seeking prudent transmission projects that are in the public interest to relieve risks associated with load sheds in the Amite South load pocket.

Two additional important transmission-related questions were raised in the immediate aftermath of the May 25 Load Shed Event. First, whether the MISO North/South transmission



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constraint contributed to the load shed. After conferring with MISO and the affected utilities, Staff confirms that it did not. Adequate energy was available south of the interface; the binding limitation was the Amite South load pocket's own import capability - not the MISO North/South interface. Second, whether the temporary LMP divergence between Mississippi and Louisiana signals inadequate transmission between the states. A single, extreme-event price separation is not, by itself, a basis for major transmission investment. ELL's and MISO's ongoing planning processes target persistent, recurring congestion and sustained LMP separation, and should continue to focus investment decisions on those demonstrated patterns.

### **4. Cause Conclusion**

The May 25 Load Shed Event was caused by a perfect storm without a storm. Limited import capability into the Amite South load pocket, constrained availability of local generation, and a conservative, deterministic load-shed trigger under MISO's Temporary IROL construct culminated in a directive to shed 600 MW of firm load. All parties acknowledge, and Staff agrees that under the current framework, a recurrence of the same conditions would likely produce another shed.

In light of this reality, Staff recommends that the Commission, its jurisdictional utilities, and the MISO stakeholder process (i) revisit unit-commitment thresholds in load pockets during periods of elevated forced-outage risk; (ii) reform MISO's Temporary IROL procedures to allow more time, communication, and targeted solutions for post-contingent risks (for example, the two-stage planning/execution approach discussed above); and (iii) continue prudent transmission planning to increase import capability into the Amite South load pocket - moving forward only with projects that are cost-effective and demonstrably in the public interest.

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### V. WHETHER NOTIFICATIONS TO AND COMMUNICATIONS WITH THE COMMISSION AND CUSTOMERS REGARDING THE OUTAGE WERE IN COMPLIANCE WITH GENERAL ORDER DATED APRIL 13, 2017 AND ANY OTHER APPLICABLE ORDERS OR REQUIREMENTS

Attachment A to General Order dated April 13, 2017 ("Attachment A") establishes "best practices" protocols for all LPSC-regulated public utilities to ensure, among other things, adequate communications during and after service disruptions.<sup>54</sup> Attachment A includes requirements regarding Emergency Service Plan ("ESP") filings, automated alert systems, and reporting requirements. Cleco and ELL are LPSC-regulated public utilities and must comply with the Commission's order. While an RTO, MISO should also comply with the applicable provisions of the order as an RTO whose actions impact reliability and costs in Louisiana.

#### A. ATTACHMENT A, SECTION II: ANNUAL EMERGENCY SERVICE PLAN FILINGS

Section II of Attachment A requires each jurisdictional utility to submit to the Commission's Utilities Division a copy of an Emergency Service Plan ("ESP") annually.<sup>55</sup> The ESP must provide certain information, including utility emergency contacts, personnel, materials/equipment, drills, identification of high-risk assets, weather monitoring, backup communication, and a list of customers for priority restoration.<sup>56</sup> Both ELL and Cleco filed Emergency Service Plans with the Commission in 2025.<sup>57</sup> Therefore, both utilities are in compliance with Section II of Attachment A.

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<sup>54</sup> General Order dated April 13, 2017 at Attachment A ("These emergency planning and response rules are applicable to all LPSC-regulated utilities and their retail service offerings...").

<sup>55</sup> *Id.* at Attachment A, Section II.

<sup>56</sup> *Id.* at Attachment A, Section II.C.

<sup>57</sup> Cleco Response to Staff Data Request 2-1, Confidential Attachment A; Entergy Response to Staff Data Request 3-4, Confidential Attachment.



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### **B. ATTACHMENT A, SECTION IV: STATEWIDE ELECTRICITY OUTAGE REPORTING SYSTEM**

Section IV of Attachment A of General Order dated April 13, 2017 states that it is in the public interest for all regulated electric utilities to explore the possibility of using a state-of-the-art outage reporting system. Accordingly, Section IV requires that, within twelve months of the issuance of an order adopting the rules in Attachment A, each electric service provider that has not yet implemented an outage reporting system evaluate outage reporting systems and report back to the Commission the results of its evaluation in a compliance filing within Docket No. R-32786.<sup>58</sup> The evaluations should include, but not be limited to: cost, including initial set up costs as well as ongoing costs, time required for implementation, and an estimate of manpower required for maintenance of the system. Additionally, all outage reporting systems evaluated by the electric service providers should be compatible with and capable of real-time data input into an outage reporting system to be hosted by the Commission.

ELL states that it installed and implemented its initial outage reporting system in 1997.<sup>59</sup> Cleco reports that it has had a statewide customer-facing outage reporting system in place since 2013 that it utilizes to report outages for the various hurricanes and winter storm events that have impacted Cleco territory, most recently for Hurricane Francine in September 2024.<sup>60</sup> Because both ELL and Cleco had outage reporting systems in place at the time the General Order dated April 13, 2017 was issued, they were not required to make a compliance filing pursuant to Section IV of Attachment A.

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<sup>58</sup> General Order dated April 13, 2017 at Attachment A, Section IV.

<sup>59</sup> Entergy Response to Staff Data Request 1-9.

<sup>60</sup> Cleco Response to Staff Data Request 1-9.

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### C. ATTACHMENT A, SECTION V: AUTOMATED ALERT SYSTEM RECOMMENDATIONS

Section V of Attachment A of General Order dated April 13, 2017 recommends that utilities employ an automated telephone and/or text-messaging system to alert customers to outages and keep them apprised of the status of outages. It specifies that customers should be able to opt into the system, choose the information they want to receive, and set periods during the day they do not want to be notified. Section V also requires that within twelve months of the issuance of General Order dated April 13, 2017, all electric service providers that have not already done so shall evaluate the implementation of an emergency communications system that will provide automated telephone and/or text messaging to customers when outages occur.<sup>61</sup> Each regulated utility that does not already have such a system is required to make a compliance filing within twelve months.<sup>62</sup>

ELL states that it first installed and implemented its customer notification system in approximately 2011.<sup>63</sup> Because it had a customer notification system in place when the General Order dated April 13, 2017 was issued, ELL was not required to make a compliance filing pursuant to Section V of Attachment A.

Cleco states that its customer portal has had the ability to notify customers of outages and estimated restoration times via SMS text messages since 2013.<sup>64</sup> Customers must set up their account to receive notifications and Cleco is unable to send customized text messages.<sup>65</sup> Cleco can provide customized emails to all customers who provide a valid email address; however, that

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<sup>61</sup> General Order dated April 13, 2017, Attachment A, Section V.

<sup>62</sup> *Id.*

<sup>63</sup> Entergy Response to Staff Data Request 1-8.

<sup>64</sup> Cleco Response to Staff Data Request 1-8.

<sup>65</sup> *Id.*



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"is a manual process that typically takes hours to complete."<sup>66</sup> Since Cleco already had an automated text messaging system in place at the time General Order dated April 13, 2017 was issued, it was not required to make a compliance filing.

MISO reports that it has an automated notification system that anyone can subscribe to in order to receive external alerts about capacity-related events, but that the system does not currently provide external alerts for transmission system emergencies, such is what occurred during the May 25 Load Shed Event.<sup>67</sup> MISO also states that while there are communications protocols for Energy Emergency Alerts ("EEA") pursuant to LPSC General Order dated May 31, 2022, those communications protocols were not triggered for the May 25 Load Shed Event because EEA events are related to capacity issues.<sup>68</sup> This is a gap in MISO's communications protocols that should be closed, as discussed in Section VI of this Report.

### **D. ATTACHMENT A, SECTION VI: REPORTING AND NOTIFICATION REQUIREMENTS FOR NON-EMERGENCY OUTAGES**

Section VI of Attachment A contains the requirements for non-emergency outage reporting. It requires that "the Commission promptly be notified with regard to non-emergency outages as follows:

1. Electric utilities shall report any loss of electric service that affects a significant portion of their customers in any of the parishes served by the utility, if the outage duration is expected to be more than three hours.
  - a. An estimated restoration time should also be communicated to the Executive Secretary, the LPSC Emergency Support Function ("ESF")-12 Lead, and the relevant District Office(s).

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<sup>66</sup> *Id.*

<sup>67</sup> MISO Response to Staff Data Request 1-8.

<sup>68</sup> *Id.*

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2. Whether the electric service interruption is electric utility or Regional Transmission Organization ("RTO") initiated, to the extent possible, the RTO shall notify the Commission and coordinate with the utility in accordance with the RTO's Emergency Response Plan *prior* to:
  - a. Any action to maintain bulk power supply integrity by: (1) Requests to the public to reduce the consumption of electricity for emergency firm customer load reduction purposes, (2) Reducing voltage which affects firm customer load, (3) Reducing firm customer loads by manual switching, operation of automatic load-shedding devices, or any other means except under direct load management programs as approved by the Commission.
  - b. Any loss in service for 15 minutes or more of bulk electric power supply to aggregate firm customer loads exceeding 200 megawatts.
  - c. Any bulk power supply malfunction or accident which constitutes an unusual threat to bulk power supply integrity. The utility shall file a complete report with the Commission of steps taken to resume normal operation or restore service and prevent recurrence, where applicable, within 30 days of return to normal operation unless impracticable, in which event the Commission may authorize an extension of time.
  - d. If prior notification is not possible, the utility should notify the Commission within twenty-four hours and provide a full report within seventy-two hours of the service disruption."<sup>69</sup>

MISO and Cleco both assert that Section VI of Attachment A does not apply to the May 25 Load Shed Event.<sup>70</sup> They argue that Section VI is inapplicable because it applies to non-emergency outages, and MISO declared a TSE at 3:59 p.m. before the May 25 Load Shed Event.<sup>71</sup> Cleco additionally asserts that Section VI does not apply to the May 25 Load Shed Event because Cleco did not expect the outage to last more than three hours and in fact, no Cleco customer was without power for longer than three hours.<sup>72</sup> MISO also argues that Section VI of Attachment A to General

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<sup>69</sup> General Order Dated April 13, 2017, Attachment A, Section VI.

<sup>70</sup> MISO Response to Staff Data Request 1-10; Cleco Response to Staff Data Request 1-10.

<sup>71</sup> MISO Response to Staff Data Request 1-10; Cleco Response to Staff Data Request 1-10.

<sup>72</sup> Cleco Response to Staff Data Request 1-10. This concern is addressed in subsection 4 below regarding Cleco's compliance with Section VI of Attachment A.



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Order dated April 13, 2017 is inapplicable to the May 25 Load Shed Event, and that it is not aware of any Commission protocols that currently exist for TSEs.<sup>73</sup>

Staff rejects this narrow interpretation of the applicability of Section VI. The load shed action MISO directed to maintain system reliability is analogous to the RTO-directed electric service interruption described in Footnote 8 to Section VI.2 as an example of an electric service interruption requiring notification under that section.<sup>74</sup> Footnote 8 describes an April 13, 2014 series of transmission and generation outages that were the result of MISO requesting Entergy to shed load to maintain system reliability.<sup>75</sup> Footnote 8 demonstrates that load shed actions to maintain system reliability constitute the type of non-emergency outage covered by Section VI of Attachment A. On May 25, MISO directed Entergy and Cleco to shed load to maintain system reliability, so the reporting requirements of Section VI apply to MISO, Entergy, and Cleco for the May 25 Load Shed Event.

Neither the General Order dated April 13, 2017, nor Attachment A to that Order define "non-emergency" outages. Attachment A states that an "'emergency' shall include but is not limited to: hurricanes, severe storms, tornadoes, floods, dam failures, freezes, winter storms, earthquakes, subsidence, erosion, drought, water shortages, wildfires, nuclear power plant incidents, transportation and other hazardous materials incidents, industrial accidents, nuclear attack, chemical/biological warfare, terrorist incidents, civil disturbances or riots, resource shortages, internet or technological failure, pandemics, or other events that could result in widespread service outages or employee absences, or a combination of any of these."<sup>76</sup> Taking

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<sup>73</sup> MISO Response to Staff Data Request 1-10.

<sup>74</sup> See General Order Dated April 13, 2017 at Attachment A, Section VI.2 n.8.

<sup>75</sup> *Id.*

<sup>76</sup> General Order dated April 13, 2017 at Attachment A, p. 2.

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the entirety of General Order dated April 13, 2017 and Attachment A, it is Staff's opinion that the intent of the General Order is for Section VI to apply to the type of RTO-ordered load shed that occurred in May. Staff acknowledges, however, that Attachment A is not clear what is meant by "non-emergency" outages, and the breadth of the definition of "emergency" raises legitimate questions regarding what is encompassed in "non-emergency" outages.

Staff also acknowledges that Section VI lacks details regarding the precise form of the communications and reporting required. Staff thus declines to recommend penalties for any failure to comply with Section VI, but analyzes whether ELL, Cleco, and MISO complied with a reasonable interpretation of that Section to provide them with the Commission's expectations for communications and reporting regarding RTO-called load sheds. Staff further recommends that the rules applicable to RTO-called load sheds be clarified in an appropriate Commission proceeding that will allow public comment and feedback, particularly from all impacted utilities and RTOs.

For instance, the three-hour duration expectation threshold to alerting the Commission of a load shed under Section VI.1 should be eliminated to make clear that the Commission should be informed promptly of any load sheds, regardless of expected duration. The Order should also be amended to specify which of the provisions apply to utilities, RTOs, or both, and to specify the timing and formal requirements of notifications and reporting.

Among other details, Staff recommends that the Commission clarify the language of Attachment A, Section VI, subsection 2(d) to require more precise formal reporting and to define the form and content requirements required of the report that is required within 72 hours. Specifically, Staff recommends that a report be written and sent to all Commissioners, the Commission's Executive Secretary, and Commission Executive Counsel and Deputy General



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Counsel. The report should include, but is not limited to, the following information: (1) the time the outage or emergency event began and ended; (2) the reasons for the outage; (3) any instructions provided by an RTO to any entities regarding emergency procedures, including requests for voluntary reductions in electric usage and/or interruptions or curtailments; (4) the number and location of affected customers and substations; (5) all known contributing causes to the load shed; (6) any measures that were taken to avoid the load shed; and (7) any intended improvements to avoid future such load sheds.

To the extent the utility or RTO is not able to provide all of these details within 72 hours, a preliminary report should still be submitted but should be updated as soon as that information is obtained in a prompt post-incident investigation. Any subsequent study or report that the utility or RTO produces on the load shed event should also be provided to the Commissioners, the Commission's Executive Secretary, and the Commission's Executive Counsel and Deputy General Counsel. The Commission should consider requiring the filing of a full incident report with a complete cause analysis and recommendations for improvement within 60 days, or other appropriate time period.

### **1. Entergy Communications Before, During, and After May 25 Load Shed Event**

MISO claims that the "Entergy TCC South Transmission System Operations personnel were warned in advance that load shed was a possibility with earliest notification occurring at 11:25 a.m. on May 24, 2025."<sup>77</sup> However, further factual discovery shows that this communication was not a warning of the load shed that occurred. Rather, that communication alerted Entergy that it should include a post-contingent load shed in its post-contingent action plan that would have

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<sup>77</sup> MISO Response to Staff Data Request 1-7(a), (d).

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called for a load shed only if other contingent lines were lost, which did not happen. Further, at 12:56 p.m. on May 25, 2025, Entergy agreed to a transmission reconfiguration post-contingent action at the [REDACTED] for a contingent loss of [REDACTED] contingency. MISO's response to Staff Data Request 1-7(i) stated that MISO informed Entergy that this reconfiguration would alleviate the need for "*some*" of the post-contingent load-shed.<sup>78</sup> Entergy responded with a transcript of that conversation that showed that MISO stated on a call with the Entergy TCC that the reconfiguration "relieves the constraint entirely. At that point in time, we don't even have to shed load."<sup>79</sup> MISO subsequently conceded that it "informed Entergy that this reconfiguration would alleviate the need for the post-contingent load shed."<sup>80</sup>

MISO and Entergy communicated by phone around twenty times between that initial contact and when MISO informed Entergy that it was declaring a TSE at 3:59 p.m.<sup>81</sup> MISO directed Entergy to shed load at 4:20 p.m., and Entergy began shedding load at 4:33 p.m.<sup>82</sup> Power was restored to all customers by 10:40 p.m.<sup>83</sup> Before MISO ordered Entergy to shed load, MISO and Entergy discussed a reconfiguration plan, and Entergy asserts that it "understood that the reconfiguration plan it had discussed with MISO would be sufficient to ensure no need to shed load."<sup>84</sup>

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<sup>78</sup> MISO Response to Staff Data Request 1-7(i) (emphasis added).

<sup>79</sup> Staff Exhibit 1 at 5.

<sup>80</sup> Staff Exhibit 2 at 15.

<sup>81</sup> MISO Response to Staff Data Request 1-7(a); Staff Exhibit 1 at 5.

<sup>82</sup> MISO Response to Staff Data Request 1-7(e); Entergy Response to Staff Data Request 1-1(f).

<sup>83</sup> Entergy Response to Staff Data Request 1-1(f).

<sup>84</sup> Entergy Response to Staff Data Request 1-6(d).



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At 5:55 p.m., Ryan Jones, Manager of ELL Regulatory Affairs, emailed the Commissioners and Commission Staff, including Executive Counsel Kathryn Bowman, Deputy General Counsel Lauren Evans, Executive Secretary Brandon Frey, Press Secretary Colby Cook, and Commissioner Campbell's Executive Assistant Joe Shyne, to alert them that Entergy had started periodic power outages for its customers, as directed by MISO.<sup>85</sup> Entergy did not provide a restoration time, but indicated that individual customers may experience multiple outages and that MISO was directing actions to be taken to restore the system as quickly as possible.<sup>86</sup> At 8:46 p.m., Entergy updated the same recipients that MISO canceled the directive requiring load shed for Entergy customers and that Entergy was restoring power to affected customers in a careful manner to avoid causing additional stress to the grid.<sup>87</sup> The information in these emails was also posted on the Entergy website as news releases.<sup>88</sup>

Entergy sent several text messages to customers providing estimated restoration times.<sup>89</sup> At the time of the outage, Entergy sent a message to customers indicating that it was aware of an outage and that the expected restoration time was 7:00 p.m.<sup>90</sup> At 6:45 p.m., Entergy sent another text to customers who were still without power indicating that an updated estimated restoration time would be provided when available. Entergy later sent messages to customers who were still without power at 7:10 p.m. stating that the estimated restoration time was 9:30 p.m.; then again at

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<sup>85</sup> Entergy Response to Staff Data Request 1-6 ("MISO Load Shed 5252025" PDF attachment).

<sup>86</sup> *Id.*

<sup>87</sup> *Id.*

<sup>88</sup> See Entergy Response to Staff Data Request 1-6 ("Entergy Newsroom hyperlinks & messages" PDF attachment).

<sup>89</sup> See *id.*

<sup>90</sup> *Id.*

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9:30 p.m. stating that the estimated restoration time was 10:30 p.m.; and then finally at the time of re-energization stating that power should be restored.<sup>91</sup>

By 6:17 p.m., Entergy posted a banner update in its View Outage site.<sup>92</sup> The banner stated that temporary power outages had begun due to a load shed event and were initiated by Entergy's reliability coordinator as a last resort to protect the grid against longer, more widespread outages.<sup>93</sup> The banner did not contain an estimated restoration time.<sup>94</sup> The banner was updated again at 9:45 p.m. indicating that MISO had ended its directive requiring power outages and power had been restored to nearly all customers.<sup>95</sup>

On May 30, Entergy sent an email to customers in south Louisiana explaining the May 25 Load Shed Event.<sup>96</sup> In the email, Entergy described MISO's role as Reliability Coordinator and stated that MISO had directed Entergy to bring customers offline as part of that role. Entergy stated that it was "deeply disappointed" by the outage and that it "recognizes the May 25th outage ordered by MISO was not executed in a satisfactory way for [Entergy] customers."<sup>97</sup> Entergy further stated that it "regret[s] that Entergy was not provided with enough prior notice of the outage to prepare [its] customers for the potential loss of power."<sup>98</sup> Entergy described that "[w]hile load shed events are incredibly rare, when they are ordered, the need must be clear to the utility and the

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<sup>91</sup> *Id.*

<sup>92</sup> Entergy Response to Staff Data Request 1-6 ("RE ENO Banner Alerts Messaging 05-25-25 6PM" PDF Attachment).

<sup>93</sup> *Id.*

<sup>94</sup> *Id.*

<sup>95</sup> Entergy Response to Staff Data Request 1-6 ("ELL Banner Alert Messaging 05-25-25 FINAL.pdf" PDF Attachment).

<sup>96</sup> Entergy Response to Staff Data Request 1-6 ("proofs Adhoc\_ELL\_POST\_LoadShed\_Email\_20250530 A message to customers in South Louisiana" PDF attachment).

<sup>97</sup> *Id.*

<sup>98</sup> *Id.*



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advance warning should be maximized for the customer."<sup>99</sup> Entergy concluded by explaining that its membership in MISO has been beneficial to customers, despite the May 25 Load Shed Event, and has saved customers "hundreds of millions of dollars since [Entergy] joined [MISO] in 2013."<sup>100</sup>

On August 1, 2025 Entergy filed into this docket its After-Action Report for the May 25 Load Shed Event. The report explained that Entergy has a written communications plan, titled "Power Shortfall Communications," that defines external communication procedures for a power shortfall event in two specific scenarios: (1) a MISO directed system-wide shortfall or energy emergency, where there is a regionwide shortage of generating capacity, and (2) a local load at risk event, where transmission limitations or other circumstances limit the ability to serve load in a specific area within the region.<sup>101</sup> Entergy asserts that it did not use this written communication plan before the May 25 Load Shed Event because of the specific nature of the event and the limited advance notice Entergy received from MISO regarding the load shed.<sup>102</sup>

Entergy's After-Action Report further recognizes that the current Entergy response plan procedures "do not adequately and clearly address the unique facts presented on May 25" and therefore "there were delays in notifying and mobilizing key teams responsible for executing customer outreach and response."<sup>103</sup> The report notes that Entergy received communications and concerns from external stakeholders before critical internal teams were aware of the events.<sup>104</sup> Entergy attributes the problems with public communications to several factors:

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<sup>99</sup> *Id.*

<sup>100</sup> *Id.*

<sup>101</sup> Staff Exhibit 1 at 15; Entergy Response to Staff Data Request 1-7.

<sup>102</sup> Staff Exhibit 1 at 15-16; Entergy Response to Staff Data Request 1-7.

<sup>103</sup> Staff Exhibit 1 at 16.

<sup>104</sup> *Id.*

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1. The TCC had to focus on executing MISO's load shed order, rather than performing internal notifications.
2. The TCC currently does not trigger external stakeholder communications. Instead, stakeholder communications depend on a MISO trigger.
3. Key customer systems, including View Outage, Mobile App, and myEntergy.com, experienced degradation due to customer traffic associated with the outages immediately following the start of the load shed event.<sup>105</sup>

Entergy has provided several recommendations for actions to improve communications for situations where there is limited notice or no notice of a load shed event. Those recommendations are discussed in Section VII of this report.

### **2. Entergy Compliance with Section VI of Attachment A for the May 25 Load Shed Event**

Entergy failed to comply with several requirements of Section VI of Attachment A. First, Entergy failed to promptly notify the Commission of the outage. Section VI.1 requires utilities to promptly notify the Commission of any loss of service that is expected to be more than three hours. Entergy first notified the Commission of the service disruption at 5:55 p.m., approximately an hour and a half after MISO ordered Entergy to shed load and more than twenty-four hours after MISO claims that it first warned Entergy that a load shed might be required.<sup>106</sup> MISO stated that it first learned that load shed was a possibility in Louisiana when it notified Entergy that a post-contingent load-shed would have to be included in the post-contingent action plan at 11:25 EST on May 24.<sup>107</sup> As discussed above, Entergy disputes MISO's characterization of when Entergy was first informed that the load shed that occurred was a possibility. Entergy contends that it did not learn that MISO considered load shed a possibility until MISO issued the order to shed load on May 25, because

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<sup>105</sup> *Id.*

<sup>106</sup> Entergy Response to Staff Data Request 1-6 ("MISO Load Shed 5252025.pdf" PDF Attachment); MISO Response to Staff Data Request 1-7(d).

<sup>107</sup> MISO Response to Staff Data Request 1-1(d) (CONFIDENTIAL).



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Entergy's May 24 discussion with MISO was related to *post*-contingent load shed, and the May 25 Load Shed Event was a *pre*-contingent load shed.<sup>108</sup> Entergy also asserts that it understood that the reconfiguration plan it had discussed with MISO was sufficient to ensure that no load shed was needed, citing to MISO statements confirming the adequacy of the reconfiguration for a post-contingency situation.

Staff agrees with Entergy that MISO's May 24 call for inclusion of a post-contingent load shed in a post-contingent action plan for the loss of a line that was not in fact lost, was not prior notification of the load shed that actually occurred. Entergy agreed to a reconfiguration for that post-contingent action plan and MISO accepted that plan as relieving "the constraint entirely."<sup>109</sup> Nevertheless, regardless of when Entergy first learned that load shed was a possibility, its notification to the Commission approximately an hour and a half after MISO issued the order to shed load was not a prompt notification. Entergy could and should have alerted the Commission to the load shed concurrently with the load shed or very shortly after.

Second, Entergy failed to provide an estimated restoration time to the required Commission contacts in Section VI.1.a, although it sent alerts to customers with an estimated restoration time at the time of the outage and updated customers with revised estimated restoration times as the outage went on.<sup>110</sup> Section VI.1.a requires an estimated restoration time to be communicated to the Executive Secretary, LPSC ESF-12 Lead, and the relevant District Office(s). In its first email alerting the Commission to the load shed, Entergy only stated that MISO was "directing actions to be taken to restore the system to normal operations as quickly as possible and [would] direct

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<sup>108</sup> Entergy Response to Staff Data Request 2-1(a) (CONFIDENTIAL).

<sup>109</sup> Staff Exhibit 1 at 5; Staff Exhibit 2 at 15.

<sup>110</sup> See Entergy Response to Staff Data Request 1-6(f) (stating that Entergy provided a restoration time to customers, but not describing any restoration time provided to the required Commission contacts); Entergy Response to Staff Data Request 1-6 ("Entergy Newsroom hyperlinks & messages.pdf" PDF Attachment).

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Entergy to stop these outages as soon as the power shortfall no longer threatens the integrity of the rest of the electrical power system."<sup>111</sup> Entergy did not contact the Commission again until it updated that MISO had canceled its load shed directive and Entergy was "coordinating the orderly restoration of power to affected customers."<sup>112</sup> This does not constitute providing an estimated restoration time to the required Commission contacts as specified in Section V.1.a of Attachment A.

Third, Entergy failed to fully comply with the reporting requirements of Section VI.2.d, which require the utility to notify the Commission within twenty-four hours and provide a full report within seventy-two hours of the service disruption where prior notification is not possible. Entergy notified the Commission of the outage within twenty-four hours through its emails to Commissioners and Commission Staff on May 25 at 5:55 p.m. and 8:46 p.m., but did not provide a full report until two months later when it provided its After-Action Report on August 1 and appeared at the June 18, 2025 Commission B&E meeting to answer questions and report on the status of its ongoing investigation.<sup>113</sup> Because Entergy did not provide a report within seventy-two hours of the service disruption, Staff finds that Entergy did not fully comply with Section VI.2.d.

Staff, however, acknowledges that the current rule does not specify what is meant by a "full report," and that it would be difficult for an entity to provide a detailed root cause analysis within 72 hours of an outage. Staff recommends that the Commission consider providing more detail as to what type of reporting is required, when it is required to be submitted, and suggests that a

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<sup>111</sup> Entergy Response to Staff Data Request 1-6 ("MISO Load Shed 5252025.pdf" PDF Attachment).

<sup>112</sup> *Id.*

<sup>113</sup> Entergy Response to Staff Data Request 1-10(b); Staff Exhibit 1.



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preliminary report would be appropriate to be required within 72 hours, with a fuller report due at a later interval, such as 60 days.

### **3. Cleco Communications Before, During, and After May 25 Load Shed Event**

The Cleco Transmission Operations Center ("CTOC") received MISO's load shed order via a phone call at 4:28 p.m. on May 25.<sup>114</sup> Cleco states that it first learned load shed was a possibility through that 4:28 p.m. call, and MISO has confirmed that it did not notify Cleco of the load shed in advance or warn Cleco that load shed was a possibility.<sup>115</sup> The load shed then commenced at 4:53 p.m., and MISO instructed Cleco to restore power in increments during the outage: 20 MW at 5:50 p.m., 20 MW at 6:29 p.m., 20 MW at 6:47 p.m., and the remaining 40 MW at 6:48 p.m.<sup>116</sup> The load shed order was lifted at 6:54 p.m., and all Cleco load was restored by 7:00 p.m.<sup>117</sup>

Cleco's Chief Commercial Officer, Shane Hilton, spoke to Commissioner Skrmetta on the phone at 4:58 p.m. and Cleco's General Counsel and Chief Regulatory Officer, Mark Kleehammer, spoke to Executive Secretary Mr. Frey (no time was provided by Cleco for this communication).<sup>118</sup> Mr. Kleehammer responded to texts from Commissioner Lewis beginning at 6:09 p.m. and called Commissioner Lewis at 6:51 p.m. in response to the texts to discuss the power restoration status and Cleco's generation status in western Louisiana.<sup>119</sup> Cleco asserts that Mr. Kleehammer discussed the status of customer restoration, the status of Cleco's outage map, and the status of

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<sup>114</sup> Cleco Response to Staff Data Request 1-1(b), (c).

<sup>115</sup> Cleco Response to Staff Data Request 1-1(e); MISO Response to Staff Data Request 1-7(d).

<sup>116</sup> Cleco Response to Staff Data Request 1-1(f).

<sup>117</sup> *Id.*

<sup>118</sup> Cleco Response to Staff Data Request 1-6(b).

<sup>119</sup> *Id.*

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Cleco's generating units in follow-up communications with Commissioner Skrmetta.<sup>120</sup> Cleco states that restoration information was conveyed via phone over the course of the May 25 Load Shed Event in real time without estimates.<sup>121</sup> Cleco issued a press release on May 26 at approximately 1:00 p.m.<sup>122</sup> The press release described that it took the "unprecedented step" of controlled outages at MISO's direction as a last resort to protect the stability of the grid and prevent widespread outages.<sup>123</sup> The press release described that at the height of the event, roughly 25,000 Cleco customers in the Covington, Mandeville, Madisonville, Lacombe, and Franklinton areas were without power for under two hours.<sup>124</sup> This was the only communication with customers that Cleco provided in response to Commission Staff data requests.

#### **4. Cleco Compliance with Section VI of Attachment A for the May 25 Load Shed Event**

Section VI.1 requires utilities to promptly notify the Commission of any loss of service that is expected to be more than three hours. Cleco claims that it "did not expect the outage duration to last more than three hours and, in fact, no Cleco Power customer was without power for longer than three hours."<sup>125</sup> But once a load shed is implemented, it cannot be predicted with complete accuracy how long a load shed event will last. In fact, it reasonably can be expected to last several hours given the time it takes to bring resources back online. No Louisiana utility should delay or decline to notify the Commission of a load shed while it attempts to determine how long the outage will last. As discussed in Section VI below, to remove any doubt, Staff

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<sup>120</sup> Cleco Response to Staff Data Request 1-6(e).

<sup>121</sup> Cleco Response to Staff Data Request 1-6(f).

<sup>122</sup> Cleco Response to Staff Data Request 1-6(g).

<sup>123</sup> Cleco Response to Staff Data Request 1-6, Attachment A.

<sup>124</sup> *Id.*

<sup>125</sup> Cleco Response to Staff Data Request 1-10.



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recommends that this provision be modified to eliminate the three hour or less exception to Commission notification. For all load shed events, the Commission should be notified prior to it occurring, or, if prior notice is not possible, concurrently with the load shed or as quickly as possible after the load shed. Further, it is irrelevant that no Cleco customer was without power for more than three hours, as Section VI addresses expected duration at the beginning of an outage. Staff rejects Cleco's interpretation of Section VI to Attachment A.

Staff nonetheless finds that Cleco promptly notified the Commission of the disruption in service given the late notice it received from MISO. Cleco reported the loss of service through phone calls to Commissioner Skrmetta at 4:58 p.m., Commissioner Lewis at 6:51 p.m., and Commission Executive Secretary Brandon Frey (no time for this call was provided) during the outage.<sup>126</sup> Cleco's 4:58 p.m. earliest phone call to a Commissioner took place thirty minutes after Cleco received the load shed directive from MISO and five minutes after the load shed began. Cleco asserts that because of the timing of events and immediacy of MISO's directive to shed load, it was unable to take any other actions prior to shedding load.<sup>127</sup> Staff finds that because Cleco did not have advance warning of the possibility of a load shed event, and given the urgency of having to address an unforeseen call to shed load, its phone call to Commissioner Skrmetta half an hour after receiving the load shed order and five minutes after the load shed commenced was prompt notification. In the future, however, Cleco and other Louisiana utilities should promptly notify *all* Commissioners and Commission Staff of load sheds, not just a particular Commissioner or Commissioners, and should provide that notification prior to or at least concurrently with a load shed.

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<sup>126</sup> Cleco Response to Staff Data Request 1-10(a); Cleco Response to Staff Data Request 1-6(b).

<sup>127</sup> Cleco Response to Staff Data Request 1-10(b).

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Second, Section VI.1.a requires an estimated restoration time to be communicated to the Executive Secretary, LPSC ESF-12 Lead, and the relevant District Office(s). Cleco made phone calls to Commissioner Skrmetta, Commissioner Lewis, and the Executive Secretary during the outage, and states that restoration information was provided in real time without estimates.<sup>128</sup> MISO has also stated that it did not provide a projected restoration time and "reported as the process of restoring load was ongoing until all load was restored."<sup>129</sup> However, Cleco and all utilities should be aware that failure to provide restoration estimates violates the requirements of Section VI.1.a. All utilities should endeavor to ascertain estimated restoration times and to communicate those estimates to the identified Commission representatives and the public as soon as possible.

Finally, Cleco failed to provide a report to the Commission within seventy-two hours of the service disruption. Section VI.2.d requires a utility to provide a full report within seventy-two hours of the service disruption where prior notification of the disruption is not possible. Cleco did not provide and, as of the time of writing this report still has not provided, any report to the Commission related to the May 25 Load Shed Event. Staff finds that this failure to report is not in compliance with Section VI.2.d of Attachment A.

### **5. MISO Communications Before, During, and After May 25 Load Shed Event**

As discussed in detail in Table 1 and above, MISO represents that it "warned" Entergy "in advance that load shed was a possibility" at 11:25 a.m. on May 24, 2025, the day before the May 25 Load Shed Event occurred.<sup>130</sup> However, that so-called warning was for the development of a

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<sup>128</sup> Cleco Response to Staff Data Request 1-6(b), (e), (f).

<sup>129</sup> MISO Response to Staff Data Request 1-7(g).

<sup>130</sup> MISO Response to Staff Data Request 1-7(d).



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post-contingent mitigation plan which could involve load shed in the event of the loss of the [REDACTED] and not a warning of the load shed that occurred without the loss of that line. Further, MISO ultimately acknowledged that it had informed Entergy that an agreed upon reconfiguration plan for that potential event eliminated the need for the post-contingent load shed and concedes that it did not warn either the Commission or Cleco in advance that load shed was a possibility.<sup>131</sup>

On May 25, MISO declared a TSE at 3:59 p.m.<sup>132</sup> MISO directed Entergy to shed load at 4:20 p.m. and directed Cleco to shed load at 4:28 p.m.<sup>133</sup> In issuing the instructions to Entergy and Cleco to shed load, MISO states that it followed MISO's Transmission System Emergency Procedure to shed load for an IROL.<sup>134</sup>

Walter Ferguson, with MISO External Affairs, first texted Chairman Francis, Commissioner Skrmetta, Commissioner Coussan, Commissioner Lewis, Commissioner Campbell, Mr. Shyne, and Commissioner Coussan's Executive Assistant Grayson Walsh between 4:32 p.m. and 4:34 p.m., and then had a phone call with Commissioner Skrmetta at 5:26 p.m.<sup>135</sup> MISO outside counsel also communicated with Commissioner Lewis via text beginning at 5:20 p.m.<sup>136</sup> The texts to the Commissioners indicated that Entergy was being given load shed instructions for 500 MW in the Slidell and New Orleans area, and Cleco was being given load shed instructions for 100 MW in the North Shore area.<sup>137</sup> During the outage, MISO sent periodic text updates as

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<sup>131</sup> *Id.*

<sup>132</sup> MISO Response to Staff Data Request 1-7(i) (CONFIDENTIAL); MISO Response to Staff Data Request 1-9 at 3.

<sup>133</sup> MISO Response to Staff Data Request 1-7(i) (CONFIDENTIAL); MISO Response to Staff Data Request 3-2.

<sup>134</sup> MISO Response to Staff Data Request 1-3; MISO Response to Staff Data Request 1-4.

<sup>135</sup> MISO Response to Staff Data Request 1-7(a), (h) Attachment A.

<sup>136</sup> MISO Response to Staff Data Request 1-7.

<sup>137</sup> MISO Response to Staff Data Request 1-7(h) Attachment A.

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the load was released, alerting when 100 MW for Entergy and 20 MW for Cleco had been released, when 200 MW for Entergy and 40 MW more for Cleco were released, and then when all MWs had been released to Entergy and Cleco for restoration.<sup>138</sup>

Mr. Ferguson also texted Commission Staff, including Commission Executive Secretary Mr. Frey, Commission Executive Counsel Ms. Bowman, Commission Deputy General Counsel Ms. Evans, Commission consultant Lane Sisung, and outside counsel Noel Darce beginning at 4:30 p.m.<sup>139</sup> Those texts included the same updates regarding when load was released for restoration as MISO texted to the Commissioners. During the outage, Mr. Ferguson texted that the outage was due to a "[f]orced outage along with higher load."<sup>140</sup>

MISO provided a report on the May 25 Load Shed Event on August 1, 2025 as part of its responses to Staff discovery requests.<sup>141</sup>

### **6. MISO Compliance with Section VI of Attachment A for the May 25 Load Shed Event**

Section VI.2 of Attachment A of General Order dated April 13, 2017 states that "[w]hether the electric service interruption is electric utility or Regional Transmission Organization ("RTO") initiated, to the extent possible, the RTO shall notify the Commission and coordinate with the utility in accordance with the RTO's Emergency Response Plan *prior* to . . . any action to maintain bulk power supply integrity." MISO asserts that prior notification was not possible because the May 25 Load Shed Event was an emergency where MISO had to mitigate the IROL within thirty minutes, as required by NERC Reliability Standard IRO-009-2, but that a MISO External Affairs

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<sup>138</sup> *Id.*

<sup>139</sup> MISO Response to Staff Data Request 1-7(a).

<sup>140</sup> MISO Response to Staff Data Request 1-7(h).

<sup>141</sup> See Staff Exhibit 2; MISO Response to Staff Data Request 1-37, Attachment A (Revised).



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representative notified Commissioners and Commission Staff within ten minutes of initiation of load shed.<sup>142</sup>

MISO additionally states that on May 25, the MISO Shift Manager initiated communications that were consistent with the following communications protocols: (1) Event Communications Matrix SO-01-NOP-00-448, which lists the contacts a Shift Manager should notify for a given system condition; (2) MISO and State Official 24x7 Communication Protocols During Emergencies SO-P-AOP-00-217, which defines the process for communications between MISO System Wide Operations, MISO External Affairs, and State Officials during emergency conditions; and (3) Corporate Communications Crisis Plan, which provides the Incident Management Team with best practices, checklists, templates, and communications guidance for use during a crisis that disrupts grid activity or interferes with normal business operations.<sup>143</sup> The MISO and State Official 24x7 Communication Protocols During Emergencies requires the following steps during a Transmission System Emergency and Local Transmission Emergency:

1. For Transmission System Emergencies and Local Transmission Emergencies involving Firm Load Shed, the MISO Shift Manager on duty will contact the Director On-Call or designee.
2. When contacted, the Director On-Call or designee will contact and alert the appropriate External Affairs Executive, or their designee, and Corporate Communications of the Firm Load Shed.
3. External Affairs Executive will then contact the appropriate State Commissioner or State Representative to inform them of the Firm Load Shed in their localized area . . .<sup>144</sup>

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<sup>142</sup> MISO Response to Staff Data Request 1-8.

<sup>143</sup> MISO Response to Staff Data Request 1-9.

<sup>144</sup> MISO and State Officials 24X7 Communication Protocols During Emergencies SO-P-AOP-00-217, MISO, at 2 (May 18, 2023), [https://cdn.misoenergy.org/SO-P-AOP-00-217%20Rev%204%20MISO%20and%20State%20Officials%2024x7%20Communication%20Protocols%20During%20Emergencies311827.pdf?t\\_id=5O8Juo2\\_AIQ8vC9YvLLDjQ%3d%3d&t\\_uid=ru\\_1-glWSYqel4o2m\\_pyxw&t\\_q=SO-P-AOP-00-217&t\\_tags=language%3aen%2csiteid%3a11c11b3a-39b8-4096-a233-c7daca09d9bf%2candquerymatch&t\\_hit.id=Optics\\_Models\\_Find\\_RemoteHostedContentItem/311827&t\\_hit.pos=9](https://cdn.misoenergy.org/SO-P-AOP-00-217%20Rev%204%20MISO%20and%20State%20Officials%2024x7%20Communication%20Protocols%20During%20Emergencies311827.pdf?t_id=5O8Juo2_AIQ8vC9YvLLDjQ%3d%3d&t_uid=ru_1-glWSYqel4o2m_pyxw&t_q=SO-P-AOP-00-217&t_tags=language%3aen%2csiteid%3a11c11b3a-39b8-4096-a233-c7daca09d9bf%2candquerymatch&t_hit.id=Optics_Models_Find_RemoteHostedContentItem/311827&t_hit.pos=9).

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The MISO and State Officials Communications Protocol should initiate "[a]ny time there is a projection of, or actual loss of load due to transmission issues that may undermine public health, safety, and welfare."<sup>145</sup>

MISO notified Commissioners and Commission Staff once the load shed was underway, but did not notify the Commission in advance of the load shed, despite its assertion that it had warned Entergy regarding the load shed the prior day. However, as discussed above, this so called warning was a direction to develop a post-contingent load shed plan for the potential loss of the [REDACTED] and not a warning for the actual load shed that was called without that loss.

MISO responded to data request Staff 3-1 that the MISO Reliability Coordinators logged 63 instances where MISO directed post-contingent load shed be included in post-contingent action plans from July 1, 2024 to August 4, 2025. MISO added that although load shed is rarely necessary, it is not uncommon for the transmission system to experience multiple stressors where there is a limit to the availability of generation redispatch options and, consequently, operate in a state where post-contingent load-shed must be considered. Given the frequency by which post-contingent load shed plans are developed, the May 24 communication cannot be considered notification or warning to Entergy of the load shed that was actually called on May 25. As discussed in Section IV.B.2. above, MISO's unique "Temporary IROL" designation employs the same threshold to identify risk and trigger action. This is a structural deficiency in the Temporary IROL process that provides no time for adequate notice to utilities, the public or regulators; Staff thus recommends a two-stage redesign of the Temporary IROL process or some other MISO-developed solution that will allow for adequate notification.

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<sup>145</sup>

*Id.* at 1.



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MISO's lack of prior notice in this situation was the unfortunate byproduct of the design of its Temporary IROL process. That process should be redesigned to allow for adequate stakeholder notice, but based on the prevailing standards as they exist today in MISO, MISO notified the Commission of the event in a reasonable time frame.

### **7. MISO's Communications with Member Utilities Entergy and Cleco.**

MISO's communications and coordination with Entergy and Cleco were substantially lacking in key respects. There can be little doubt that MISO failed to communicate sufficiently with Cleco regarding the load shed event. MISO admits that "Cleco representatives were not notified prior to the load shed taking place and were not warned in advance that load shed was a possibility."<sup>146</sup> MISO's first communication with Cleco regarding the load shed event occurred on May 25, 2025 at 1628 PM EST.<sup>147</sup> During that communication "MISO issued an Operating Instruction to Cleco to shed 100 MW in the Northshore area effective immediately, until further notice."<sup>148</sup> MISO's instructions to Cleco were vague and "did not specify" the load to be shed "by location (*e.g.*, circuit, feeder station, geographic area, municipality, zip code) or by hour."<sup>149</sup> The RTO also failed to explain to Cleco the reason for the load shed order in the initial communication, requiring Cleco to call MISO back to obtain that information.<sup>150</sup>

MISO's communications with Entergy concerning the load shed event were also inadequate. Although the timing and quantity of MISO's communications with Entergy were superficially appropriate, the substance conveyed during those communications was not sufficient

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<sup>146</sup> MISO Response to Staff Data Request 1-7(d).

<sup>147</sup> MISO Response to Staff Data Request 1-7(a).

<sup>148</sup> Staff Exhibit 2 at 16.

<sup>149</sup> Cleco Response to Staff Data Request 1-1(g).

<sup>150</sup> Staff Exhibit 2 at 16.

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to allow Entergy to best react to the emerging transmission emergency. Entergy reports that on May 22, 2025, three days before the load shed order, its TCC emailed MISO to address potential constraints in the Amite South area and to propose "reconfiguration options to alleviate those constraints."<sup>151</sup> MISO states that it continued communications with Entergy on May 24, 2025, the day before the load shed event occurred.<sup>152</sup> On that morning, "MISO Reliability Coordinators notified Entergy . . . that, due to unplanned generator outages, there would be little generation left to re-dispatch to address transmission issues in the area."<sup>153</sup> MISO confirms that throughout that day, MISO and Entergy "reviewed options for transmission line reconfiguration" to address the potential transmission emergency if it occurred.<sup>154</sup>

Entergy states that at 3:03 AM EST on May 25th, the day of the load shed event, Entergy further "discussed the proposed reconfiguration option with MISO, and MISO confirmed that the reconfiguration option was valid."<sup>155</sup> According to Entergy, at 12:56 PM EST, MISO again communicated to Entergy that the line reconfiguration that had been discussed "relieves the constraint entirely" and that "[a]t that point in time, [they] don't even have to shed load."<sup>156</sup>

Entergy appropriately interpreted MISO's May 24 communications related to the concerns regarding [REDACTED] as the request for development of mitigating reconfiguration options and the development of a potential post-contingent load shed. Entergy was not notified by MISO that it was possible that a pre-contingent load shed order could be issued by MISO. Entergy stated that "ELL did not expect

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<sup>151</sup> Staff Exhibit 1 at 5.

<sup>152</sup> MISO Response to LPSC Staff Data Request 1-7(a).

<sup>153</sup> Staff Exhibit 2 at 10.

<sup>154</sup> *Id.*

<sup>155</sup> Staff Exhibit 1 at 5.

<sup>156</sup> *Id.*



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and had no indication from MISO" that a pre-contingent load shed "was likely to be necessary prior to its occurrence."<sup>157</sup>

At 3:59 PM EST, twenty-one minutes before the load shed order, MISO informed Entergy that a transmission system emergency had been declared. Additionally, MISO analyses showed that "the post-contingent [REDACTED] reconfiguration was no longer a viable option."<sup>158</sup> However, as far as Entergy was aware, the previously-discussed line reconfiguration proposal was still the likely post-contingency course of action and Entergy was never told that MISO analyses showed that the reconfiguration proposal would not be effective.<sup>159</sup> According to Entergy, "MISO did not request" that Entergy perform "any action at that time."<sup>160</sup> MISO had also "decided to treat the [REDACTED] as a temporary IROL," but MISO failed to communicate that information to Entergy.<sup>161</sup>

At 4:20 PM EST, MISO called the Transmission Operators at the TCC and ordered Entergy to shed 500 MWs of load. MISO did not alert Entergy that the load shed order was intended to respond to "IROL-like conditions or to emergency conditions following an IROL study."<sup>162</sup> The Entergy TCC called MISO back at 4:25 PM EST to inquire about implementing the reconfiguration plan as MISO and Entergy had previously discussed. Entergy explained that "[f]or the first time, MISO stated that the reconfiguration plan would not work."<sup>163</sup>

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<sup>157</sup> Entergy Response to Staff Data Request 2-1.

<sup>158</sup> MISO Response to Staff Data Request 3-5 (CONFIDENTIAL).

<sup>159</sup> Staff Exhibit 1 at 5.

<sup>160</sup> *Id.*

<sup>161</sup> Staff Exhibit 2 at 11.

<sup>162</sup> Staff Exhibit 1 at 5.

<sup>163</sup> *Id.*

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In addition to its failure to keep Entergy sufficiently apprised of the status of the emerging transmission emergency and the effectiveness of the reconfiguration plans, MISO also failed to clearly communicate the load shed instructions once it issued its orders to shed load. Entergy explained that MISO's load shed instructions were vague and that Entergy's ability to react to the event was affected as a result.<sup>164</sup> MISO failed to provide "specific Operating Instructions" in the load shed order to communicate to Entergy which load needed to be shed. The RTO "did not identify substations at which load must be shed but rather instructed that the load shed be executed in the Slidell and New Orleans area."<sup>165</sup> As a result, Entergy had to call MISO for clarification on the operating instruction, thereby delaying the execution of the load shed order.<sup>166</sup> MISO's instructions were also confusing because the load shed order asked ELL and ENO to shed load in the Slidell area despite that "ELL serves very little load in [that] area, and ENO serves none."<sup>167</sup>

There were numerous failures in MISO's communications to Cleco and Entergy that were preventable. First, MISO completely neglected Cleco in all communications leading up to the load shed event. Cleco did not receive notice of the possibility of a load shed event until the order was given. Secondly, although Entergy was aware that there were post-contingent concerns related to the [REDACTED], those concerns had been addressed with an agreed upon mitigation plan; Entergy was not aware that a pre-contingent load shed was even being considered until MISO gave the order to shed load. Entergy was also never made aware that its line reconfiguration proposal would not be effective despite MISO analyses that indicated that the plan would not work. The results of those analyses

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<sup>164</sup> *Id.* at 14.

<sup>165</sup> Entergy Response to Staff Data Request 1-1(g).

<sup>166</sup> Staff Exhibit 2 at 11.

<sup>167</sup> *Id.*; Entergy Response to Staff Data Request 1-1(g).



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were known approximately 15 minutes before the load shed order was given, yet MISO did not convey that information to Entergy at that time. Lastly, MISO's load shed orders did not provide the specific details. Instead, MISO's orders omitted specifics regarding which load was to be shed, thereby hindering Entergy and Cleco's ability to execute the orders as quickly and efficiently as possible.

MISO admits that "the absence of a formal, pre-emergency declaration for Transmission System Emergencies limited the situational awareness paths available to MISO, member utilities, elected officials and residents. The lack of public notification resulted in residents and elected leaders feeling unprepared for the impending loss of power."<sup>168</sup> MISO states that it will address "opportunities for improved or enhanced communication between MISO and member utilities" in its stakeholder process beginning in the third quarter of 2025.<sup>169</sup> MISO's protocols for communications with members in Transmission System Emergencies are lacking. MISO's specific communications with respect to the May 25 Load Shed Event were deficient, and Staff agrees with MISO that its communication protocols are in need of improvement. As discussed in more detail in Sections IV.B.2 and VI of this Report, Staff supports improvement of MISO-to-member communication through the stakeholder process and will participate in that process to ensure necessary improvements are made.

However, MISO should be aware that its deficient communications did not just leave elected leaders and residents "*feeling* unprepared for the impending loss of power." The lack of notice and dearth of information had practical real-world implications that compromised Entergy's and Cleco's ability to manage the load shed to mitigate functional and economic harm to customers.

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<sup>168</sup> Staff Exhibit 2 at 13.

<sup>169</sup> *Id.*

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As Entergy points out, MISO's deficient communications and coordination denied it: (1) the ability to use its expertise regarding the Entergy system to use the rotation load shed tool or manual selection to identify the specific breakers that can best be used to implement the load shed directive; (2) a reasonable opportunity to assess calling on interruptible customers to shed load in advance of, and potentially *in lieu of*, firm customers; (3) the ability to use existing load shed procedures; and (4) the ability to provide advance notice to allow the public to prepare.<sup>170</sup>

Entergy states that it will discuss these issues with MISO "[t]o help drive improvement."<sup>171</sup> Staff encourages these discussions and recommends that the Commission require a report from Entergy regarding the results of these discussions, as well as any improvements that Entergy supports in the MISO stakeholder process, within 60 days of any order accepting this recommendation, and at 60 day intervals thereafter until Staff determines that such reports are no longer helpful or necessary. It is imperative that MISO improve the substance, clarity, and timing of its communications with member utilities so that member utilities can best manage any load shed orders to minimize customer impacts.

MISO proposes that discussions regarding improvements in communications between MISO and members relating to TSEs will begin at meetings of the Reliability Operations Working Group ("ROWG").<sup>172</sup> MISO states that a primary goal of the ROWG discussions will be to develop proposals for more advanced communication that provides greater situational awareness and describes the process to develop such procedures. The ROWG will consider, for example,

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<sup>170</sup> Staff Exhibit 1 at 11-12, 19.

<sup>171</sup> *Id.* at 12.

<sup>172</sup> MISO Response to Staff Data Request 4-10. The ROWG is a closed working group that focuses on reliability issues and their mitigations, particularly concerning the Bulk Electric System. It provides a forum for stakeholders to discuss and advise MISO on reliability risks and the development of training activities to ensure reliable operations. The group is composed of MISO personnel, transmission owners/operators within the MISO reliability footprint, and other relevant entities like Balancing Authorities.



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whether a certain MW of potential load shed, a location of potential load shed, or a certain threshold of system constraint would trigger advanced communication. According to MISO, the ROWG will consider the balance between providing advanced communication with the likelihood that a TSE or load shed will not result.

Given that the ROWG's sessions are closed, Staff assumes that these discussions will start in this closed group due to legitimate security and confidentiality concerns regarding grid reliability. Neither this Commission nor any other regulator from MISO South is a member of this group. It is imperative that this group develop its proposals promptly, and provide full informational support for any proposals that come out of the ROWG so that they can be reviewed in an open process that includes regulators. MISO states that the ROWG proposals "will be considered by the Reliability Subcommittee, during which comments can be submitted and the proposals can be further revised" and that approved proposals will be implemented when "the stakeholder process is completed."<sup>173</sup> Staff understands that this presentation is now planned to be first be made at the October 8<sup>th</sup> Reliability Subcommittee meeting and that this to be a full and open stakeholder process and its support of this MISO recommendation is contingent on that understanding.

### **E. COMPLIANCE WITH OTHER COMMISSION ORDERS**

In General Order dated May 31, 2022 (Docket No. R-34758), the Commission codified and adopted communications protocols to be effective during and after the declaration of Emergency Events, under which RTOs operating in Louisiana and LPSC-jurisdictional utilities are required to communicate in a timely manner information regarding an emergency event and its operational performance during the event, as well as the performance of each of the generating

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<sup>173</sup> *Id.*

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units on which it relies to serve its load and any transmission/distribution line or facility performance issues.<sup>174</sup> The rules in General Order dated May 31, 2022 were developed after Winter Storm Uri in 2021. Those rules resulted in RTOs declaring several transmission emergencies requiring utilities to shed load several times while under Energy Emergency Alerts ("EEA"). General Order dated May 31, 2022 provides additional requirements for notifications and communications when there is a declared EEA above what is required by the Non-Emergency Outage Reporting Section VI in Attachment A of General Order dated April 13, 2017. Because no EEAs were declared during the May 25 Load Shed Event, the communication protocol requirements in Rule 2 of General Order dated May 31, 2022 do not apply. However, as discussed in the next section, Staff recommends that the communication protocol requirements of General Order dated May 31, 2022 apply to transmission system emergencies and localized emergencies. Therefore, those requirements are briefly discussed herein.

General Order dated May 31, 2022 requires RTOs operating in Louisiana, which would include MISO, and LPSC-jurisdictional utilities to modify their emergency communication protocols to include instances when extreme weather events trigger EEA Level 1 and higher declarations.<sup>175</sup> The Order requires that those entities designate two Energy Emergency Contacts to be the primary contacts to provide information to the Commission, the Commissioners, the Commission Executive Secretary, and the Commission Executive Counsel when energy emergencies are declared.<sup>176</sup> The Order specifies that the Commission's primary designated

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<sup>174</sup> LPSC General Order, Docket No. R-34758, dated May 31, 2022, Louisiana Public Service Commission, ex parte, *In re: Timely disclosure of facts and notices, regarding such matters as MaxGen alerts, to Commission and Commissioners, and related matters* ("General Order dated May 31, 2022"). The Commission subsequently issued an Order dated August 26, 2022 temporarily waiving certain provisions of General Order dated May 31, 2022; however, those provisions are not applicable herein.

<sup>175</sup> General Order dated May 31, 2022, at 12, Rule 2.

<sup>176</sup> *Id.*, Rule 2(a).



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contacts are the Commission Chairman and the Commission Executive Secretary; however, simultaneous notices of any EEA 1 event or higher must be provided to the other Commissioners, and the Commission Executive Counsel and Deputy General Counsel simultaneously with the provision of information to the Commission Chairman and the Commission Executive Secretary.<sup>177</sup>

Rule 2 in General Order dated May 31, 2022 further requires RTOs to make the Commission aware, in real time, of the status of generation, transmission, electric service interruption, LMR utilization, and other mitigation during an EEA 1 or higher event. The Order specifies the information that RTOs must provide immediately upon the emergency event declaration and the information which must be supplied no later than 120 days after the end of the emergency declaration. The Order also requires similar notifications from investor-owned utilities.

MISO states that it has communications protocols in place for EEA events pursuant to the General Order dated May 31, 2022.<sup>178</sup> MISO reports that these protocols were not triggered by the May 25 Load Shed Event, however, because EEA events are related to capacity issues and the May 25 Load Shed Event was a transmission system emergency.<sup>179</sup>

## VI. RECOMMENDATIONS FOR IMPROVEMENTS TO COMMUNICATIONS PROTOCOLS

Similar to the recommendations made in Staff's After-Action Report on RTO-called load sheds in the SWEPCO service area in Docket No. U-37588, Staff recommends the following:

1. The May 25 Load Shed Event revealed a shortcoming where localized transmission system emergencies do not require or trigger the same level of communication as declared energy emergencies. Because the May 25 Load Shed Event was not

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<sup>177</sup> *Id.*

<sup>178</sup> MISO Response to Staff Data Request 1-8.

<sup>179</sup> *Id.*

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declared an EEA, the more specific, real-time notification requirements that would apply to EEAs under General Order dated May 31, 2022 did not apply. Therefore, Staff recommends that the Commission develop and adopt notification and communications requirements for RTOs and LPSC-jurisdictional utilities during TSEs and localized emergencies that are similar to the notification and communication requirements during Energy Emergency Alerts ("EEA"), as provided in the Commission's General Order dated May 31, 2022. Alternatively, Staff recommends that "Emergency Events" be clearly defined in General Order dated May 31, 2022 and expanded to include TSEs and localized emergencies, as well as EEAs.

2. Staff recommends that the rules for notification and reporting in General Order dated April 13, 2017 for load shed events such as the May 25 Load Shed Event be amended and/or clarified consistent with the recommendations throughout this Report to provide Entergy, Cleco, MISO and all other utilities and RTOs operating in Louisiana with sufficient notice and guidance on what is expected of them during such events. Those amendments should be made in an appropriate proceeding that will allow for public participation and comments on any rule changes.
3. MISO's communication and coordination with member utilities Entergy and Cleco were inadequate and need improvement so that any load shed necessitated by transmission emergencies is handled in a manner that mitigates customer impacts as much as possible. Staff supports the recommendations by MISO in its responses to Staff discovery requests and its report on the May 25 Load Shed Event to improve communications, internal procedures, and education and training related to transmission system emergencies and plans to participate in MISO stakeholder proceedings to ensure these improvements are implemented. Staff also encourages MISO to reconsider how it defines and implements its unique "Temporary IROL" in a manner described in Section IV.B.2. to allow more notification of these potential events.
  - a. **Communication Protocols Between MISO, Members, and Regulators:** MISO states that it intends to evaluate and potentially implement enhanced communications protocols between it, members, and regulators of members through the stakeholder process beginning in the third quarter of 2025.<sup>180</sup> MISO describes that the improvements and enhancements developed as part of the ROWG process described above could inform any new communication protocols between MISO, members, and regulators regarding TSEs. MISO proposes to work with the MISO South regulator staffs to develop new processes for communications regarding TSEs, and will consider providing useful, substantive information to the regulators as opposed to providing frequent alerts that do not present a high likelihood of a TSE or need to shed load. MISO also states that it would like to work

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<sup>180</sup>

Staff Exhibit 2 at 13; MISO Response to Staff Data Request 4-11.



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with the MISO South regulators to develop proposals for enhanced communications.<sup>181</sup>

- b. **Internal Communication Procedures:** MISO indicates that it is considering adjustments to internal procedures related to potential future transmission system emergencies, including: (1) transmission advisory changes; (2) roles and responsibilities for load shed, e.g., how MISO communicates with membership during a local transmission emergency ("LTE") or TSE; (3) implementation of new trigger points for systems and models, which would lead to communication with members; and (4) reviewing existing transmission emergency procedures to determine if more clarity is needed for communications with members.<sup>182</sup> Additionally, MISO states that it has already implemented some enhancements by increasing the communications of capacity advisories for load pockets to its members and posting such advisories on its website.<sup>183</sup>
  - c. **Training and Education:** MISO has identified several lessons learned with regard to education and training. MISO states that it intends to pursue education and training for public stakeholders and elected officials regarding the differences between capacity and transmission emergencies in appearance, timeline, and response.<sup>184</sup> MISO also intends to develop load shed workshops and tabletop exercises to address knowledge gaps between MISO and member utilities regarding the specific roles, responsibilities, and expectations during transmission and capacity load shed events.<sup>185</sup> MISO has identified the following action items to address those lessons learned, (1) integrate IROL and TSEs into MISO's load shed workshops and tabletop exercises, and (2) expand planned load shed workshops and tabletop exercises to include additional members.<sup>186</sup>
4. Staff supports Entergy's recommended actions that it provided in its After-Action Report on the May 25 Load Shed Event to improve public and internal communications:
- a. Eliminate MISO notification dependence by establishing an alternate Entergy Services Louisiana/Entergy Operating Company-specific internal communication trigger from the TCC capable of serving as a predictor for dynamic events.

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<sup>181</sup> *Id.*

<sup>182</sup> MISO Response to Staff Data Request 4-7.

<sup>183</sup> *Id.*

<sup>184</sup> Staff Exhibit 2 at 13.

<sup>185</sup> *Id.*

<sup>186</sup> *Id.*

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- b. Evaluate and establish an internal notification process to critical internal teams.
- c. Establish an expectation that Corporate Communications, External Affairs, and the Integrated Customer Organization activate upon receipt of notifications and implement their respective emergency response plans.
- d. Modify existing plans, procedures, and messaging templates to include the IROL scenario related to customer communications, external stakeholder communications, and customer operations.
- e. Provide training on response procedures, expectations during an event, and updated process flow.
- f. Conduct drills on procedures.
- g. Ensure process modifications have full alignment with any improvements or modifications MISO implements to its notification process following its after-action review of the May 25 Load Shed Event.
- h. Review and enhance load shed messaging to address IROL and dynamic event scenarios.
- i. Improve the capability of key customer systems to handle high capacity, short time-frame scenarios.<sup>187</sup>
- j. Recommendations to improve internal communications for implementation of load shed:
  - i. Align Entergy's TCC load shed internal communication procedure to the process utilized by Entergy's Distribution Operations Center ("DOC").
  - ii. Create proactive internal communication triggers for IROL and dynamic events.<sup>188</sup>

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<sup>187</sup> Staff Exhibit 1 at 18-19.

<sup>188</sup> *Id.* at 15.



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### **VII. WHETHER ANY FINES, PENALTIES, OR MONETARY DAMAGES ARE WARRANTED PURSUANT TO SECTION VIII OF ATTACHMENT A OF GENERAL ORDER NO. R-32786, OR PURSUANT TO ANY OTHER PROVISION OF LAW**

The Commission has the discretion to assess penalties under Section VIII of Attachment A of General Order dated April 13, 2017 for violations of the rules contained therein, but only against a jurisdictional utility, not an RTO.<sup>189</sup> A daily fine up to \$1,000 may be assessed against a utility for the failure to comply with any of the requirements in Attachment A, other than the failure to submit an annual Emergency Service Plan, which results in a different fine amount.<sup>190</sup> The cumulative total of the fines cannot exceed \$100,000.<sup>191</sup> General Order dated April 13, 2017 specifies that the fines and penalties are "discretionary" and should not be imposed for "administrative or inadvertent" failures to comply with the rules.<sup>192</sup> The Commission may grant an exception to all or a portion of the rules in Attachment A upon a showing of good cause.<sup>193</sup>

Both Entergy and Cleco complied with the requirements of Section II of Attachment A requiring annual ESP filings. Additionally, both Entergy and Cleco complied with the requirements for an outage reporting system, as required by Section IV, and for an automated alert notification system, as required by Section V. Entergy and Cleco used both an outage system and an automated alert system at the time of General Order dated April 13, 2017 and were not required to make compliance filings pursuant to the order. Therefore, no fines are warranted based on those sections.

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<sup>189</sup> General Order Dated April 13, 2017 at Attachment A, Section VIII.

<sup>190</sup> *Id.* at Attachment A, Section VIII.B-C.

<sup>191</sup> *Id.* at Attachment A, Section VIII.C.

<sup>192</sup> *Id.* at Attachment A, Section VIII.E.

<sup>193</sup> *Id.* at Attachment A, Section IX.

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Entergy failed to meet several requirements of Section VI of Attachment A – prompt notification, communication of restoration times, and reporting within 3 days. Cleco had similar failures, as discussed in Section V of this Report. These failures, however, were due in large part to MISO's failure to communicate and coordinate effectively with the utilities. Because of this, combined with the lack of clarity in the precise requirements of Section VI of Attachment A, Staff recommends against the assessment of any penalties against Entergy or Cleco. While Staff is not recommending fines, Staff emphasizes that LPSC-jurisdictional utilities should report outages to the Commission, including all Commissioners and key Commission Staff, prior to an outage occurring where possible, or concurrent with the outage if prior notice is not possible. Further, utilities should proactively provide reporting following load shed events as soon as possible, even if all of the causes are not yet known and the report must be supplemented at a later time.

MISO's failure to communicate effectively with Entergy and Cleco hampered those utilities' ability to manage the load shed to mitigate customer harm, to call on interruptible load to curtail power usage in an attempt to avert or lessen the outages, and to provide prior public notice of the impending power loss. Many of MISO's communications and coordination mistakes could and should have been avoided. Others resulted from a Temporary IROL construct that does not permit adequate advanced notice of pending load sheds. The Commission lacks jurisdiction to assess penalties against an RTO, but its gaps in communication, whether due to lack of sufficient transmission emergency protocols, or its Temporary IROL design, should be fixed as quickly as possible to mitigate future harm to Louisiana customers from MISO-called load sheds.



## VIII. CONCLUSION

### A. CAUSES OF THE MAY 2025 LOAD SHED EVENT

1. The root cause of the May 25 Load Shed Event was MISO's declaration of a TSE due to a Temporary IROL on the [REDACTED] [REDACTED].
2. The Temporary IROL was driven by a combination of factors, including (i) limited transfer capability caused by the ongoing outage of the Nelson-Richard 500kV transmission line; (ii) lack of available generation within the Amite South load zone due to both planned and unplanned outages; and (iii) the pre-defined parameters of MISO's unique "temporary" IROL designation, which required an immediate load shed for a projected post-contingent exceedance without reasonable notice.
3. The Nelson-Richard 500kV line went out of service on March 24, 2025 due to damage caused by severe weather. When the Nelson-Richard 500kV line is out, Amite South's import limit materially declines and operators must rely on costly local redispatch and must-run commitments to maintain voltage and stability.
4. The amount of planned generation outages for the Amite South Load Zone was not problematic (2,984 MWs), but when combined with the amount of forced outages (3,937 MWs) and forced derates (1,093 MWs), total generator outages in the Amite South load zone exceeded 50% of all generation. Based on disclosures made by the MISO Independent Market Monitor, Staff has verified that some solar generation, and suspects that some of the other non-regulated

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generation did not follow dispatch instructions which increased the flows on the constraint.

5. MISO's unique, real-time Temporary IROL action call based on a post-contingent risk forces planning and operations into the IROL exceedance mitigation window with little to no warning and limits effective targeting, coordination, and transparency.

### **B. RECOMMENDATIONS TO ADDRESS ROOT CAUSES OF MAY 2025 LOAD SHED EVENT**

1. Reassess the current thresholds for committing additional generation to manage anticipated voltage and reliability risks to ensure that they are set appropriately.
2. Reform MISO's Temporary IROL procedures to allow for more time, communication, and targeted solutions for post-contingent risks.
3. Staff recommends a two-stage redesigning of the Temporary IROL construct. This recommendation would provide for a notification of concern at one level (e.g. >125% line exceedance) and action to address the concern at another level (e.g. >150%). This two-step process would allow for a more orderly development of specific action plans to address IROL concerns as further discussed in Section IV.B.2 of Staff's Report.
4. ELL, MISO, and the Commission should maintain focus on finding solutions to improve the ability to move power within the Amite South load pocket and increase load-serving capability. Prudent transmission planning should continue to seek projects which the Commission may find are in the public interest.



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### C. COMPLIANCE WITH GENERAL ORDER DATED APRIL 13, 2017 AND FINES FOR NON-COMPLIANCE

1. Staff finds that both ELL and Cleco complied with Sections II (Emergency Services Plans), IV (Statewide Electricity Outage Reporting System), and V (Automated Customer Notification/Text Messaging System) of Attachment A of General Order R-32786.
2. ELL failed to comply with Section VI.1 of Attachment A of General Order dated April 13, 2017, which requires utilities to promptly notify the Commission of any loss of service that is expected to be more than three hours. ELL did not notify the Commission of the service disruption until 1.5 hours after MISO ordered ELL to shed load.
3. ELL did not comply with Section VI.1.a, which requires an estimated restoration time to be communicated to the LPSC Executive Secretary, LPSC ESF-12 Lead, and the relevant LPSC District Office(s).
4. ELL failed to fully comply with the reporting requirements of Section VI.2.d, which require the utility to notify the Commission within twenty-four hours and provide a full report within seventy-two hours of the service disruption where prior notification is not possible. While ELL notified the Commission of the outage within 24 hours through its emails to Commissioners and Commission Staff on May 25, ELL did not provide a full report until two months later when it provided its post event report on August 1.
5. Staff acknowledges that the current reporting requirements of Section VI.2.d of Attachment A of General Order dated April 13, 2017 do not specify what is meant by a "full report," and that it would be difficult for an entity to provide a

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detailed root cause analysis within 72 hours of an outage. Staff provides a recommendation below for the Commission to consider providing more detail as to the reporting requirements.

6. Staff finds that Cleco promptly notified the Commission of the disruption in service as required by Section VI.1. Staff finds that because Cleco did not have advance warning of the possibility of a load shed event, and given the urgency of having to address an unforeseen call to shed load, its phone call to Commissioner Skrmetta half an hour after receiving the load shed order and five minutes after the load shed commenced was prompt notification.
7. Cleco reported the loss of service through phone calls to Commissioner Skrmetta at 4:58 p.m., Commissioner Lewis at 6:51 p.m., and Commission Executive Secretary Brandon Frey during the outage. In the future, however, Cleco and other Louisiana utilities should promptly notify *all* Commissioners and Commission Staff of load sheds, not just a particular Commissioner or Commissioners.
8. Cleco failed to comply with Section VI.1.a, which requires an estimated restoration time to be communicated to the Executive Secretary, LPSC ESF-12 Lead, and the relevant District Office(s). Cleco provided restoration information in real time without estimates.
9. Cleco failed to provide a report to the Commission within seventy-two hours of the service disruption (Section VI.2.d). Cleco did not provide and, as of the time of writing this report still has not provided, any written report to the Commission related to the May 25 Load Shed Event.



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10. Staff recommends that the Commission exercise its discretion not to assess fines against Cleco and Entergy for failure to meet the requirements of Section VI of Attachment A of the General Order dated April 13, 2017. The Commission lacks jurisdiction to assess fines against MISO, as a FERC-jurisdictional RTO.
11. MISO had a reporting responsibility pursuant to Section VI.2. Since MISO did not notify the Commission of the load shed event prior to the service disruption, it was not in compliance with the reporting requirements of Section VI.2. But based on the prevailing standards as they exist today in MISO, Staff believes that MISO notified the Commission of the event in a reasonable time frame.
12. MISO's communications with Entergy and Cleco were substantially lacking. MISO did not provide any advanced warning to Cleco that a load shed event was a possibility. MISO informed Entergy that a post-contingent load shed event was possible, but not the pre-contingent event that occurred. MISO also failed to timely notify Entergy that a line reconfiguration proposal that had been previously discussed as an effective mitigation measure was found by recent MISO studies to no longer be an effective option.
13. Once the load shed order was given, MISO did not alert Entergy that the order was intended to respond to "IROL-like conditions or emergency conditions following an IROL study." MISO also failed to provide Entergy and Cleco with clear load shed instructions, delaying the execution of the load shed order.
14. MISO's gaps in communication, whether due to lack of sufficient transmission emergency protocols, or its Temporary IROL design, should be fixed as quickly

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as possible to mitigate future harm to Louisiana customers from MISO-called load sheds. The Staff will participate in MISO's planned stakeholder processes on these issues to ensure that the Commission's interests are represented and improvements are made.

15. As a RTO with Louisiana utility members whose actions dramatically impact resource adequacy in Louisiana, MISO should comply with Louisiana Commission rules because they are essential to providing safe, reliable service in Louisiana. Absent compliance with such rules, the LPSC should consider whether additional conditions should be imposed on LPSC-jurisdictional utilities' participation in the RTOs. This review can be done as part of Staff's on-going review of the costs and benefits of RTO membership and alternatives to RTO membership.

16. The Staff should consider the Commission's inability to hold RTOs accountable for their contribution to load shed events through penalties or other accountability structures in its on-going assessment of the costs and benefits of jurisdictional utilities' membership in RTOs.

### **D. RECOMMENDATIONS FOR COMMUNICATION IMPROVEMENT AFTER MAY 2025 LOAD SHED EVENT**

1. Staff recommends that the Commission consider providing more detail as to what type of reporting is required under Section VI.2.d of Attachment A of General Order dated April 13, 2017, when the reporting is required to be submitted, and suggests that a preliminary report would be appropriate to be required within 72 hours, with a more comprehensive report due at a later interval, such as within 60 days.



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2. The Commission should develop and adopt notification and communications requirements for RTOs and LPSC-jurisdictional utilities during TSEs and localized emergencies that are similar to the notification and communication requirements during Energy Emergency Alerts (“EEA”), as provided in the Commission's General Order dated May 31, 2022. Alternatively, Staff recommends that “Emergency Events” be clearly defined in General Order dated May 31, 2022 and expanded to include TSEs and localized emergencies, as well as EEAs.
3. The rules for notification and reporting in General Order dated April 13, 2017 for load shed events such as the May 25 Load Shed Event be amended and/or clarified consistent with the recommendations throughout Staff’s Report.
4. Staff supports the recommendations by MISO in its responses to Staff discovery requests and its post event report to improve communications, internal procedures, and education and training related to transmission system emergencies and plans to participate in MISO stakeholder proceedings to ensure these improvements are implemented.<sup>194</sup> The Staff will participate in these stakeholder proceedings to ensure the Commission's interests are represented and improvements are made.
5. Staff supports ELL’s recommended actions that it provided in its post event report to improve public and internal communications.<sup>195</sup> ELL should report on the results of its discussions with MISO regarding improvements, as well as

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<sup>194</sup> See *supra* Section VI.3.

<sup>195</sup> See *supra* Section VI.4.

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any improvements it supports in the MISO stakeholder process, within 60 days of any order accepting this recommendation, and at 60 day intervals thereafter until Staff determines that such reports are no longer helpful or necessary.



**LOUISIANA PUBLIC SERVICE COMMISSION**

**DOCKET NO. X-37608**

**LOUISIANA PUBLIC SERVICE COMMISSION,  
EX PARTE**

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*In re: After-Action Review of Cleco Power and Entergy Louisiana's May 25, 2025  
outages, pursuant to General Order Dated April 13, 2017 (Docket No. R-32786)*

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**STAFF EXHIBIT 1**



# May 2025 Load Shed

After Action Report

August 2025

## Our values

safety

teamwork

always learning

integrity

respect







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## Preface

Entergy<sup>1</sup> conducted a post-event review of the May 25, 2025, Interconnection Reliability Operating Limit (IROL) load shed mitigation planning and response actions. The purpose of this review was to determine areas of strength and areas in which improvements can be made in the planning and execution of Entergy's response to an IROL event.

The areas described as needing improvement are intended to assist Entergy in promoting continuous improvement generally, with specific reference to emergency operations or severe weather events. The areas for improvement are based on best practices. Consistent with its role as an essential service provider, Entergy maintains high standards of performance for operational events, and this report does not attempt to set forth an exhaustive list of the activities and practices that were performed well during the events at issue. Rather, the strengths identified in this Report focus on the actions various employees took under difficult conditions to ensure the reliability of the Bulk Electric System (BES), i.e., to avoid further load sheds or cascading outages.

This Report focuses on the actions and processes of Entergy New Orleans, LLC (ENO) and Entergy Louisiana, LLC (ELL), as their customers were the ones affected by the May 25 load shed event. The Report also focuses on Entergy Services, LLC (ESL), as it implemented the Midcontinent Independent System Operator, Inc.'s (MISO) load shed direction and worked with MISO before and during the load shed event. However, improvements to ESL procedures also will inure to the benefit of the other Entergy Operating Companies and their customers.

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<sup>1</sup> The term "Entergy" is used in this Preface to collectively refer to Entergy Services, LLC and all the Entergy Operating Companies, which are separate and distinct affiliate entities.



# Introduction

The May 25 load shed event was the second IROL load shed event on an Entergy Operating Company's system since joining MISO. The other occurred on April 24, 2014. Notwithstanding the fact that these are extremely rare events, and even with the significant challenges discussed below that ESL's Transmission Control Center (TCC) and other ELL, ENO, and ESL employees faced, the TCC and other employees acted reasonably and appropriately to ensure the reliability of the BES. This includes the TCC's attempt to alleviate the IROL conditions within 30 minutes. In fact, given our understanding of current rules and standards (which as discussed below the North American Electric Reliability Corporation (NERC) and the six Regional Entities have indicated would benefit from additional guidance), if faced today with the same circumstances as they faced when ESL received MISO's directive to shed load on May 25, ESL, ELL, and ENO would execute the same steps with the same urgency. Nonetheless, there are a number of learning opportunities that should help improve future performance even further.

Unlike the MISO South wide load shed event during Winter Storm Uri in February 2021, the May 25 load shed event was a localized event on the transmission system. The May 25 "Temporary IROL" (which is described further below) resulted from several factors, including planned generator outages across multiple utilities, unplanned generator outages across multiple utilities, and damage to structures of the Nelson-Richard 500kV transmission line that arose from a March 2025 extreme weather event. Forecast errors did not contribute to the May 25 load shed event, and temperatures, although hot for late May, did not contribute significantly. Indeed, the temperatures that day were reasonably consistent with the temperatures that had been forecast in the days leading up to May 25. Finally, there were no trips of Entergy Operating Company generating assets or transmission assets on May 25 that affected the load shed event. As discussed further below, ELL's Washington Parish Energy Center Unit 2 sustained an unplanned outage in the early afternoon of May 25, and returned to service and reached full output about fifteen minutes after the load shed event began – but its outage did not contribute to the need to shed load.

As the Reliability Coordinator, MISO determines whether IROL or emergency conditions exist and directs the actions to take to eliminate those conditions. On May 22, MISO and ESL agreed on a reconfiguration proposed by ESL to address congestion that was expected to arise on the transmission system in southeast Louisiana. Leading up to the time MISO issued the Operating Instruction to shed load on May 25, ESL understood that the reconfiguration was an available option to address the congestion being observed in the area that day. However, shortly before MISO issued the load shed directive, MISO determined that the reconfiguration would not work to eliminate the IROL conditions that arose in MISO's real-time models. Due to the more limited scope of its models, as discussed below, ESL's models continued to show that the reconfiguration would work.

At the direction of MISO, ENO shed 209 MW of load and ELL shed 249 MW. ESL executed the load shed for ELL and ENO customers. Cleco Power LLC (Cleco) also shed load of its customers.

Several factors contributed to the inability to shed load on a granular feeder level basis utilizing ELL's and ENO's respective load shed procedures and tools as designed following Winter Storm



Uri. These factors also contributed to ESL's, ENO's, and ELL's inability to prepare internal and external stakeholders—including customers, regulators, and elected officials—for the load shed. First, in part due to the procedures used by MISO to study potential IROLs in real time, ESL had very limited time to comply with MISO's Operating Instruction to shed load. Second, the Operating Instruction MISO provided was vague. Historically, Operating Instructions include specific grid assets to include in a load shed, but MISO did not include that information in its May 25 load shed instruction. Third, as NERC and the six Regional Entities (including the SERC Reliability Corporation (SERC)) have observed in a report, the process, timeline, and other workflow requirements for an IROL are an area on which clearer guidance is needed. Fourth, MISO did not issue conservative operations or utilize the Energy Emergency Alert process prior to the directive to shed load on May 25.

The following are the areas where opportunities exist for improvement, as determined in the course of this post-event review.

- **Internal IROL Process and Training and Execution of Load Sheds** – opportunities to strengthen ENO's, ELL's, and ESL's load shed procedures to address IROL scenarios, internal notifications, and critical customer applications. Update and improve internal communications and processes for IROL load shed events.
- **Public Communications** – opportunities to improve timely notification to external stakeholders and opportunities to improve View Outage, Mobile App, and myEntergy.com. While maintaining the reliability of the BES always must be the first priority when IROL conditions arise, and acknowledging that advance notice to external stakeholders and to the public of load shed events may not always be feasible, such communications are important when load shed occurs or may occur.
- **MISO Process Integration** – opportunities to enhance the coordination with MISO for load sheds.

This Report is intended to address the conditions ELL, ENO, and ESL faced before and on May 25, how those conditions affected their performance, and how they responded to the conditions they faced. Each of the recommendations in this Report reflect areas where ELL, ENO, and ESL may be able to improve; they are not intended to address any improvements MISO may choose to undertake. ELL, ENO, and ESL will coordinate with MISO on the proposed recommendations.

The List of Recommendations Section of this Report includes a complete list of all recommendations. The Performance Analysis Section explains the analysis performed, and the reasons for those recommendations.

## Timeline

The following sequence of events occurred related to the May 25 load shed. All dates are in 2025, and all times are Eastern Standard Time (which aligns with the Central Daylight Time that was in effect in south Louisiana at the time of the event).



- **March 24** - The Nelson – Richard 500kV line incurred damage to structures due to severe weather, and went into forced outage on March 24, 2025. The line was fully repaired and returned to service on May 27, 2025.
- **May 21** – River Bend nuclear plant shut down for an unplanned outage due to a leak in the reactor's cooling system.
- **May 22** – The TCC sent an e-mail to MISO addressing potential constraints in the Amite South area, along with reconfiguration options to alleviate those constraints. Based on studies performed by the Transmission Operations team, it suggested a mitigation plan to MISO that would reconfigure the system to redirect power flow through the region. MISO agreed with the proposed reconfiguration option.
- **May 25 3:03 am** – ESL discussed the proposed reconfiguration option with MISO, and MISO confirmed that the reconfiguration option was valid.
- **May 25 12:56 pm** – MISO stated on a call with the TCC that the reconfiguration “relieves the constraint entirely. At that point in time, we don’t even have to shed load.”
- **May 25 3:59 pm** – via phone call, MISO informed ESL Transmission Operators that MISO was declaring a Transmission System Emergency. MISO did not request any action at that time and did not indicate that the previously discussed reconfiguration proposal was not effective.
- **May 25 4:04 pm** – MISO requested ESL operational personnel to study and review the reconfiguration solution again to compare results in preparation for potential implementation.
- **May 25 4:20 pm** – By a phone call from MISO to the Transmission Operators at the TCC in Jackson, Mississippi, MISO issued a directive to ELL and ENO to “shed 500 MWs of load in the Slidell and New Orleans areas until further notice.” MISO did not specify that the load shed was to respond to IROL-like conditions or to emergency conditions following an IROL study. The TCC’s real-time models did not show the necessity for load shed with the reconfiguration option implemented.
- **May 25 4:25 pm** – The TCC called MISO and inquired about implementing the reconfiguration. For the first time, MISO stated that the reconfiguration plan would not work. It is now ESL’s understanding that MISO’s real-time models showed that the reconfiguration plan would not work due to concerns with voltage levels.
- **May 25 4:33 pm** – ESL began to shed load on behalf of ELL and ENO. Consistent with standard practices, the Distribution Operations Center (DOC) initially began the load shed process. The TCC relayed MISO’s instruction verbatim to the DOC. Due to the lack of specificity in MISO’s load shed instruction, ESL was not able to identify the specific load shed protocols to activate. The DOC stated they could not shed load in the Slidell area as it is under the control of Cleco. Accordingly, the ESL Transmission Operations team identified ELL and ENO load in the New Orleans area as the load to be shed in compliance with MISO’s locational directive. The TCC instructed the DOC to continue with the Operating Instruction in the New Orleans area. The DOC stated that they did not have 500 MW in the load shed tool, but they would start shedding load.
- **May 25 4:39 pm** – 75 MW of load had been shed from the distribution system. Because the load shed at the distribution level was not resulting in enough load shed fast enough, the TCC instructed the DOC to discontinue shedding load at the distribution level. The TCC began opening circuit breakers to shed load at the transmission level.



- **May 25 4:53 pm** – MISO notified ESL that the line contingency fell below 125% post-contingent overload. Although MISO did not declare a Temporary IROL to ELL, ENO, or ESL on May 25, MISO since has specified that the May 25 load shed was a Temporary IROL event. It is Entergy's understanding that 4:53 pm would be the end of the classification as a Temporary IROL. Entergy does not know the time that the Temporary IROL started.
- **May 25 5:50 pm** – MISO began allowing the restoration of ELL and ENO load. MISO restoration instructions continued until 7:37 pm.
- **May 25 6:03 pm** – The TCC began restoring load on behalf of ELL and ENO. ESL, ELL, ENO, and Cleco worked cooperatively with MISO to open and close breakers at the transmission level to restore load.
- **May 25 6:18 pm** – The reconfiguration solution described above was implemented to assist with the restoration of load.
- **May 25 10:41 pm** – All ELL and ENO load was restored.
- **May 26 10:45 am** – MISO declared Conservative Operations for the MISO South region. The reconfiguration solution remained in place and helped ensure that load shed was not required on May 26.

## Performance Analysis

### Planned and Unplanned Outages

#### Planned Generator Outages

ELL and ENO generally schedule generation outages to take place between late January and late May in the spring and between early September and early December in the fall. These timing windows reflect periods when loads tend to be lower and weather conditions tend to be more moderate.

However, MISO recently implemented a seasonal capacity construct that has imposed new rules and considerations that Load Serving Entities (LSEs), including ELL and ENO, must manage in determining the timing of generation outages. For example, a resource that has cleared the MISO Planning Resource Auction and has a planned outage that exceeds 31 days in a single season will require replacement capacity for each day beyond 31 days or will be subject to a non-compliance penalty for each planned outage day beyond 31 days in a season. Considering the material cost effect on their respective customers of procuring replacement capacity or incurring a non-compliance penalty, ELL and ENO (and various other LSEs) have responded to this rule change by seeking to schedule planned generation outages such that they span two seasons. The need to bridge MISO seasons to mitigate cost effects on their customers has caused ELL and ENO to begin and end generation outages outside of the above-described windows more frequently.

The following ELL generation resources were on planned outages on May 25, 2025: Waterford 3, Ninemile 4, Perryville 1, and Perryville 2. In the case of Waterford 3, it was offline for a planned nuclear refueling and maintenance outage. The timing of the planned nuclear outage was to



ensure that this important unit is on the grid during the summer months, when there is extreme heat and loads are at peak levels. Nuclear units must be shut down periodically to safely remove and replace spent fuel. For Waterford 3, such refueling outages are required every 18 months. The other three units also were offline on scheduled maintenance outages to be ready for the summer season. The availability of Waterford 3 and Ninemile 4 could have helped prevent or reduce the scale of the load shed event.

All of ELL's planned outages were required to be submitted to and reviewed by MISO. MISO coordinates and assesses the effect of all generator outage schedules in its Reliability Coordinator area, and coordinates with the Generator Owners or Generator Operators to recommend a schedule that maintains system security and minimizes adverse effects on available transmission capacity levels. If a conflict is found between planned generation schedules, MISO will request re-scheduling if study results indicate a reasonable expectation of, among other things, (a) an Emergency, (b) an inability to maintain the transmission system within system operating limits using normal (non-emergency) operating procedures or to restore the transmission system to normal operating conditions following a single contingency with the use of normal (non-emergency) operating procedures, or (c) the potential for credible contingencies to significantly affect transmission system reliability of metropolitan areas. If the applicable parties do not agree to reschedule a planned generator outage, MISO will direct a rescheduling. *E.g.*, MISO Outage Operations Business Practice Manual, BPM-008-r23, Section 4.3 (Sept. 1, 2024). Here, MISO did not ask ELL to delay or otherwise reschedule the generation outages ahead of the load shed event.

Several non-Entergy generators in southeast and south-central Louisiana also were in planned outages on May 25.

### **Unplanned Generator Outages**

ELL's River Bend nuclear plant was subject to an unplanned outage on May 21, the result of a leak in the reactor's cooling system. The leak was repaired and River Bend returned to service on May 26.

ELL's Little Gypsy 3 generation unit was on an unplanned outage on May 25. The outage began on April 1 and was due to turbine vibration issues.

Washington Parish Energy Center Unit 2 sustained an unplanned outage in the early afternoon of May 25. It returned to service and reached full output approximately fifteen minutes after the load shed event began. Due to this generation unit's location relative to the transmission constraint, its outage did not contribute to the need to shed load.

Several non-Entergy generators in southeast and south-central Louisiana also were in unplanned outages on May 25.



## **Transmission Outages**

The Nelson – Richard 500kV transmission line was on forced outage on May 25. This forced outage was a continuing result of damage to structures from a severe weather event in March 2025. The forced outage adversely affected the ability to import power into the Amite South load pocket and the greater southeast Louisiana area. The line was fully repaired and returned to service on May 27, 2025.

It is ESL's understanding that no other planned or unplanned transmission outages contributed to the load shed event.

## **IROLs**

An IROL is defined in the NERC Glossary of Terms as a "System Operating Limit [(‘SOL’)] that, if violated, could lead to instability, uncontrolled separation, or Cascading outages that adversely impact the reliability of the Bulk Electric System." SOLs are defined as "[a]ll Facility Ratings, System Voltage Limits, and stability limits, applicable to specified System configurations, used in Bulk Electric System operations for monitoring and assessing pre- and post Contingency operating states."

IROLs are used in the operations horizon as operating limits in combination with outage coordination and other operating plans to ensure bulk power system reliability. Each IROL has a mitigation time (referred to as an "IROL T<sub>v</sub>," or time to violation), which is the maximum time an IROL can be violated before risk to the interconnection or other Reliability Coordinator areas becomes greater than acceptable. This maximum time limit is usually 30 minutes, but the Reliability Coordinator can reduce that time if it determines circumstances warrant such a reduction.

As the Reliability Coordinator for the Entergy Operating Companies, MISO establishes any IROLs that apply to the Operating Companies' systems. The Reliability Coordinator has the highest level of authority for reliable operation of the BES. Per NERC standards, Operating Instructions given by the Reliability Coordinator must be followed for the real-time operation of the BES.

Reliability Coordinators generally establish IROLs in advance of real-time operations. *E.g.*, FAC-014, Requirement R1. NERC Reliability Standards require Reliability Coordinators to determine these IROLs based on established methodologies. The standards also require Reliability Coordinators to communicate the IROLs to affected parties, including affected Transmission Operators (TOP) such as ESL, ELL, and ENO, so those parties can prepare to address IROL conditions. For example, under FAC-014-3, Requirement R5.3, a Reliability Coordinator must provide each affected TOP within its Reliability Coordinator area the value of each IROL established by the Reliability Coordinator in an agreed upon time frame necessary for the TOP to include the IROL in its operations planning, real-time monitoring, and real-time assessments. Reliability Coordinators also must analyze planned operations and develop next-day operating plans to address potential SOL and IROL exceedances, and to inform affected entities, such as the TOP, of their role in such plans. *E.g.*, IRO-008-3, Requirements R2-R3.



The triggers and methodologies for IROLs vary greatly among Reliability Coordinators, as documented in the July 2024 ERO Enterprise Joint IROL Activity Report prepared by NERC and the six Regional Entities (NERC IROL Report). MISO, like other Reliability Coordinators, has performed the IROL analyses and determined the IROLs in its Reliability Coordinator area. MISO's IROLs are at flowgates identified in the protected MISO Procedure SO-RA-NOP-01. For such pre-defined IROL's, the applicable TOP can pre-develop a mitigation plan it can use to resolve the IROL conditions within the time required.

There are no pre-defined IROLs on the Entergy Operating Companies' transmission systems. In their normal configuration, the Operating Companies' systems do not require them.

Unlike other Reliability Coordinators, pursuant to MISO procedure SO-P-EOP-00, MISO has a practice of designating "Temporary IROLs" in real-time when a real-time contingency analysis indicates a post contingent loading in excess of 125% of emergency thermal ratings. "Temporary IROL" is not a NERC-defined term. It instead is a MISO-specific practice. *E.g.*, NERC IROL Report at 3 ("None of the Reliability Coordinators establish IROLs in real time, except for one Reliability Coordinator [*i.e.*, MISO] that establishes what it calls a 'temporary IROL.'"). Under this practice, when MISO's models show an exceedance of 125% of an emergency rating, MISO attempts to complete a study within 15 minutes to assess whether a contingency will result in instability, uncontrolled separation, or cascading outages. MISO calls a Temporary IROL if the study results in cascading for the next N-1 contingency resulting in the loss of more than 1,000 MW of load. If MISO cannot complete the study within 15 minutes, it declares an emergency and the incident is treated like an IROL exceedance. If the study indicates no risk of instability, uncontrolled separation, or cascading outages, then MISO treats the condition as an SOL exceedance.

For a Temporary IROL, the TOP does not have the opportunity to develop a pre-defined plan to address the IROL, *e.g.*, it is not able to include the IROL in its operations planning, real-time monitoring, or real-time assessments. The same is true for an emergency that is declared when MISO cannot complete the IROL study within 15 minutes.

The NERC IROL Report states that "more guidance is needed around IROL-like conditions" such as Temporary IROLs. *Id.* at 26; *see also id.* at 3 ("recommendations focus on the need for more guidance around IROL-like conditions"). Among other things, the report recommends that the applicable Electric Reliability Organization consider "addressing operational expectations during IROL-like conditions either through outreach and guidance documents or through modifications to the Reliability Standards." *Id.* at 26. The NERC IROL Report also observes that there is a lack of clarity and consistency among Reliability Coordinators about what an IROL is, when it needs to be established, what it means to exceed one and, critically, how TOPs should respond. *Id.* at 35 (noting that SOL requirements provide "consistent and clear meaning for Transmission Operators," but that "[t]he same cannot be said about the IROL 'workflow' requirements.").

Despite the lack of clarity in responding to such conditions, when planned generation or transmission outages create potential Temporary IROL conditions, ESL's Operations Readiness



team follows a procedure to verify the IROL, develop a mitigation plan for the IROL, and have the planned outage risk approved.

### **Analysis**

On May 25, MISO declared a Transmission System Emergency that, as ELL, ENO, and ESL learned later, was deemed to be a Temporary IROL. As noted above, an IROL has a mitigation time (IROL Tv), which usually is 30 minutes. Here, the total mitigation time exceeded 30 minutes.

Two NERC Reliability Standards are of particular relevance related to the failure to clear the Temporary IROL condition within 30 minutes: IRO-009 and TOP-001. IRO-009, Requirement R3, states that “[e]ach Reliability Coordinator shall act or direct others to act so that the magnitude and duration of an IROL exceedance is mitigated within the IROL Tv, as identified in the Reliability Coordinator’s Real-time monitoring or Real-time Assessment.” TOP-001, Requirement R12, states that “[e]ach Transmission Operator shall not operate outside any identified Interconnection Reliability Operating Limit (IROL) for a continuous duration exceeding its associated IROL Tv.”

IRO-009 applies to Reliability Coordinators, i.e., to MISO. It does not apply to ELL, ENO, or ESL, which are not Reliability Coordinators. On the other hand, ELL, ENO, and ESL are TOPs, and thus TOP-001 applies to them.

Entergy does not believe that a temporary IROL is an “identified IROL” under TOP-001, to which an IROL Tv would apply for TOP compliance purposes. It would be impractical from a compliance standpoint to expect a TOP to meet a 30-minute compliance obligation under the MISO-specific framework when MISO declares IROL conditions in real-time, i.e., when it declares a Temporary IROL. As discussed above, and as Entergy understands in fact occurred here, MISO can use 15 minutes performing an IROL study after its models show an exceedance of 125% of an emergency rating. This leaves extremely limited time to implement any load shed that MISO may direct to address the Temporary IROL. On top of that, for a Temporary IROL the TOP is not able to include the IROL in its operations planning, real-time monitoring, or real-time assessments. In other words, unlike for an IROL, for a Temporary IROL the TOP will not have a pre-defined plan it can implement.

Applying a Tv to ELL, ENO, or ESL is particularly unreasonable when, as here, (a) MISO did not clearly indicate that it was implementing the Temporary IROL process, giving ESL no starting point for when any Tv clock started and (b) MISO did not specify grid assets to include in the load shed. MISO instead directed ELL and ENO to “shed 500 MWs of load in the Slidell and New Orleans areas until further notice.” As a result, before beginning to shed load, the TCC needed to determine the load to shed and how best to do so. The TCC’s criteria for doing so are discussed below.

There thus is no basis to conclude that ESL, ELL, or ENO violated NERC Standards IRO-009 or TOP-001. Nor has Entergy identified any other violations of NERC standards.

That being said, as the NERC IROL Report states, “more guidance is needed around” Temporary IROLs. NERC IROL Report at 26. Among other things, the report recommends that the applicable



Electric Reliability Organization consider “addressing operational expectations during IROL-like conditions either through outreach and guidance documents or through modifications to the Reliability Standards.” *Id.* In short, the application of NERC’s standards to Temporary IROLs is not clear, which can lead to considerable confusion. In light of these facts,

- To provide greater clarity around Temporary IROLs, ELL, ENO, and ESL will pursue the guidance suggested in the NERC IROL Report.
- Until such time as more clarity is provided around Temporary IROLs and NERC standards, if it again is faced with a Temporary IROL, ESL will use reasonable efforts to address the IROL conditions within 30 minutes of the time the condition arose, if known, or such other time specified by MISO.

It is important to note that, even in the absence of a Tv for a Temporary IROL, there are time limitations for a TOP to take action. Under NERC standard TOP-001, Requirement R1, “[e]ach Transmission Operator shall act to maintain the reliability of its Transmission Operator Area via its own actions or by issuing Operating Instructions.” So, NERC standards require a TOP to implement load sheds in a timeframe required to maintain reliability. IRO-001-4, Requirement R2, also requires each TOP (and the applicable Distribution Provider) to comply with the Reliability Coordinator’s Operating Instructions unless such compliance cannot be physically implemented or unless such actions would violate safety, equipment, regulatory, or statutory requirements. Similarly, TOP-001, Requirement R5 requires a TOP to “comply with each Operating Instruction issued by its Balancing Authority, unless such action cannot be physically implemented or it would violate safety, equipment, regulatory, or statutory requirements.” MISO is the Balancing Authority for ELL, ENO, and ESL. Thus, if MISO specifies a time requirement for a TOP to shed load, that requirement must be met, unless the action cannot be physically implemented or it would violate safety, equipment, regulatory, or statutory requirements. Finally, as discussed below, ESL’s own procedure states that it must take action “as soon as possible” and “immediately” to address IROL conditions and directions to shed load. ELL, ENO, and ESL will continue to satisfy these requirements.

When MISO declares a Temporary IROL, it would be beneficial for MISO to (a) include a clear statement that it has declared a Temporary IROL, or that the IROL study described above could not be completed in 15 minutes, (b) specify the time for implementation of any instruction it provides, and (c) as discussed below, if load shed is directed to resolve the Temporary IROL, identify a list of specific substations that the TOP can choose from to shed load, and load shift factors for those substations or, at a minimum, clearly defined electrical boundaries in which the load shed must occur. Because ESL’s real-time models do not include the scope that MISO’s real-time models include, MISO is in the best position to identify the substations and load shift factors, or defined electrical boundaries, based on the topology in MISO’s system models.

With that information, the DOC can then use its expertise and knowledge of the Entergy Operating Companies’ systems to use the rotation load shed tool or manual selection to identify the specific breakers that can best be used to implement the load shed directive. Moreover, the information described above would provide clarity to any entity that is required to implement a load shed instruction, and would allow ELL, ENO, and ESL to weigh all considerations, such as the severity of the system/regional constraints, availability of curtailable customers, ability to use existing load



shed procedures, and ability to provide advance notices (discussed further below). To help drive improvement, ELL, ENO, and ESL will discuss this recommendation with MISO.

## **Execution of Load Shed**

### **Load Shed Implementation**

Prior to Uri, ELL, ENO, and ESL developed load shed plans for known load pockets and planned outages that create load at risk. After Uri, they refined the plans for load pockets to create better separation between the load pockets. Teams also worked to (a) realign the DOC load shed grouping and operational menus to match load pockets and Entergy Operating Companies' areas, (b) update the Transmission Operations Planning map and load pockets, and (c) develop a generation management system load shed tool for use by the real time analysis (RTA) operators.

Each year, ELL, ENO, and ESL classify each distribution feeder into predefined criteria that focus on the criticality of customers to overall public safety. These classifications are used to determine the order customer load will be shed, with critical customers shed last. Load shed (as to any firm load customer of any level of criticality) is always the last mitigation option to address a system issue. If load shed is required, standard practice is for the DOC to implement the load shed, so that the criticality classifications can be used by the rotation load shed tool or by manual selection by the operator when the tool cannot be utilized.

ELL and ENO have customers with interruptible rate contracts that allow for curtailment with specified notice requirements. When there is enough notice to act, the TOP notifies the Entergy Business Center (EBC) of the need to shed load in an area and the EBC directs the interruptible customers to reduce their load. After that, the DOC uses the rotation load shed tool within its Supervisory Control and Data Acquisitions systems to shed load based on criticality and to rotate the customers affected, or sheds load by manual selection.

ELL, ENO, and ESL practice the policies and procedures relating to load shed during end-to-end load shed drills conducted twice each year. The spring drill focuses on local load shed events that could occur as a result of storm damage, and the fall drill focuses on scenarios related to winter weather. The end-to-end load shed drills are designed to exercise all aspects of a response to a situation requiring load shed, including Control Center Operator actions, coordination with MISO, and communications with customers and other stakeholders.

### **ESL's Operating Procedure for Execution of Load Shed**

Section 4 of ESL's Transmission Control Center Operating Procedure RCC-TCC-017 Rev. 00 provides as follows:

- "Following a Contingency or other event that results in an IROL violation, the TOP shall take action to return the transmission system to within IROL limits as soon as possible, and within associated IROL Tv (time to violation)."



- “The TOP shall immediately take all appropriate actions up to and including shedding firm load, or directing the shedding of firm load, in order to mitigate a violation defined in the ‘SOL and IROL Violations’ section of this procedure.”
- “The TOP shall notify the [Reliability Coordinator] of the situation and actions taken to address an IROL or SOL violation.”

### **Analysis**

Before it issued the load shed directive, MISO declared a Transmission System Emergency. Also before it issued the directive, MISO stated that it was going to perform an IROL study. Thus, even though MISO did not notify the TCC of an IROL at the time MISO issued the load shed directive, based on the information available to them, the ESL Transmission Operations team reasonably understood that they were facing IROL conditions (a conclusion that later was confirmed by MISO to be accurate). The Operations team therefore implemented Operating Procedure RCC-TCC-017. The team understood that the Operating Procedure required them to take action to attempt to resolve the IROL condition within 30 minutes of the time they received notice to shed load.

As discussed above, Entergy does not believe that an IROL Tv applied to ELL, ENO, or ESL under the facts of May 25. However, as also discussed above, there is considerable confusion around the requirements of Temporary IROLs and the application of NERC standards to them. Given this lack of clarity, Entergy believes that the Operations team correctly attempted to resolve the IROL condition within 30 minutes.

Entergy also believes that ESL, ELL, and ENO complied with the requirements of the Transmission Control Center Operating Procedure. With regard to the first requirement quoted above – “[f]ollowing a Contingency or other event that results in an IROL violation, the TOP shall take action to return the transmission system to within IROL limits as soon as possible, and within associated IROL Tv (time to violation)” – it took 33 minutes from the time the TCC received MISO’s notice to shed load to the time the IROL condition was resolved. However, a temporary IROL is not an “identified IROL” to which an IROL Tv applies for TOP compliance purposes.

Moreover, due to the limited notice and the vague Operating Instruction provided by MISO, ESL was not able to utilize its standard load shed procedures and tools. In particular, the lack of specificity in MISO’s load shed instruction, directing ELL and ENO to shed load “in the Slidell and New Orleans areas,” rather than identifying specific grid assets to include in the load shed, meant that ESL was not able to identify the specific load shed protocols to activate. Once it became clear that load needed to be shed at the transmission level, ESL Transmission Operators needed to identify locations within the greater New Orleans area that they knew would provide relief efficiently. The locations they selected were based on three criteria: (a) obtaining the maximum relief on the constrained transmission line, (b) selecting transmission breakers to open based upon the MW that could be shed on each line in order to accomplish the required result, and (c) avoiding load shed in areas that would make the problem worse. The TCC team concentrated on identifying transmission loops that could be opened without further degrading the reliability of the BES, affecting key tie-lines, or limiting generation output. The team used engineering expertise and judgment to curtail the least amount of load possible while complying with MISO’s directive. Making those determinations and shedding load within 30 minutes would be extremely difficult, but they exceeded that time by only 3 minutes from their notice. The facts here differ sharply from a pre-



defined IROL, where a TOP can pre-develop a mitigation plan it can use to resolve the IROL conditions within the time required, i.e., within the applicable Tv.

With regard to the second requirement – “[t]he TOP shall immediately take all appropriate actions up to and including shedding firm load, or directing the shedding of firm load, in order to mitigate a violation defined in the ‘SOL and IROL Violations’ section of this procedure” – ESL took action to return the transmission system to within IROL limits as soon as possible, and the TCC and DOC immediately took all appropriate actions. Specifically, at 4:20 pm, MISO issued the directive to ELL and ENO to “shed 500 MWs of load in the Slidell and New Orleans areas until further notice.” After calling MISO to discuss the reconfiguration option, ESL began to shed load at 4:33 pm. So that the criticality classifications can be used, it is standard operating procedure to start load sheds at the distribution level. The DOC thus started the load shed. At 4:39 pm the TCC learned that the DOC had shed 75 MW of load. Because the load shed at the distribution level was not resulting in enough load shed fast enough, the TCC instructed the DOC to stop shedding load. The TCC Shift Supervisor and RTA Operator took aggressive action to develop and execute the larger load-shed effort within the parameters discussed in the immediately preceding paragraph. At 4:53 pm, MISO notified ESL that the line contingency fell below 125% post-contingent overload, ending the classification as a Temporary IROL.

With regard to Operating Procedure RCC-TCC-017’s requirement that the TOP notify the Reliability Coordinator of the situation and actions taken to address an IROL or SOL violation, the Transmission Operations team notified MISO on May 22 of potential constraints in southeast Louisiana. Based on studies the Transmission Operations team performed, it suggested a mitigation plan to MISO that would reconfigure the system to redirect power flow through the region. Prior to and up to the load shed event, the Transmission Operations team’s studies indicated that this reconfiguration would alleviate the potential post-contingent overloads observed on May 25. It was not until 4:25 pm on May 25 that ESL learned that MISO’s models showed the reconfiguration plan would not work. Throughout the day on May 25, ESL coordinated with the Reliability Coordinator (MISO), including through the load shed and restoration of load.

While there were no violations of NERC standards by ESL, ELL, or ENO, and they complied with applicable internal procedures, there are opportunities to improve existing load shed procedures to provide additional clarity for IROL events. A number of factors adversely affected ESL’s performance during the load shed event.

- Performance was affected by vague Operating Instructions from MISO. MISO historically has provided specific Operating Instructions for load sheds. Here, however, MISO did not do so. MISO instead issued a directive to ELL and ENO to “shed 500 MWs of load in the Slidell and New Orleans areas until further notice.”
- NERC procedures require the TCC to forward MISO’s load shed order to the DOC verbatim. The DOC is required to act upon that order as directed by MISO. Uncertainty around ESL’s ability to question a vague Operating Instruction from the Reliability Coordinator led to vague Operating Instructions being further communicated to the DOC, without further guidance.
- A lack of a formal internal communication plan specific to IROL and dynamic events hampered performance.
- The fact that internal procedures assume DOC execution of load shed affected performance.



To address these shortcomings, the following actions will be undertaken to drive improvements:

- Update existing procedures to address how to execute load sheds when non-specific Operating Instructions are given, and provide additional training for those scenarios.
- Obtain clarity from SERC regarding the ability to question a vague Operating Instruction and to advise the DOC on how to implement an Operating Instruction. Entergy believes that, while NERC Standard IRO-001-4, Requirement R2 requires TOPs to comply with Reliability Coordinator Operating Instructions unless compliance with those instructions “cannot be physically implemented or unless such actions would violate safety, equipment, regulatory, or statutory requirements,” nothing in the standard prevents ESL from asking for more detail in real-time or questioning the directive. The NERC Project 2014-03 Standard Drafting Team explained that “there is nothing in the requirements that says that the responsible entity cannot question the instruction after verifying through three-part communications.” Moreover, the standards do not prevent the TOP from advising distribution entities in their territory on how to implement an Operating Instruction. Nonetheless, additional guidance from SERC regarding the extent to which ESL can question a vague Operating Instruction or the TCC can advise the DOC on implementing an Operating Instruction will ensure continued compliance with NERC standards in the future.
- Align the TCC load shed internal communication procedure to the process utilized by the DOC.
- Create proactive internal communication triggers for IROL and dynamic events.
- Work with MISO to help ensure that, whenever possible, load shed directives identify a list of specific substations from which the TOP can choose to shed load, and load shift factors for those substations, or, at a minimum, clearly defined electrical boundaries in which the load shed must occur.

Moreover, ELL, ENO, and ESL will develop protocols to call on interruptible customers when tight conditions are forecast. Some interruptible customers have longer lead time notices, and those will be factored into the protocol.

## **Public Communications**

ELL and ENO have plans entitled “Power Shortfall Communications Plan” (Updated February 13, 2025). These plans define external customer communication procedures for a power shortfall event. They address two specific scenarios: (a) a MISO directed system-wide shortfall (or energy emergency), which addresses a circumstance where there is a regionwide shortage of generating capacity, and (b) a local load at risk event, where transmission limitations or other circumstances limit the ability to serve load in a specific area within the region.

With respect to external communications, ELL’s and ENO’s primary objective in any load shed event is to provide timely, accurate, and consistent information to customers and key stakeholders, along with informing public expectations about electric service restoration. However, although they issued extensive public notifications after the safety of the electric grid was secured, due to the specific nature of the May 25 event, ELL and ENO were not able to use their existing communication plans before the load shed. Prior to the event, ESL understood that the



reconfiguration plan it had discussed with MISO would be sufficient to ensure that load would not need to be shed. Moreover, MISO provided extremely limited advance notice of the need to shed load. MISO did not issue a conservative operations warning prior to the load shed and did not use the EEA process. That process is a system of alerts used by grid operators, including MISO, to signal that the electric grid is facing a serious threat to its reliability. EEAs are issued to prompt steps to maintain grid reliability when available supply and operating reserves are in danger of not meeting demand.

### **Analysis**

Maintaining the reliability of the BES always must be the first priority when IROL conditions arise. Failure to prioritize operational demands or delaying execution of operational steps to allow time to initiate external communications could lead to cascading outages and widespread blackouts. However, public communications are important when load sheds occur or may occur.

Current response plan procedures do not adequately and clearly address the unique facts presented on May 25. As a result of these inadequacies, there were delays in notifying and mobilizing key teams responsible for executing customer outreach and response. The shortcomings are evidenced by the fact that ELL and ENO received communications and concerns from external stakeholders before critical internal teams were aware of the events.

Issues with public communications arose for the following reasons:

- The TCC had to focus fully on executing MISO's load shed order, rather than performing internal notifications. The TCC needed to take immediate and rapid action to ensure the reliability of the BES.
- The TCC currently does not trigger external stakeholder communications. Instead, stakeholder communications depend on a MISO trigger.
- Key customer systems, including View Outage, Mobile App, and myEntergy.com, experienced degradation due to customer traffic associated with the outages immediately following the start of the load shed event. Unlike past scenarios, which involved scenarios that developed more slowly over time, the facts here involved sudden load sheds and sudden attempts by large numbers of customers to seek information.

To improve communications, ELL and ENO will modify their communications plans to address circumstances in which they face limited notice (or potentially no notice) of a load shed event. The following actions have been identified to drive improvements:

- Eliminate MISO notification dependence by establishing an alternate ESL/Entergy Operating Company-specific internal communication trigger from the TCC capable of serving as a predictor for dynamic events.
- Evaluate and establish an internal notification process to critical internal teams.
- Establish an expectation that Corporate Communications, External Affairs, and the Integrated Customer Organization activate upon receipt of notifications and implement their respective emergency response plans.
- Modify existing plans, procedures, and messaging templates to include the IROL scenario related to customer communications, external stakeholder communications, and customer operations.



- Provide training on response procedures, expectations during an event, and updated process flow.
- Conduct drills on procedures.
- Ensure process modifications have full alignment with any improvements or modifications MISO implements to its notification process following its after-action review of the May 25 load shed event.
- Review and enhance load shed messaging to address IROL and dynamic event scenarios.
- Improve the capability of key customer systems to handle high capacity, short time-frame scenarios.

## **System Models and Coordination**

ESL has procedures that determine when to perform an IROL study. Prior to May 25, ESL's models showed that congestion on the system was to be expected on that day, but the models did not show that the conditions for an IROL study would be met. ESL developed a reconfiguration option to address the congestion should it arise and presented that option to MISO on May 22. MISO agreed with the reconfiguration option and continued to agree with the option as late as the afternoon of May 25. The discussions of the reconfiguration plan were done through informal coordination.

Like ESL, MISO has procedures that determine when to perform an IROL study. MISO must perform such a study if a flowgate is showing an overload in excess of 125% of its emergency thermal ratings. On May 25, MISO's models began to show conditions that required the performance of an IROL study. Under MISO's process, it calls a Temporary IROL if the study results in cascading for the next N-1 contingency resulting in the loss of more than 1,000 MW of load. Because MISO's study process led to a solution that went unsolved, MISO declared a Temporary IROL.

ESL's real-time model did not show the same conditions as MISO's. That is, ESL's model did not show the need for an IROL study. This difference arose because ESL's model has equivalenced topology for neighboring utilities, while MISO's model has full topologies for all balancing authorities in its territory. MISO's models are broader than ESL's, and more detailed outside of the Entergy Operating Companies' systems, in light of MISO's role as Reliability Coordinator for all of the MISO region, including MISO South. That being said, Entergy now believes that given the level of congestion on Cleco facilities and the effects the congestion can have on ELL or ENO facilities, ESL should attempt to increase the visibility of Cleco facilities in ESL's models.

In light of these differences in ESL's and MISO's models, the following actions will be taken:

- Enhance ESL's state estimator model to include additional facilities in Cleco for monitoring capability and develop criteria for inclusion of external facilities within the model.
- Develop a process that will enhance collaboration with MISO for the utilization of reconfiguration plans for observed or expected dynamic events. When it submits a reconfiguration proposal to MISO, ESL will ask that it be tested when submitted.
- Establish formal touchpoints with MISO and Local Balancing Authorities for coordination during times of wide area congestion.
- Seek MISO participation in load shed drill processes.



- Develop a process for greater coordination with MISO to ensure that MISO has the benefit of Entergy's expertise in managing local reliability.

Finally, NERC standard PRC-023 requires that a relay not trip when loading on the relay is below 150%. It is ESL's understanding that MISO uses a 120% threshold in its IROL models. The purpose of PRC-023 is to prevent tripping during system stress, giving operators time to adjust and operate the system within intended levels. In other words, PRC-023 is intended to address circumstances such as those presented on May 25. ESL will discuss with MISO the basis for MISO's use in its IROL models of a lower threshold than the one provided in NERC standards.

## **Beneficial Practices and Accomplishments**

The post-event review identified several beneficial practices and accomplishments of note. Positive actions and behaviors include the following:

- Even in the face of significant obstacles, the TCC and other ELL, ENO, and ESL employees acted reasonably and appropriately to ensure the reliability of the BES. This includes the TCC's attempt to alleviate the IROL conditions within 30 minutes.
- The DOC was unable to use the rotation load shed tool to address critical customers, and took action to manually initiate the load shed, which did exclude identified priority customers in the first 75 MW of load that was shed.
- The TCC took aggressive action to take over the load shed from the DOC to prevent potential cascading outages and potential damages to the BES.
- ESL Transmission Operators, utilizing their operating experience, identified locations within the greater New Orleans area that they knew would provide relief efficiently. The team used engineering expertise and judgment to curtail the least amount of load possible while complying with MISO's directive.

This list reflects only a small subset of the beneficial practices and well executed steps during the May 25 load shed event.

## **List of Recommendations**

The following is a complete list of recommendations identified in this Report.

### **Internal IROL Process and Training and Implementation of Load Shed:**

- To provide greater clarity around Temporary IROLs, pursue the guidance suggested in the NERC IROL Report.
- Until such time as more clarity is provided around Temporary IROLs and NERC standards, if again faced with a Temporary IROL, use reasonable efforts to attempt to address the IROL conditions within 30 minutes of the time the condition arose or such other time specified by MISO.
- Recommend to MISO that, when it declares a Temporary IROL, MISO (a) include a clear statement that it has declared a Temporary IROL, or that the IROL study described above could not be completed in 15 minutes; (b) specify the time for implementation of any instruction it provides; and (c) if load shed is directed to resolve the Temporary IROL,



identify a list of specific substations from which the TOP can choose to shed load, and load shift factors for those substations, or, at a minimum, clearly defined electrical boundaries in which the load shed must occur.

- Develop protocols to call on interruptible customers when tight conditions are forecast. Some interruptible customers have longer lead time notices, and those will be factored into the protocol.
- Update existing procedures to address how to execute load sheds when non-specific Operating Instructions are given, and provide additional training for those scenarios.
- Obtain clarity from SERC regarding the ability to question a vague Operating Instruction and to advise the DOC on how to implement an Operating Instruction.
- Align the TCC load shed internal communication procedure to the process utilized by the DOC.
- Create proactive internal communication triggers for IROL and dynamic events.

#### **Public Communications:**

- Eliminate MISO notification dependence by establishing an alternate ESL/Entergy Operating Company-specific internal communication trigger from the TCC capable of serving as a predictor for dynamic events.
- Evaluate and establish an internal notification process to critical internal teams.
- Establish an expectation that Corporate Communications, External Affairs, and the Integrated Customer Organization activate upon receipt of notifications and implement their respective emergency response plans.
- Modify existing plans, procedures, and messaging templates to include the IROL scenario related to customer communications, external stakeholder communications, and customer operations.
- Provide training on response procedures, expectations during an event, and updated process flow.
- Conduct drills on procedures.
- Ensure process modifications have full alignment with any improvements or modifications MISO implements to its notification process following its after-action review of the May 25 load shed event.
- Review and enhance load shed messaging to address IROL and dynamic event scenarios.
- Improve the capability of key customer systems to handle high capacity, short time-frame scenarios.

#### **System Models and Coordination:**

- Enhance ESL's state estimator model to include additional facilities in Cleco for monitoring capability and develop criteria for inclusion of external facilities within the model.
- Develop a process that will enhance collaboration with MISO for the utilization of reconfiguration plans for observed or expected dynamic events.
- When submitting a reconfiguration proposal to MISO ask that it be tested when submitted.
- Establish formal touchpoints with MISO and Local Balancing Authorities for coordination during times of wide area congestion.
- Seek MISO participation in load shed drill processes.
- Develop a process for greater coordination with MISO to ensure that MISO has the benefit of our expertise in managing local reliability.

- Discuss with MISO the basis for MISO's use of a lower threshold in its IROL models than the one specified under NERC standard PRC-023.

## Glossary

| <u>TERM</u>      | <u>DEFINITION</u>                                     |
|------------------|-------------------------------------------------------|
| BES              | Bulk Electric System                                  |
| Cleco            | Cleco Corporate Holdings LLC                          |
| DOC              | Distribution Operations Center                        |
| EBC              | Entergy Business Center                               |
| EEA              | Energy Emergency Alert                                |
| ELL              | Entergy Louisiana, LLC                                |
| ENO              | Entergy New Orleans, LLC                              |
| ESL              | Entergy Services, LLC                                 |
| IROL             | Interconnection Reliability Operating Limit           |
| LSE              | Load Serving Entity                                   |
| MISO             | Midcontinent Independent System Operator, Inc.        |
| NERC             | North American Electric Reliability Corporation       |
| NERC IROL Report | ERO Enterprise Joint IROL Activity Report (July 2024) |
| RTA              | Real Time Analysis                                    |
| SERC             | SERC Reliability Corporation                          |
| SOL              | System Operating Limit                                |
| TCC              | Transmission Control Center                           |
| Tv               | Time to Violation                                     |



**LOUISIANA PUBLIC SERVICE COMMISSION**

**DOCKET NO. X-37608**

**LOUISIANA PUBLIC SERVICE COMMISSION,  
EX PARTE**

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*In re: After-Action Review of Cleco Power and Entergy Louisiana's May 25, 2025  
outages, pursuant to General Order Dated April 13, 2017 (Docket No. R-32786)*

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**STAFF EXHIBIT 2**

# MAY 25 LOAD SHED EVENT

AUGUST 2025 REPORT



[misoenergy.org](http://misoenergy.org)





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## About MISO

The Midcontinent Independent System Operator, Inc. (MISO) is an independent, not-for-profit organization responsible for operating the bulk electric power system and administering wholesale electricity markets across 15 U.S. states and the Canadian province of Manitoba. MISO ensures the reliable delivery of electricity to approximately 45 million people by managing regional transmission operations, energy and ancillary services markets, and advising on long-term resource planning. MISO manages more than 77,000 miles of transmission lines and more than 1,800 generating units. MISO operates one of the world's largest organized electricity markets, with over \$40 billion in annual gross market energy transactions. As a North American Electric Reliability Corporation (NERC)-designated Reliability Coordinator, MISO has a wide-area view of the system and the authority to prevent or respond to emergencies.



## Executive Summary

On May 25, 2025, Southeast Louisiana experienced a power system emergency that required coordinated, last-resort actions to protect the regional electric grid. The event was driven by a convergence of challenges, including the continued outage of the critical Nelson-Richard 500kV transmission line, the unavailability of more than 50% of local generation due to outages and limited transmission import capability. These challenges culminated in MISO declaring a Transmission System Emergency and directing controlled load shed in the affected area.

The May 25 Load Shed Event was a disruption to residents, businesses and customers in Southeast Louisiana. In line with MISO's commitment to transparency, this report offers a detailed account of the events leading up to the load shed, MISO's role as the Reliability Coordinator, coordination with local Transmission Operators (CLECO, Entergy New Orleans, and Entergy Louisiana), key lessons learned, and areas identified for future improvement.

### Event Overview

On May 25 at approximately 4:00 p.m. EST, MISO identified a temporary Interconnection Reliability Operating Limit (IROL) condition, a reliability condition resulting from a potentially overloaded transmission line that threatened grid stability. After exhausting all other available mitigation options, MISO issued emergency operating instructions to local Transmission Operators, directing a reduction in electricity demand by approximately 600 MW to prevent a broader system failure.

As the Reliability Coordinator, MISO is responsible for ensuring the reliable operation of the bulk electric power system across its footprint. This critical role provides MISO with the widest visibility of the electric system and the authority to ensure it remains stable. At times, MISO must take protective actions to prevent widespread and potentially cascading outages. The decision to shed load on May 25 was not made lightly and was the absolute last resort.

MISO worked closely with the local transmission operators, who are responsible for the real-time operation of the transmission system in the affected area. Like MISO, transmission operators are governed by the North American Electric Reliability Corporation (NERC). They have direct control over their local networks and execute emergency orders, such as emergency directives issued by MISO to protect the grid during disturbances.

### Continuous Improvement in an Evolving Risk Landscape

The May 25 event is a clear reminder that the risk landscape facing grid operators is shifting. Today's power systems are more complex and operate with tighter margins. As we navigate this transition, MISO remains focused on evolving its tools, procedures and infrastructure through its Reliability Imperative initiatives, with an emphasis on proactive planning, real-time situational awareness and modernized operations.

While the actions taken on May 25 successfully protected the grid, the event also revealed areas for improvement:





- **Internal Processes and Emergency Procedures:** MISO has clearly defined emergency procedures and processes; however, as the grid and risk environment evolve, MISO will leverage this event to assess its protocols to ensure they meet both the operational conditions now and in the future.
- **Notification Procedures:** MISO needs to work with our stakeholders to develop a notification protocol for Transmission System Emergencies. MISO has a mature and well-defined process for notifying stakeholders during capacity emergencies, but more work is required to create an appropriate process for Transmission System Emergencies, while still recognizing that not all grid emergencies allow for advance communications.
- **Education and Training:** The event exposed varying levels of understanding among utilities, public officials and stakeholders about the nature of transmission emergencies versus capacity shortfalls. MISO will expand its outreach and education to foster greater shared understanding and coordination, including information on load pockets, the challenges they present, and the tools and procedures available to respond to different emergencies.

MISO remains committed to learning from this experience, evaluating our internal processes for improvements or enhancements, and strengthening partnerships with stakeholders to ensure informed and coordinated responses in future grid emergencies.



## Definitions

**Balancing Authority:** Organizations that maintain the balance of the real-time production and consumption of electricity.

**Interconnection Reliability Operating Limit:** A System Operating Limit that, if violated, could lead to instability, uncontrolled separation or cascading outages that adversely impact the reliability of the Bulk Electric System. MISO's operating procedures define a temporary IROL condition when post-contingency loading on a constraint is in excess of 125% of its highest emergency operating limit and would cause cascading outages resulting in the loss of more than 1,000 MW of load.

**Load Pocket:** Load pockets are defined areas of the grid with limited import capability and a resulting heavy dependence on generation within the load pocket, requiring special planning and operation to meet demand. The currently defined and monitored load pocket areas are geographically located at the edge of the MISO South region.

**Planned Outage:** An outage that is pre-arranged, studied, coordinated and scheduled with a set of known impacts to the grid. When an outage is planned, MISO Operations teams assess the reliability impact of outage requests across different time frames (operating day, next day and beyond) and operational scenarios to identify potential issues and mitigation plans to allow coordination with owners as needed. Planned generation outages go through a sequence of reliability evaluations, including a supply adequacy review. If a reliability risk is identified in assessments, MISO coordinates with generator owners for rescheduling of planned outages. MISO cannot reschedule a planned generator outage unless there are expected or actual emergency conditions.

**Post-contingent Actions:** Actions to address electric grid reliability after a specific issue occurs, i.e., a power line going out of service.

**Reconfiguration:** The process of adjusting switches and other infrastructure within the transmission system to route power in different directions or through different lines, somewhat like a detour leveraged during road construction.

**Regional Transmission Organization:** An organization granted specific responsibilities by the Federal Energy Regulatory Commission (FERC), an independent agency of the U.S. federal government that regulates the interstate transmission of electricity, natural gas and oil. Rates, terms and conditions by which the organization oversees the regional power grid and coordinates with its member utilities are defined in a FERC-approved tariff.

**Reliability Coordinator:** Has wide-area responsibility across its footprint to ensure that electricity across the bulk power system is delivered safely and affordably from where it is generated to where it is used in real time, while also ensuring visibility beyond local areas to detect and prevent cascading failures. In this Reliability Coordinator role, regional transmission organizations like MISO coordinate real-time and next-day operations between multiple entities, including Transmission Operators and Balancing Authorities, and have the authority to direct actions,





including load shedding or dispatching of generation, to preserve system reliability. Reliability Coordinator activities are governed by NERC, a non-profit international organization designated by FERC with responsibility for ensuring the reliability, security and adequacy of the bulk power system.

**Transmission Operators:** Electrical utilities that hold local area responsibility for the real-time operation of the transmission system to ensure reliable delivery of electricity within their specific local area. Transmission Operators are also governed by NERC and have direct control over their local networks, along with the responsibility of executing emergency orders to protect the grid during disturbances. Transmission Operators work in coordination with Reliability Coordinators and neighboring Transmission Operators.

**Unplanned Outage:** Unplanned outages are reductions or shutdowns of resources due to emergencies, equipment failures, delays returning from planned outages, or other uncontrollable events, meaning that generation or transmission that was anticipated in modeling and studies is no longer available. Generation owners notify MISO of unplanned outages in real time as the outages take place. The impacts of these outages are addressed in real time and incorporated into future study scenarios to build daily operating plans for future days.



## May 25 Event Overview

On Sunday, May 25, 2025, around 4:00 p.m. EST, MISO declared a Transmission System Emergency due to a temporary Interconnection Reliability Operating Limit (IROL) identified on the Barkers Corner–Bogalusa 230 kV line. This temporary IROL was due to a combination of factors, primarily the limited transfer capability caused by the ongoing outage of the Nelson–Richard 500 kV line (due to March storms), and a lack of available generation due to both planned and unplanned outages.

After evaluating all other available options, and as a measure of last resort, MISO directed CLECO, Entergy Louisiana and Entergy New Orleans to shed approximately 600 MW of load to maintain the integrity of the bulk electric system. MISO coordinated closely with Entergy and CLECO to bring back the load, and within three and a half hours of the initial load shed, conditions had improved enough to allow members to complete the restoration of power.

Many MISO stakeholders are familiar with capacity emergencies, which are more common and typically communicated in advance through the MISO website. In contrast, the May 25 event was a Transmission System Emergency. Transmission System Emergencies develop more quickly than capacity emergencies and require MISO and its members to take urgent corrective actions within 30 minutes of identifying an IROL. The focus during this relatively brief time is to maintain system reliability and mitigate widespread voltage collapse, transmission system damage and potential cascading outages, leaving limited time for advance public notification.

### Southeast Louisiana System Overview

Located at the edge of the MISO system, several areas within the MISO South region have limited connections to the rest of the electrical grid. This creates load pockets, which present a unique set of reliability, planning and market efficiency challenges. Due to their inherently limited import capability, load pockets are heavily dependent on local generation within the load pocket to meet demand. Several load pockets exist along the Gulf Coast, including the Southeast Louisiana region impacted by the May 25 event (figure 1 highlights four of these load pockets).



Figure 1

Because of this heightened dependence on local generation and limited import capability, factors such as generation and transmission outages can have a proportionately greater impact in Southeast Louisiana compared to non-load pocket areas of MISO. In March of 2025, a key transmission line, the Nelson–Richard 500kV line, went out of service due to severe storm damage, limiting transmission capability into the Southeast Louisiana area.





## Cause Analysis Summary

The May 25 event was the result of a confluence of factors, as described below.

**Generation Outages:** Total generation outages amounted to 7,700 MW, with more than 50% of generation capacity in Southeast Louisiana unavailable at the time (figure 2<sup>1</sup>).

- Late spring is usually when planned maintenance wraps up to get equipment ready for summer. As a result, four generating units were on planned outage, totaling 2,700 MW.
- The area experienced eight unplanned outages, totaling 3,900 MW.

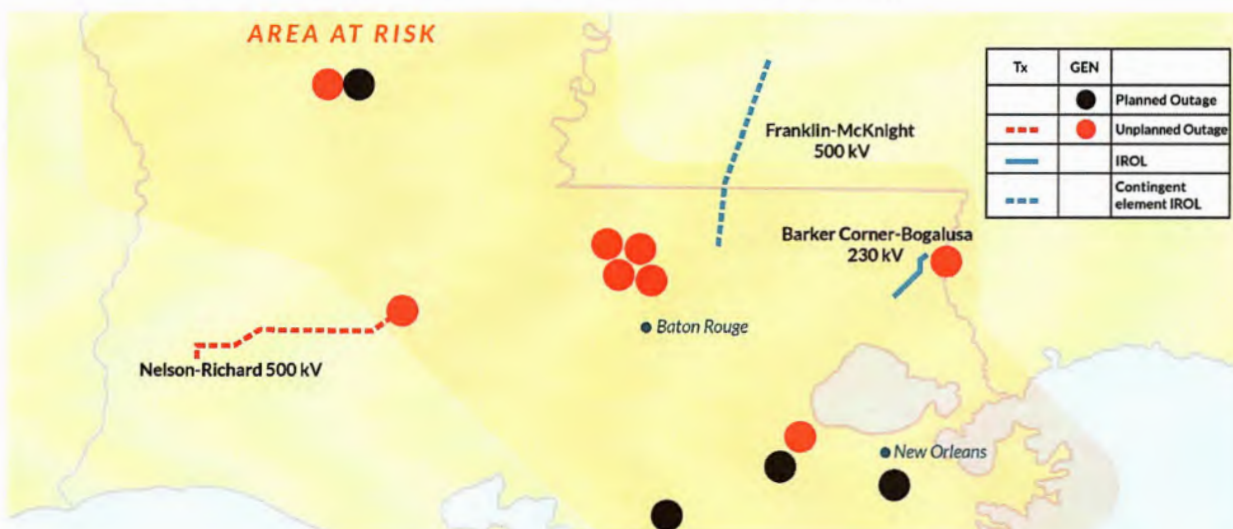


Figure 2

- An additional 1,100 MW of generation was unavailable due to capability derates for generation that was operating on May 25.
- Planned outages are taken for general maintenance, repairs and other tasks that can be identified and scheduled in advance. Unplanned outages and equipment derates are generally caused by equipment failure such as leaks or unexpected mechanical issues that require repair or maintenance. Due to confidentiality, MISO cannot list the names of the generators in each category, nor does it have the specific root causes of these outages.

**Transmission Outage:** The outage of the Nelson–Richard 500kV transmission line, due to tornado damage in March 2025, further complicated the situation. The loss of access to this line, which can typically move 1,700 MW, limited the amount of power that could be moved into the area from the west.

**Lack of Import Capability:** The area of Louisiana that was impacted by the May 25 event is considered a load pocket on the transmission system—a geographically defined area with high

<sup>1</sup> The "Area at Risk" on the map highlights the region that could have been impacted by a possible uncontrolled load loss (greater than the controlled amount of 600MW) had MISO not taken measures in directing the load shed in New Orleans, Slidell and North Shore areas.



electricity demand and limited ability to import electricity from outside the area. There were two corridors where transmission constraints created complications for operators: Richard–Bayou Cove 138 kV area and the Barkers Corner–Bogalusa 230kV area.

**Higher Temperatures:** Temperatures on May 25 were unseasonably high, reaching 90 degrees Fahrenheit, and contributed to high demand in the load pocket.

**Reconfiguration:** Pre-event planning considered transmission reconfigurations (e.g., Madisonville–Fairview and Adams Creek). However, in real time, these actions proved either insufficient or counterproductive due to voltage and overload concerns. Reconfiguration only became a viable option after load was shed, at which point it was safely implemented.

## Detailed Event Analysis

### Conditions Leading Up to May 25

In late April, MISO began monitoring the Barker's Corner–Bogalusa 230kV line for loss of the Franklin–McKnight 500kV line contingency through its market-based congestion management processes, due to the planned outages of Willow Glen–Waterford 500kV line and a large nuclear generating station.

MISO staff were concerned that if the Franklin–McKnight 500kV line went out of service for any reason, the Barker's Corner–Bogalusa 230kV line would become overloaded, potentially causing cascading outages and voltage collapse. By running studies on these lines, MISO maintained situational awareness of the lines' capacity to maintain reliability.

Due to these factors, combined with expected load levels over the Memorial Day weekend, MISO committed all available generating units<sup>2</sup> within the load pocket area and anticipated sufficient generation would be committed to serve the load.

### Operational Planning Analyses

MISO performed several studies in preparation for operations over the Memorial Day weekend. Studies indicated anticipated congestion on the Barkers Corner–Bogalusa 230 kV line at 110% and the Richard–Bayou Cove 1 138 kV line at 121%, which did not exceed the IROL threshold of 125%. Due to this information, no further action was taken during Operations Planning.

It is common for study inputs to change between what was forecasted in an Operational Planning study and what occurs in real time. The most common occurrences are changes to weather, load patterns and generation dispatch.

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<sup>2</sup> The only exception was a 700 -MW unit, which remained offline due to its 64-hour start time, meaning it would not have had adequate time to start and provide assistance.





## Real-Time Operations – May 24

MISO Reliability Coordinators notified Entergy midmorning on May 24 that, due to unplanned generator outages, there would be little generation left to re-dispatch to address transmission issues in the area. MISO continued to work with Entergy to review options to mitigate the need for post-contingent load shed. MISO explored whether the Nelson–Richard 500kV line (then under repair due to spring storm damage) could be returned to service earlier than originally planned. Due to the need for replacement structures, the line could not be made available. MISO and Entergy also reviewed options for transmission line reconfiguration but found they would only provide limited relief.

## Real-Time Operations – May 25 up to 3:59 p.m. EST Declaration of Transmission System Emergency

In the early hours of May 25, 2025, MISO began coordinating with the Southeastern Reliability Coordinator (SeRC) and Entergy to evaluate potential transmission system reconfiguration options to address anticipated congestion in the New Orleans area. These discussions continued throughout the day.

By 8:38 a.m. EST, SeRC approved a reconfiguration at the Adams Creek substation to allow units to come online, as planned, to support the grid. Entergy agreed to implement the change at 11:41 a.m. EST. At 12:56 p.m. EST, Entergy also agreed to a post-contingent reconfiguration at the Madisonville substation for the Barker’s Corner–Bogalusa 230kV line in the event of a Franklin–McKnight 500kV line loss. At that time, MISO informed Entergy that this reconfiguration would alleviate the need for the post-contingent load shed. Between 1:29 and 3:40 p.m. EST, MISO and Entergy worked to resolve an overload on the Richard–Bayou Cove 1 138kV line. By 3:41 p.m. EST, Entergy reported that emergency ratings were still being exceeded, prompting MISO to reduce the output of two units to their economic minimums. However, MISO cautioned that this measure might not resolve the issue due to broader transmission system limitations.

While investigating reconfigurations over the course of May 25, MISO also reviewed Load Modifying Resource (LMR) availability but did not find any viable aid. In May, there were 450 MW of LMRs registered. Only 160 MW were available on May 25, with approximately 125 MW favorably located to provide required relief on the constraints. All the available units required two to six hours of notification time.



## Real-Time Operations – May 25 3:59 p.m. EST Through End of Day (Figure 3)

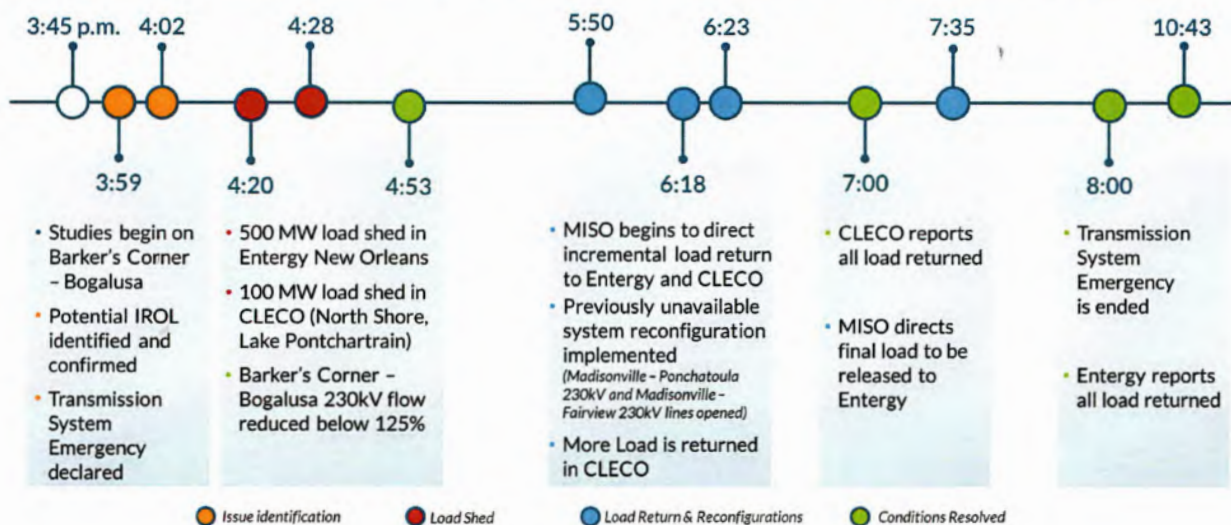


Figure 3

By 3:45 p.m. EST, all available generation within the load pocket was in use, but, due to the many planned and unplanned generation outages, it was not enough to support the system stability needs. Additional generation existed outside the Southeast Louisiana region, but due to the existing Nelson–Richard 500kV transmission line outage west of the load pocket and geographic barriers, there were not enough paths into the load pocket to allow this additional generation to support the area.

At 3:59 p.m. EST, MISO informed Entergy that a transmission system emergency had been declared after studies showed the loss of the Franklin–McKnight 500kV line would result in the overload of the Barker's Corner–Bogalusa 230kV, potentially triggering cascading outages and voltage collapse. As the total amount of load that would be lost could not be determined immediately, MISO decided to treat the Barker's Corner–Bogalusa 230kV line for the loss of Franklin – McKnight 500kV line as a temporary IROL. Once the overload and IROL are identified, MISO must resolve the overloaded constraint within 30 minutes. An official notification of the Transmission System Emergency was issued through the Operator Interface at 4:02 p.m. EST.

Between 4:02 - 4:20 p.m. EST, MISO ran additional studies related to reconfigurations of the Madisonville–Ponchatoula 230kV and Madisonville–Fairview 230kV lines as potential alternatives to load shed. However, while the proposed solution helped address one specific issue, it ultimately worsened other system constraints in the Lake Charles, Louisiana and Brookhaven, Mississippi, areas, making it an unviable solution to avoid load shed.

At 4:20 p.m. EST, MISO issued an Emergency Operating Instruction to Entergy to shed 500 MW of load in the New Orleans and Slidell areas. Four minutes later, Entergy operators called back asking for clarification on the operating instruction. Then, at 4:28 p.m. EST, MISO issued an emergency operating instruction to CLECO to shed 100 MW in the Northshore area. CLECO called back four





minutes later for clarification on the instruction. At 5:10 and 5:13 p.m. EST, respectively, CLECO and Entergy confirmed they had implemented their load shed instructions.

When MISO Reliability Coordinators issue Emergency Operating Instructions to shed load in a Transmission System Emergency, they provide a general area (in this case, New Orleans, Slidell and the North Shore). Then, Transmission Operators are responsible for determining where the load will be shed within the designated area based on their internal load shed plans.

Any rotation of outages is coordinated by the Transmission Operators with MISO to ensure compliance with the mitigation instructed to each entity. Due to the circumstances during the May 25 event, the greater New Orleans geographic area was the only location that could address the issue.

#### Load Shed Instruction Timeline:

- 4:20 p.m. EST: MISO issued an emergency instruction to Entergy to shed 500 MW of load in the New Orleans and Slidell area.
- 4:28 p.m. EST: MISO issued an instruction to CLECO to shed 100 MW of load in the Northshore area.
- 5:10 p.m. EST: CLECO confirmed implementation of instruction
- 5:13 p.m. EST: Entergy confirmed implementation of instruction.

Beginning at 5:48 p.m. EST, MISO began directing Entergy and CLECO to restore power in blocks to maintain grid stability. CLECO confirmed the organization's load was fully restored at 7:00 p.m. EST. At 7:35 p.m. EST, MISO fully released the load. At 8:05 p.m. EST, the Transmission System Emergency was terminated, and by 10:43 p.m. EST, all remaining load was returned by Entergy.

## Lessons Learned

### Internal Processes and Emergency Procedures

MISO has internal processes and clearly defined emergency procedures that support system reliability. However, as grid conditions grow more complex and dynamic, there is an opportunity to reassess these protocols to ensure they meet the needs of today's operational realities and provide timely information to impacted members.

Additionally, Load Modifying Resource availability and lack of aligned naming conventions continue to limit MISO's ability to locate the appropriate units and leverage them effectively during Transmission System Emergencies.

#### Action Items

- Investigate opportunities to adjust internal procedures related to transmission system concerns
- Review forward-reliability process
- Continue Load Modifying Resource reform



## Notification Procedures

MISO recognizes that the absence of a formal, pre-emergency declaration for Transmission System Emergencies limited the situational awareness paths available to MISO, member utilities, elected officials and residents. The lack of public notification resulted in residents and elected leaders feeling unprepared for the impending loss of power. Not all Transmission System Emergencies will allow for warning ahead of a load shed order. However, MISO is identifying opportunities to improve communication to give member utilities the time needed to alert their customers and regulators when possible.

### Action Item

- Through MISO's stakeholder process—beginning in the third quarter 2025—evaluate and implement opportunities for improved or enhanced communication between MISO and member utilities.

## Education and Training

Capacity and transmission emergencies differ significantly in appearance, timeline, and response, and public stakeholders do not have a strong understanding of these differences. Additional education for elected officials would help set expectations for less common events.

Additionally, conversations should occur with member utilities' operators and management to ensure they understand their specific roles, responsibilities, and what is expected of them during transmission and capacity load shed events. Misunderstandings about operator instructions, the IROL standard, and the time permitted to complete the load shed complicated the response to the May 25 event. MISO is developing a load shed workshop and tabletop exercise to address these knowledge gaps between MISO and member utilities.

### Action Items

- Integrate IROL and Transmission System Emergencies into MISO's load shed workshops and tabletop exercises.
- Expand planned load shed workshops and tabletop exercises to include additional members.





## Appendix A: Timeline – Sequence of Events

*All times referenced are Eastern Standard Time*

- 03/24/2025 0615: Nelson–Richard 500kV line went out of service due to damage from severe storms, limiting transmission capabilities into the southeast Louisiana area.
- 04/26/2025 1035: MISO entered the Barker’s Corner–Bogalusa 230kV for loss of the Franklin–McKnight 500kV line contingency into its market-based congestion management system. This was due to the planned outages of the Willow Glen–Waterford 500kV line and a 1,200 MW generating station.
  - MISO staff were concerned that if the Franklin–McKnight 500kV line went out of service for some reason, the Barker’s Corner–Bogalusa 230kV would become overloaded, which would have caused further cascading outages and possible voltage collapse. By running studies on these lines, MISO maintained situational awareness on the lines’ capacity to maintain reliability.
- 05/21/2025 1408: A 1,000 MW generating station entered an unplanned outage.
- 05/23/2025 1655: A 590 MW generating station entered an unplanned outage.

### Saturday, May 24

- 05/24/2025 1125: MISO Reliability Coordinators notified Entergy that due to generator outages, there was very little generation left to re-dispatch to address transmission issues in the area. Load shed was included in the post-contingent action plan.
- 05/24/2025 1518: A 440 MW generating unit began reducing load to come offline due to a mechanical issue.
- 05/24/2025 1531: MISO reliability coordinators called Entergy to notify them that the 440 MW generating unit would be coming offline, and that this would have a negative impact on the Barker’s Corner–Bogalusa 230kV line for loss of the Franklin–McKnight 500 kV line. MISO reliability coordinators mentioned this would increase the amount of post-contingent load shed if required. Entergy informed MISO reliability coordinators that they were studying a transmission reconfiguration option for the Madisonville–Ponchatoula 230kV line to provide some relief on this line.
- 05/24/2025 1548: MISO and Entergy agreed that opening the Madisonville–Ponchatoula 230kV line could be part of the post-contingent action plan, but it would only help slightly and would not eliminate the need for load shed.
- 05/24/2025 1819: MISO Reliability Coordinators asked Entergy whether the Nelson–Richard 500kV line could return to service before the planned return date of May 30. Entergy agreed to make inquiries and get back to MISO.
- 05/24/2025 1845: Entergy informed MISO Reliability Coordinators that the Nelson–Richard 500kV line could not be returned early due to the need to replace structures. MISO Reliability Coordinators mentioned that due to the transmission constraints, if lines became sufficiently overloaded, load shed could be required for post-contingent actions to address the issues.





## Sunday, May 25

- 05/25/2025 0155: MISO began coordinating with Southeastern Reliability Coordinator (SeRC) and Entergy to study possible transmission system reconfiguration options to alleviate predicted transmission system congestion around the New Orleans area later in the day.
- 05/25/2025 0838: SeRC agreed to the transmission reconfiguration at the Adams Creek substation to allow 235 MW units to come online and help with congestion.
- 05/25/2025 1141: Entergy agreed to implement the transmission reconfiguration at the Adams Creek substation.
- 05/25/2025 1256: Entergy agreed to a transmission reconfiguration post-contingent action at the Madisonville substation for the Barker's Corner–Bogalusa 230kV line for loss of the Franklin–McKnight 500kV line contingency. At that time, MISO informed Entergy that this reconfiguration would alleviate the need for the post-contingent load shed.

## Richard–Bayou Cove Concerns

- 05/25/2025 1329: Entergy agreed to a post-contingent action plan for the Richard–Bayou Cove 1 138kV line for the loss of Richard–Bayou Cove 2 138kV line involving lowering generation of three 116 MW units and a 930 MW generating unit.
- 05/25/2025 1348: MISO began coordinating with Entergy on a transmission reconfiguration at the 930 MW unit's substation to mitigate transmission congestion in the area around the Lake Charles area, with the Nelson–Richard 500kV line out of service.
- 05/25/2025 1406: MISO recommended implementing the reconfiguration at the 930 MW unit immediately pre-contingent. Entergy responded that they would get back to MISO after discussing the reconfiguration with management.
- 05/25/2025 1418: MISO requested Entergy to study a transmission reconfiguration involving the Bayou Cove substation in combination with the 930 MW unit reconfiguration. Entergy responded that they would have to get manager approval before agreeing to these reconfigurations.
- 05/25/2025 1423: Entergy informed MISO that they were experiencing a real-time overload of the Richard–Bayou Cove 1 138kV line. Entergy told MISO that immediate action was needed to remedy this, and MISO agreed to manually adjust the output of one of the 116 MW units in response.
- 05/25/2025 1430-1530: Entergy and MISO remained in contact regarding the line overload issue, attempting to find a solution.
- 05/25/2025 1541: Entergy informed MISO that they were still exceeding the emergency ratings for the Richard–Bayou Cove 1 138kV line. MISO lowered the two additional 116 MW units to their economic minimum generation level. MISO explained to Entergy that this may not solve the problem as the overall issue was the limited transmission system capability to serve load.
  - The transmission and generation dynamics that unfolded between 1300 and 1545, particularly involving the Richard–Bayou Cove 138kV #1 & #2 lines, the status of three





116 MW units, and the sustained unavailability of support across the Lake Charles Bulk 138kV interface, heavily impacted the amount of load flowing on other import lines. At this point, there was no capacity to increase the amount of electricity flowing into the load pocket.

## Transmission System Emergency

- 05/25/2025 1559: MISO informed Entergy that they were declaring a Transmission System Emergency due to a cascading outage study result that found that the loss of the Franklin–McKnight 500kV line would have resulted in the overload of the Barker’s Corner–Bogalusa 230kV line, the loss of which would have caused further cascading outages and possible voltage collapse. As total amount of load that would be lost could not be determined immediately, MISO made the conservative decision to treat the Barker’s Corner–Bogalusa 230kV line for the loss of Franklin–McKnight 500kV line as a temporary IROL.
  - Once the overload and IROL occur, MISO is required by federal guidelines to address and resolve the overloaded constraint within 30 minutes.
- 05/25/2025 1602: MISO issued a declaration of a Transmission System Emergency via Operator Interface for the temporary IROL post- contingent exceedance of Barker’s Corner–Bogalusa 230kV line for the loss of Franklin–McKnight 500kV line.
- Between 1602 and 1620, studies were run related to a reconfiguration of Madisonville–Ponchatoula 230kV and Madisonville–Fairview 230kV lines as a possibility in lieu of load shed. However, while the proposed solution helped address one specific issue, it ultimately worsened other system constraints that operators were already struggling to manage in the Lake Charles, LA and Brookhaven, MS area.
- 05/25/2025 1604: Entergy informed MISO that the Richard–Bayou Cove 1 138kV line was no longer exceeding its emergency rating. MISO also raised the Marginal Value Limit, resulting in increased market action to reduce emergency rating exceedance.
- 05/25/2025 1606: MISO issued a notification via the Reliability Coordinator Information System of the Transmission System Emergency.
- 05/25/2025 1620: MISO issued an operating instruction to Entergy to shed 500 MW of load in the New Orleans and Slidell area effective immediately, until further notice.
- 05/25/2025 1625: Entergy called MISO with the question, “Management want us to ask real quick, do you want us to do this prior to trying to do this reconfig, right?” MISO responded that they wanted the load shed done immediately.
- 05/25/2025 1628: MISO issued an Operating Instruction to CLECO to shed 100 MW in the Northshore area effective immediately, until further notice.
- 05/25/2025 1632: CLECO called MISO to ask the reason for the load shed order. MISO responded by explaining the generation and transmission situation requiring the order. CLECO responded that they were working on implementing the order.



- 05/25/2025 1640: MISO called Entergy to get an update on the amount of load that had currently been shed. Entergy responded that they had shed 75 MW using the distribution system and that they were working on shedding load using the transmission system.
- 05/25/2025 1653: The Barker's Corner–Bogalusa 230kV line for loss of the Franklin–McKnight 500kV line contingency fell below 125% post-contingent overload, ending its classification as a temporary IROL.
- 05/25/2025 1710: CLECO informed MISO that as of 1705 they had shed 104 MW of load.
- 05/25/2025 1713: Entergy informed MISO that they had shed 585 MW of load.
- 05/25/2025 1742: MISO and Entergy began coordinating to perform the transmission reconfiguration at the Madisonville substation.

## Restoration

- 05/25/2025 1748: MISO issued an Operating Instruction to Entergy to restore 100 MW of load in the New Orleans area.
- 05/25/2025 1749: MISO issued an Operating Instruction to CLECO to restore 20 MW of load previously shed. CLECO informed MISO they would accomplish this by shedding 80 MW in one area and restoring 100 MW in a different area at the top of the hour, in a rolling blackout scheme.
- 05/25/2025 1752: Entergy called MISO to inform them that their initial report of 585 MW of shed load was incorrect, the actual value was 460 MW of load shed, asking if this would change MISO's Operating Instruction to restore 100 MW of load. MISO responded to carry out the Operating Instruction and restore 100 MW of load.
- 05/25/2025 1804: MISO called Entergy to evaluate addition load restoration with the understanding that post-contingent load shed would be need if the Barker's Corner–Bogalusa 230 kV line for loss of the Franklin–McKnight 500 kV line contingency were to occur.
- 05/25/2025 1805: CLECO informed MISO that 20 MW of load restoration was completed.
- 05/25/2025 1806: Entergy informed MISO that they would prefer to wait until after the Madisonville transmission reconfiguration has been evaluated and implemented before any further load restoration takes place.
- 05/25/2025 1816: CLECO informed MISO that they had completed their study of the Madisonville transmission reconfiguration and were good with proceeding with implementation. MISO issued an Operating Instruction to CLECO to implement the Madisonville transmission reconfiguration.
- 05/25/2025 1822: MISO issues an Operating Instruction to Entergy for an additional 100 MW of load to be restored.
- 05/25/2025 1822: MISO issues an Operating Instruction to CLECO for an additional 20 MW of load to be restored.





- 05/25/2025 1836: CLECO informed MISO that they had completed the Operating Instruction to restore 20 MW of load. MISO issued CLECO an Operating Instruction to restore an additional 20 MW of load.
- 05/25/2025 1843: Entergy informed MISO that they had completed the Operating Instruction to restore 100 MW of load. MISO issued Entergy an Operating Instruction to restore an additional 100 MW of load.
- 05/25/2025 1847: CLECO informed MISO that the Operating Instruction to restore 20 MW of load was completed. MISO issued an Operating Instruction to restore the remaining 40 MW.
- 05/25/2025 1900: CLECO informed MISO that all load previously ordered to be shed had been restored.
- 05/25/2025 1924: Entergy informed MISO that due to load dropping off, finding the 100 MW of load to restore from the previous load restoration Operating Instruction was becoming more difficult. MISO issued an Operating Instruction to Entergy for an additional 100 MW of load to be restored.
- 05/25/2025 1935: MISO issues an Operating Instruction to Entergy to restore the final 100 MW of load originally shed.
- 05/25/2025 2005: MISO terminated the Transmission System Emergency and notified MISO members via Operator Interface.
- 05/25/2025 2049: Entergy reports all load has been restored except for one feeder breaker which was having issues.
- 05/25/2025 2243: Entergy reports that all load previously ordered to be shed had been restored.

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as of 10/10/2025**

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