May 25 Transmission Load Shed Event

Louisiana Public Service Commission

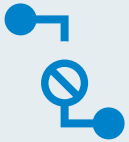
Wednesday, June 18, 2025

Executive Summary

- We recognize this event was deeply frustrating, disruptive and concerning
- This was a Transmission System Emergency load shed, not an Energy Emergency Alert/capacity shortfall
- Absent shedding load, cascading outages of the system may have resulted
- MISO is evaluating lessons learned and identifying next steps for enhanced communication and operation protocols

South Region conditions leading up to the event

DRIVERS



Limited Transfer Capability

Load pockets carry a unique set of reliability, planning and market efficiency considerations due to their location at the edge of the MISO system

Planned & Forced Outages

Eight generating units were on forced outage and four on planned outage

One 500kV transmission line was on forced outage (tornado damage)

MISO communicated with members leading up to the event and followed our procedures

Friday, May 23 – Sunday, May 25

Ongoing conversations with member operators in the region about challenging grid conditions

Able to effectively manage transmission system constraints

Sunday, May 25, 4 p.m. local

Transmission System Emergency and IROL condition materializes

Entergy and CLECO instructed to load shed

Sunday, May 25, 8 p.m. local

MISO ended Transmission System Emergency and continued to closely monitor

IROL

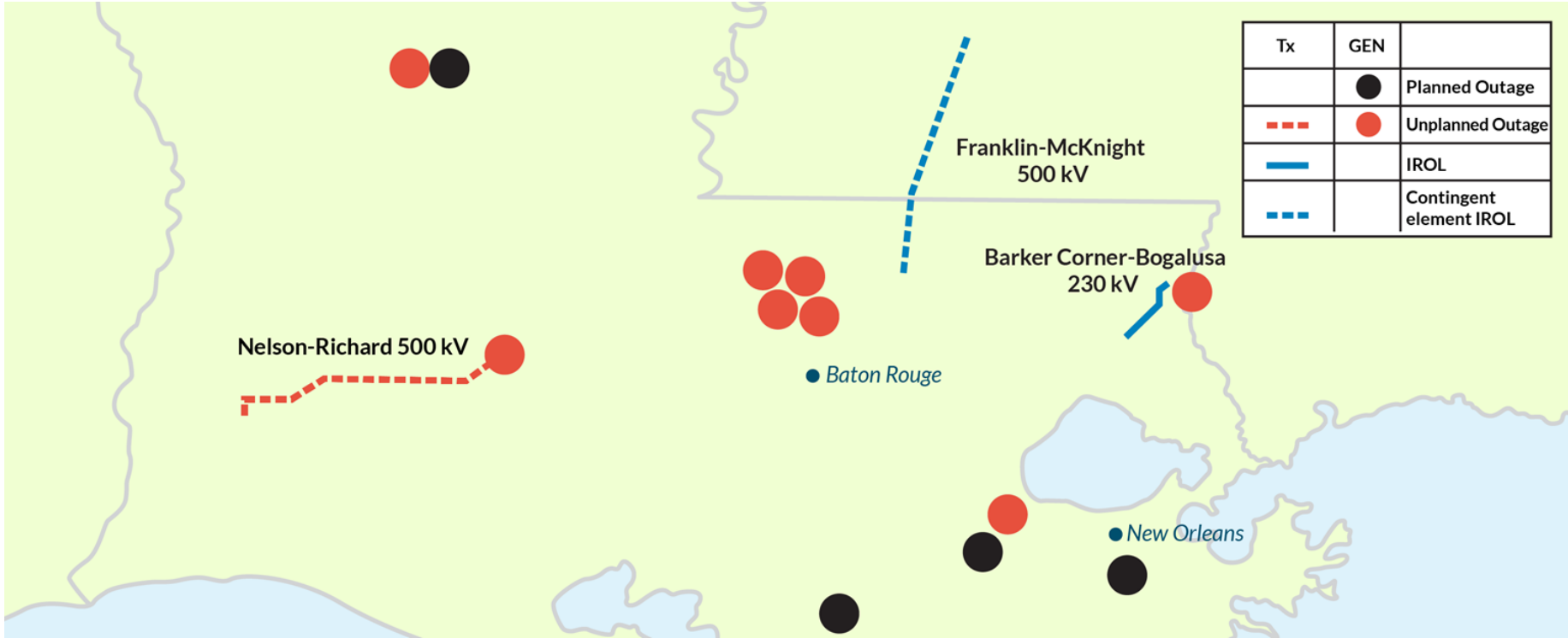
Interconnection Reliability Operating Limit

Electricity must flow within the physical limits of the transmission system

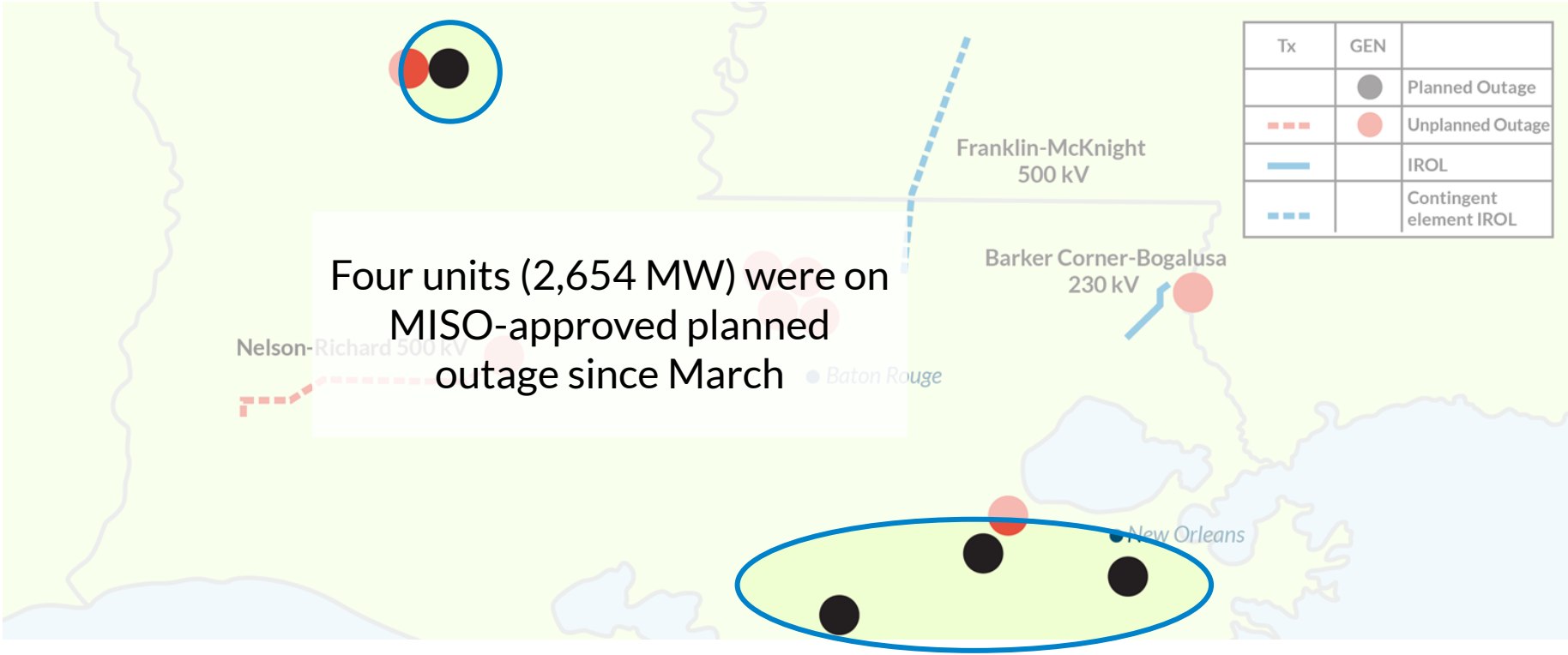
An IROL is a system operating limit that, if exceeded, could lead to instability, uncontrolled separation or ***cascading outages*** on the bulk electric system

When an IROL violation is identified, NERC reliability standards require corrective action ***within 30 minutes*** to resolve the constraint

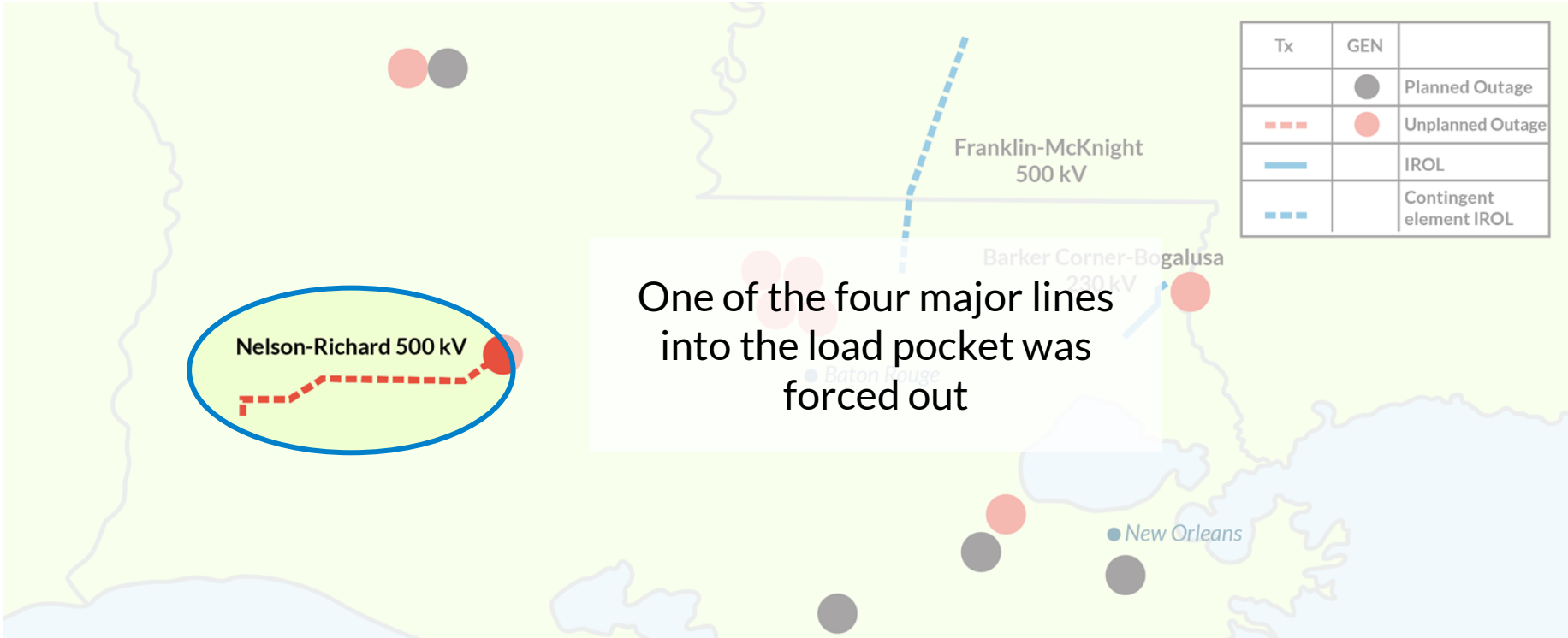
A confluence of factors led to the challenging operating conditions on May 25



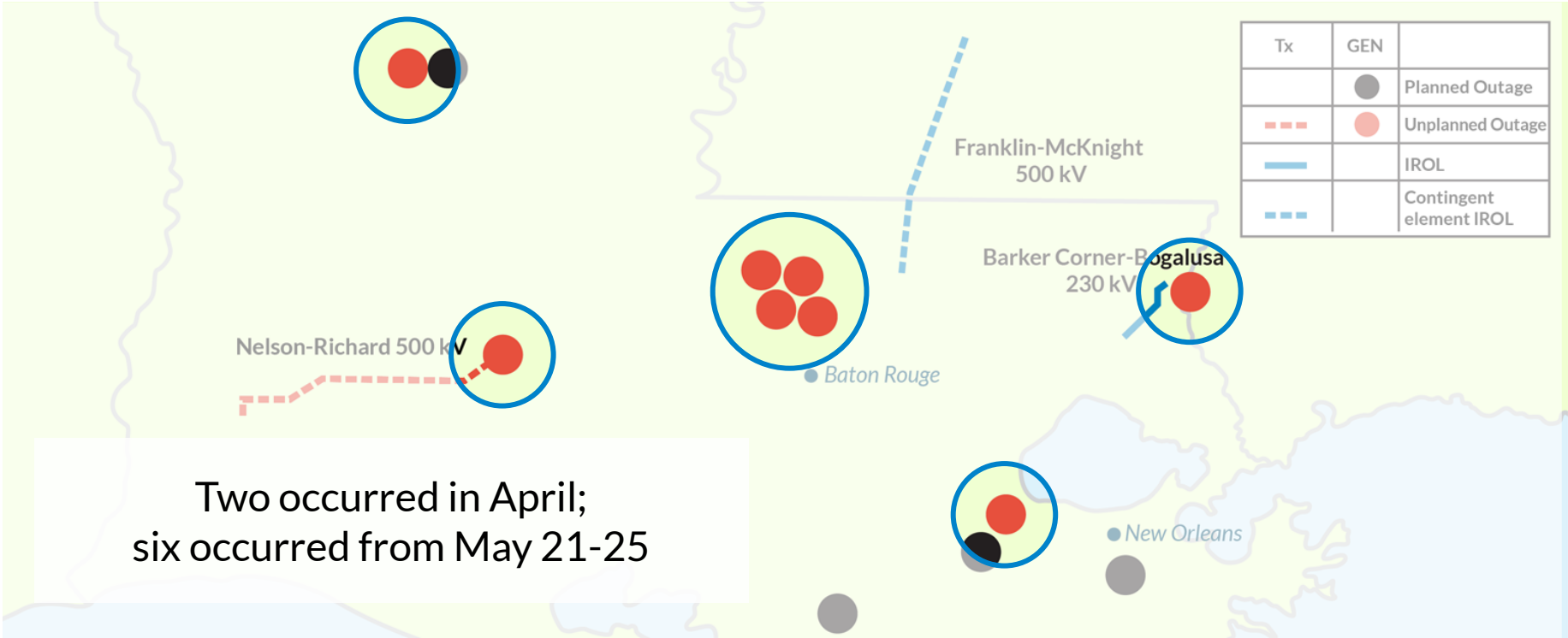
Late spring is usually when planned maintenance wraps up to get equipment ready for summer



A tornado in March 2025 took a 500 kV line out of service



Eight unplanned generating units were offline and totaled 3,867 MW with an additional 1,100 MW of derated units*



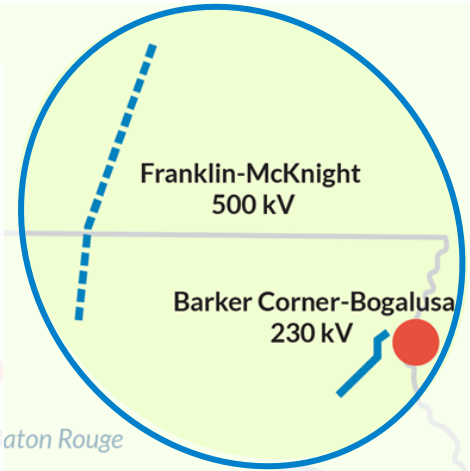
Two occurred in April;
six occurred from May 21-25

*Derated units not shown on map; A derated unit is a unit temporarily producing less than its full capacity due to unplanned situations.

An Interconnection Reliability Operating Limit (IROL) is a system operating limit that, if exceeded, could lead to uncontrolled cascading blackouts

At 4:00 p.m. local time, a study performed on Barker Corner–Bogalusa 230kV line identified an IROL for the loss of Franklin-McKnight 500kV line

- At 4:21, MISO ordered 500 MW of load shed to Entergy (NOLA area)
- At 4:30, MISO ordered 100 MW of load shed to CLECO (St. Tammany area)



Tx	GEN	
		Planned Outage
		Unplanned Outage
		IROL
		Contingent element IROL

Notification for a Transmission System Emergency is different from a capacity emergency (EEA)

Capacity Emergency

Occurs when there is not enough generation to meet demand

Typically linked to extreme weather (summer or winter peak)

Follows MISO's Maximum Generation and NERC's Energy Emergency Alert (EEA) process

Supported with various communications including advisories, declarations, EEA Alerts and website updates

Transmission System Emergency

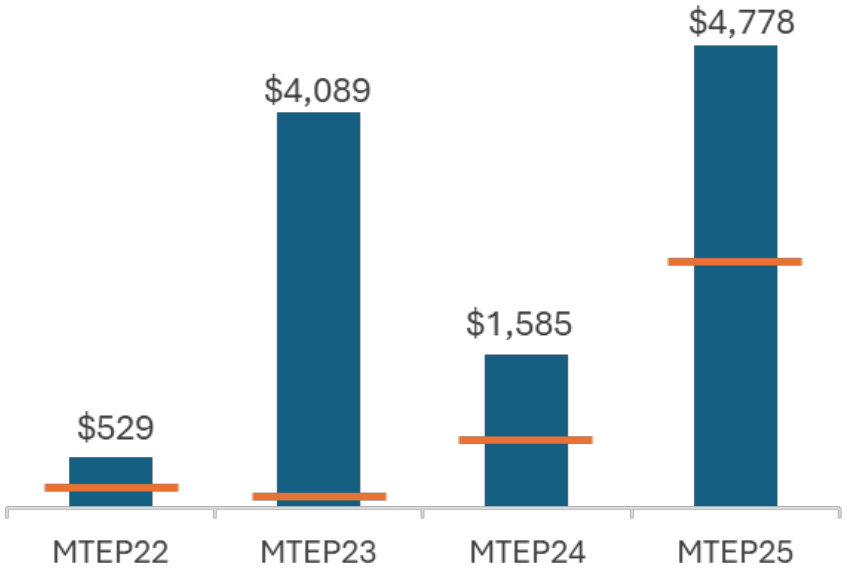
Occurs when there is an identified violation on the transmission system

Happens very quickly with no public declarations

Requires corrective action within 30 minutes to maintain grid stability

Building new transmission and ensuring new generation can connect to the grid are key elements of MISO's Reliability Imperative

MTEP Reliability Project Investment (millions) – MISO South Region



Interconnection Enhancements

- The Expedited Resource Addition Study (ERAS) process has been re-filed at FERC and is designed to temporarily expedite generation required for near-term regional needs
- New software to automate and significantly reduce study times

Load Growth Projects represented in area below orange lines

MISO is working to update our communication protocols for transmission system emergencies

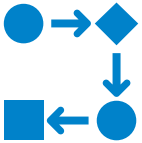
- How can we better communicate proactively for transmission system emergencies?
- Is there anything from our capacity protocols that we can utilize recognizing these are much different events?
- What training updates are needed based on lessons learned from this event?

Appendix

MISO's Planned Outage Coordination Process

MISO Operation teams assess the reliability impact of outage requests in different time frames

Operation scenarios identify potential issues, mitigation plans and coordinate 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 owners to reschedule outages

Unplanned outages are reduction or shutdown of resources due to emergencies, equipment failures, delays returning from planned outages, or other uncontrollable events

An IROL is the point when operational congestion becomes a reliability risk; crossing it isn't just a violation—it's a systemwide emergency

System Operating Limits
SOLs

Electricity must flow within the physical limits of the transmission system

Interconnection Reliability Operating Limit
IROL

A type of SOL related to system congestion that, if exceeded, could lead to instability, uncontrolled separation or cascading outages on the bulk electric system

Temporary IROL Condition

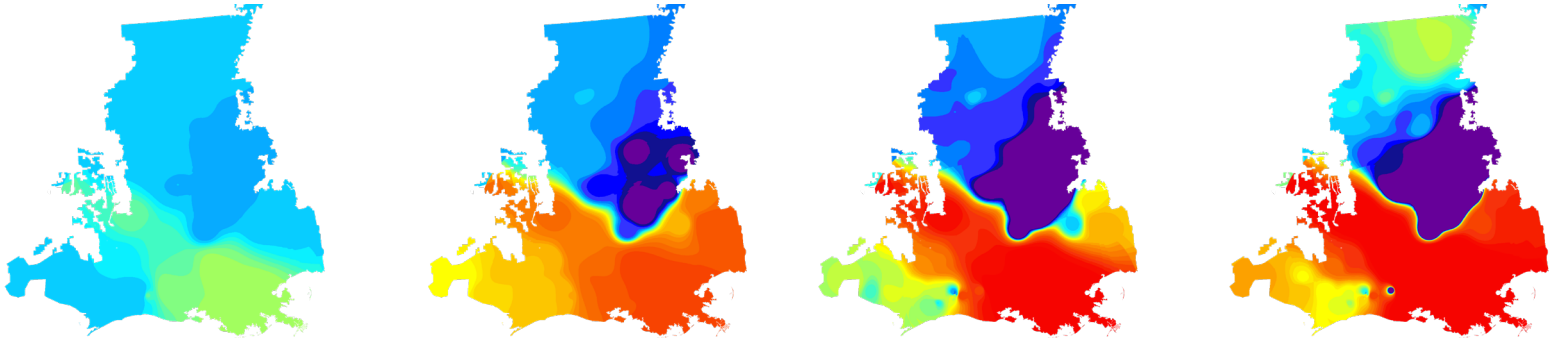
When studies show an IROL condition, a TSE is declared, and NERC reliability standards require action within 30 minutes to resolve the constraint

Normal Operations

Following load shed, load is restored as quickly as possible, once system constraints are eased

Locational Marginal Pricing maps show the congestion increasing over the weekend

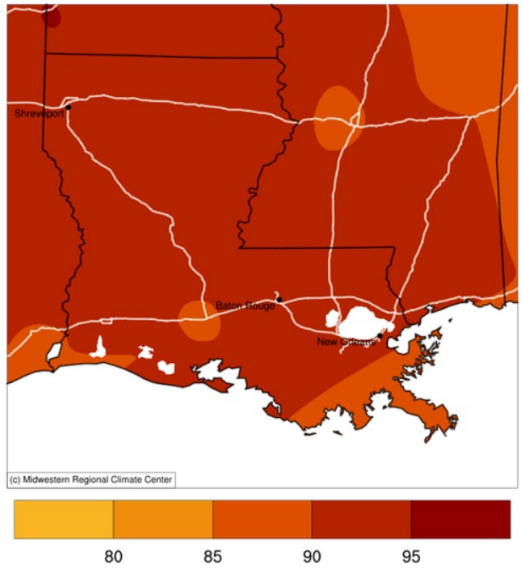
May 22	May 23	May 24	May 25



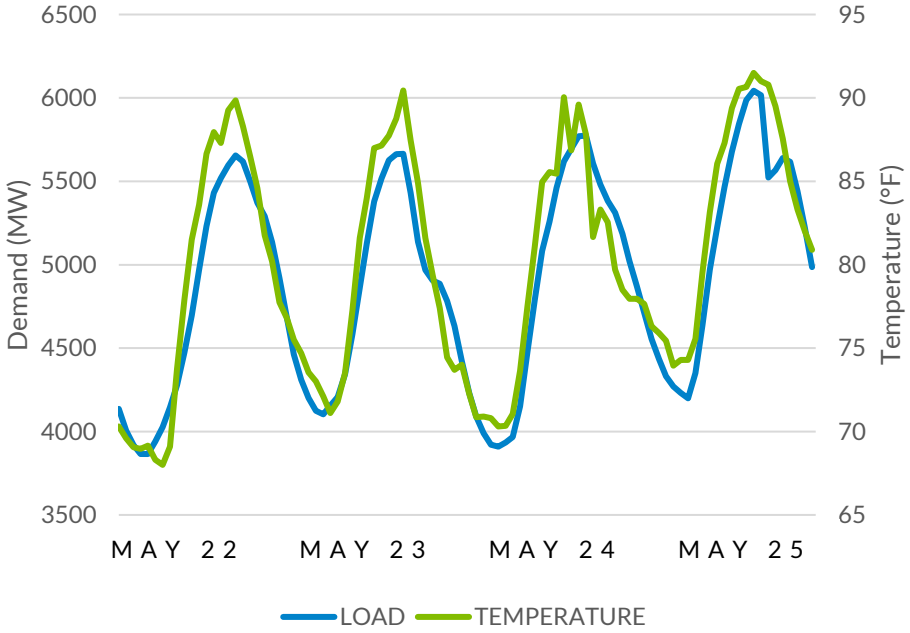
- 800.00 to 1,000.00
- 600.00 to 800.00
- 500.00 to 600.00
- 400.00 to 500.00
- 300.00 to 400.00
- 250.00 to 300.00
- 200.00 to 250.00
- 150.00 to 200.00
- 125.00 to 150.00
- 115.00 to 125.00
- 100.00 to 115.00
- 90.00 to 100.00
- 82.00 to 90.00
- 76.00 to 82.00
- 68.00 to 76.00
- 62.00 to 68.00
- 56.00 to 62.00
- 50.00 to 56.00
- 46.00 to 50.00
- 42.00 to 46.00
- 38.00 to 42.00
- 34.00 to 38.00
- 30.00 to 34.00
- 26.00 to 30.00
- 20.00 to 26.00
- 14.00 to 20.00
- 6.00 to 14.00
- 0.00 to 6.00
- -10.00 to 0.00
- -999.00 to -10.00

Several days of building heat drove higher demand

Average Maximum Temperature (°F)
May 25, 2025



Load & Temperatures - Amite South



Load pockets have less import/export capability