



2019 Illinois Winter Preparedness Policy Session

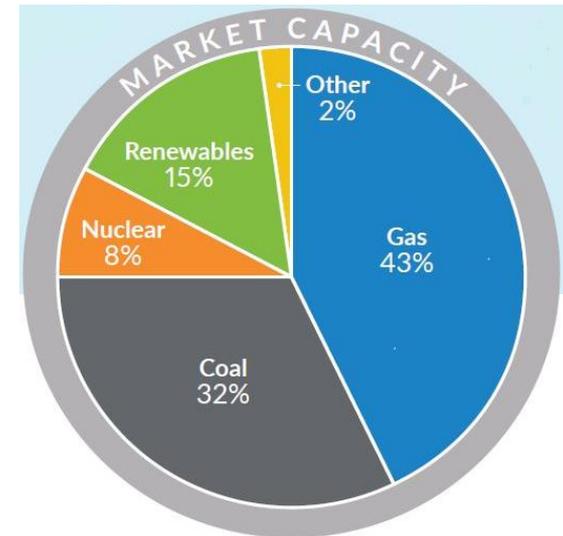
December 3rd, 2019
Bob Kuzman

MISO ensures reliable delivery of electricity, at the lowest cost, across the grid in 15 U.S States and Canadian province of Manitoba.

Vision: The most reliable, value-creating RTO



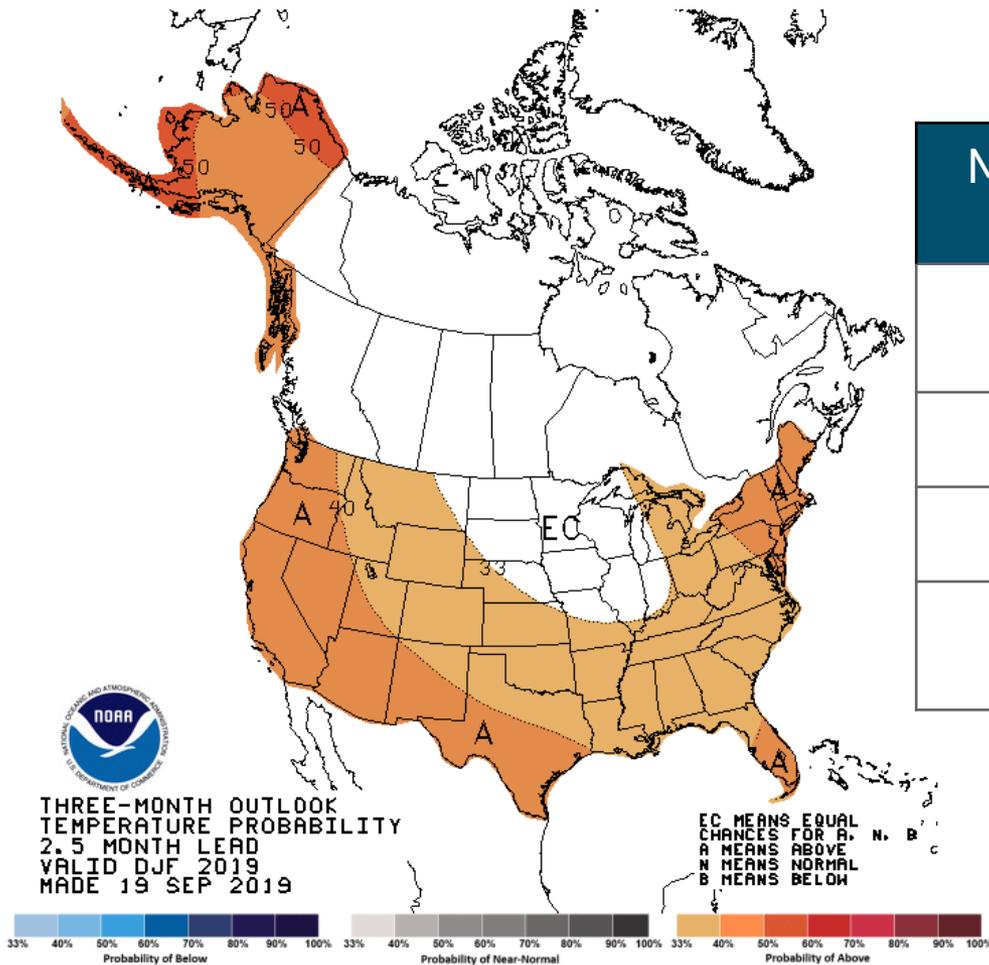
High Voltage Transmission	68,500 miles
Generation Capacity	178,359 MW
Summer Peak Demand	127,125 MW
Winter Peak Demand	109,336 MW
Customers Served	42 Million



143 GW of resources available and are projected to meet demand for winter 2019-2020 with slightly warmer than normal temperatures forecasted for pockets of the MISO footprint

MISO Preliminary 2019-2020 Winter Forecast

MISO-wide Reserve Margin Target	17%
Projected Reserve Margin	37%
Winter Peak Forecast	104 GW
Total Projected Available Capacity*	143 GW

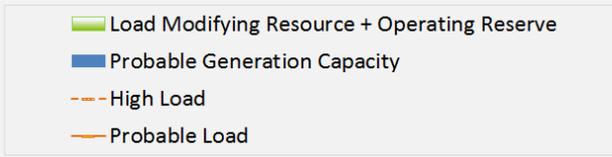
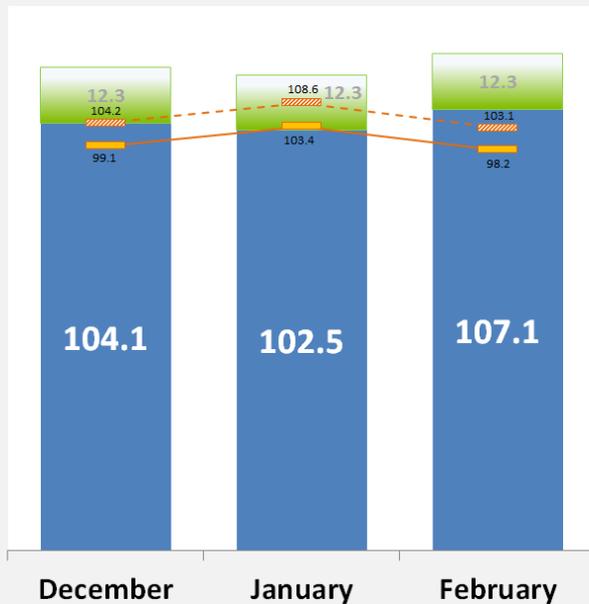


*All-time Winter Peak:
109 GW on January 6, 2014*

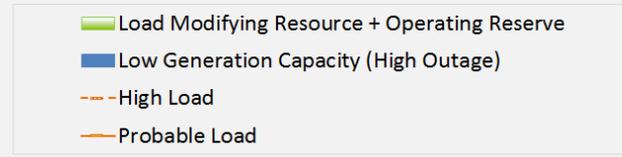
Adequate reserves are projected to meet the expected winter peak demand forecast, although a combination of both high load and high outages would present reliability challenges

Winter 2019-2020 Resource Adequacy Projections (GW)

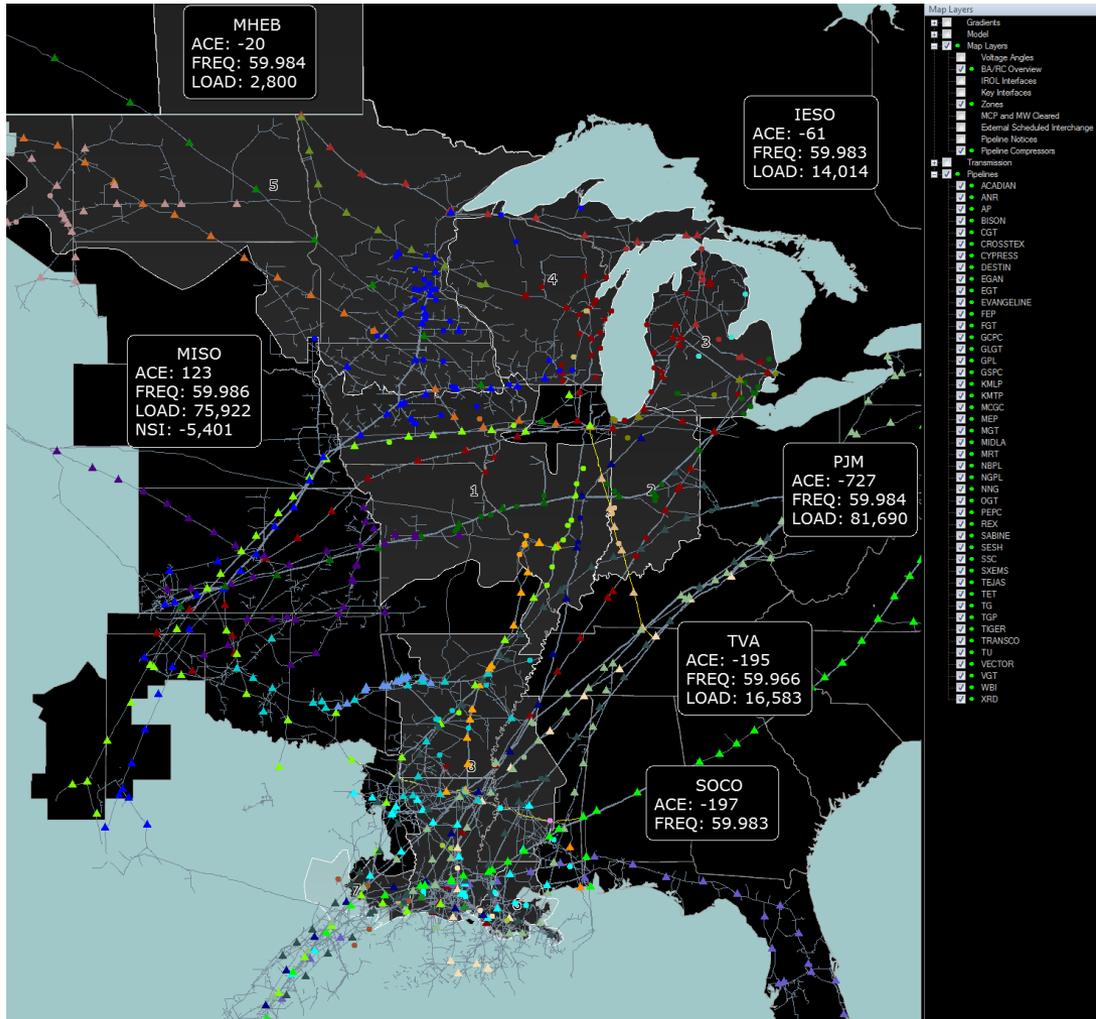
Probable Generation Capacity Scenario



Low Generation Capacity (High Outage) Scenario

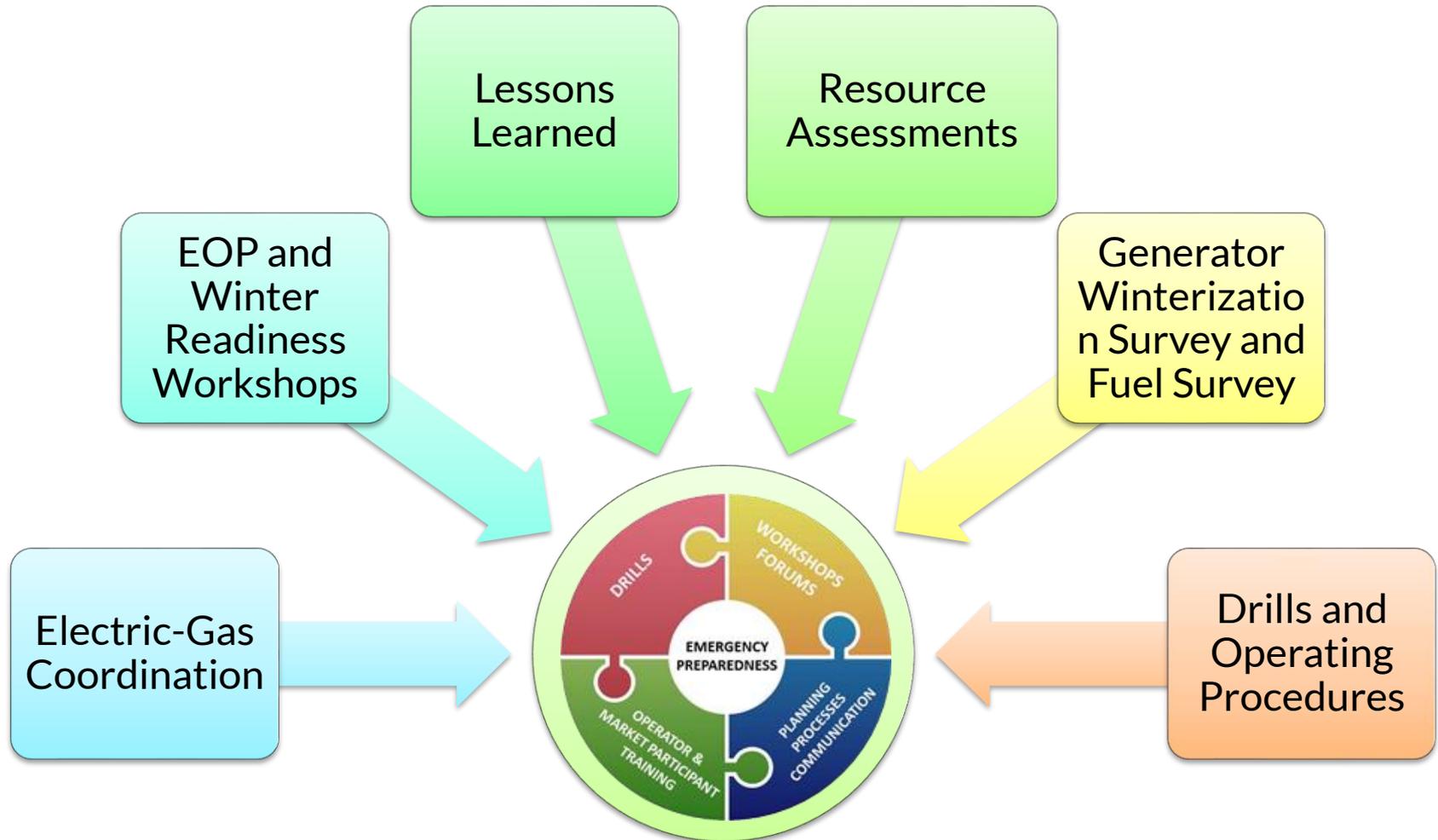


Gas pipeline and storage access throughout the MISO footprint support Winter generation needs



- Midwest storage levels at or above the five year average due to strong production and relatively mild temperatures
- Multiple pipelines reported record gas generator demand over the summer
- Gas demand for electric power sector continues to increase as coal units retire
- Prolonged cold temperatures could impact pipeline delivery, withdrawals, and prices

Extreme winter weather can contribute to significant losses of electric generation. MISO is well prepared to handle winter operations through....



Appendix

Emergency preparedness efforts bolster reliability during the winter months and year-round

Gas Electric Coordination and Winter Fuel Survey further increase Gas-Electric situational awareness

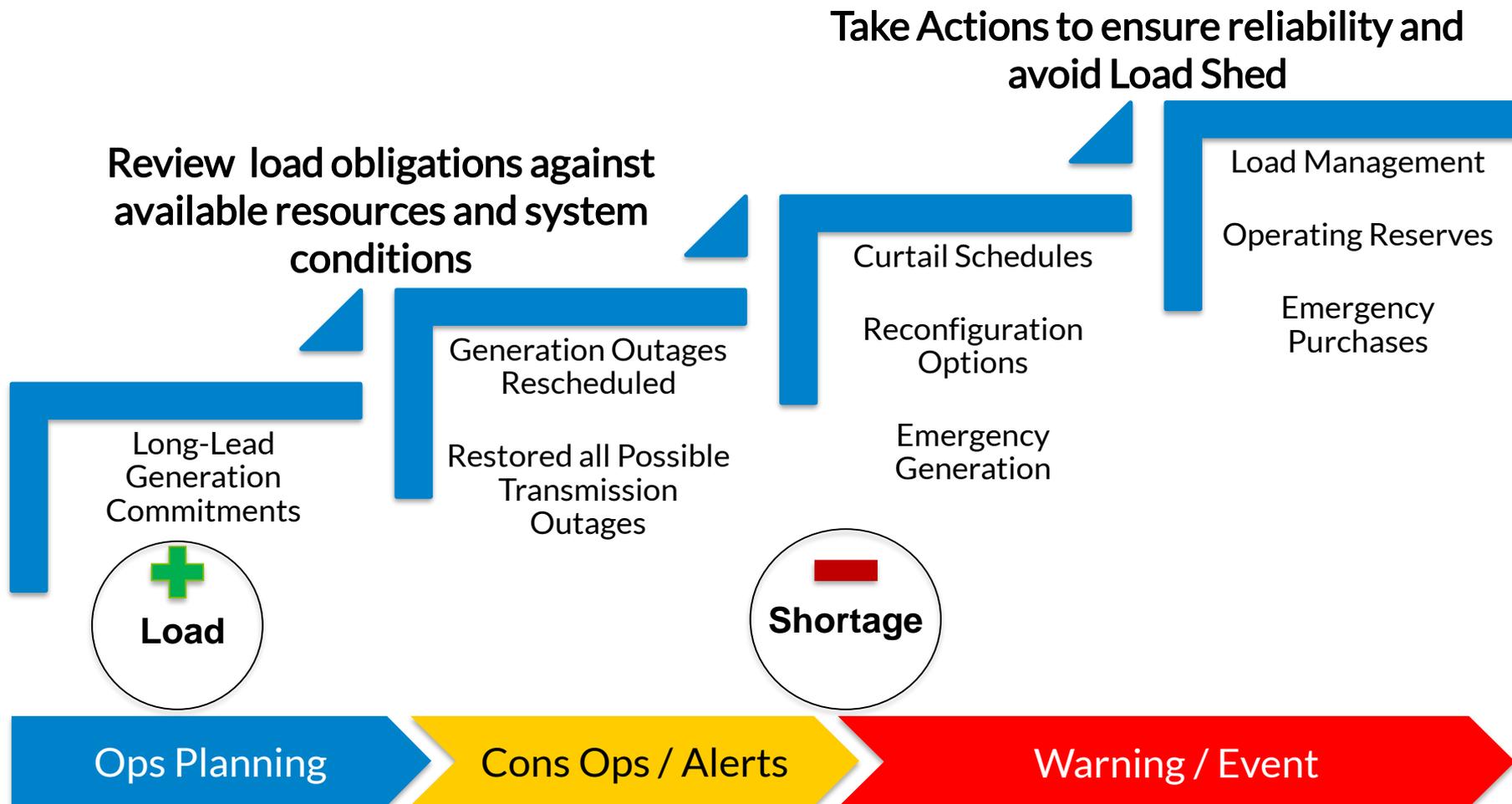
Winter Readiness Workshops, Drills and Winterization Guidelines facilitate Emergency Preparedness



Energy Offer Cap and Gas Pipeline visibility tools enable MISO Operators to manage extreme circumstances

Lessons Learned from previous events have been incorporated into daily operations

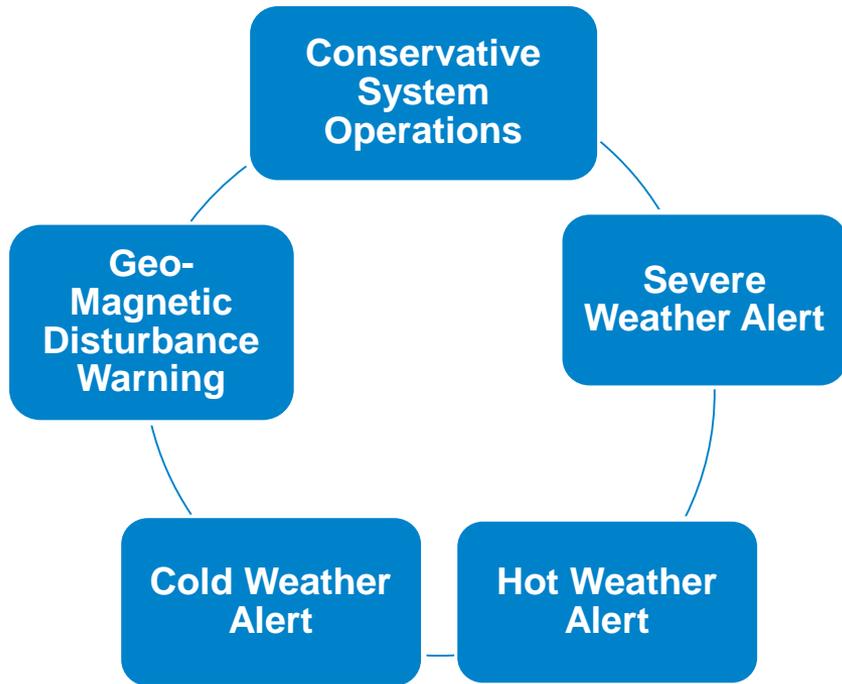
In Real-Time, unplanned outages and other unknowns may require additional actions



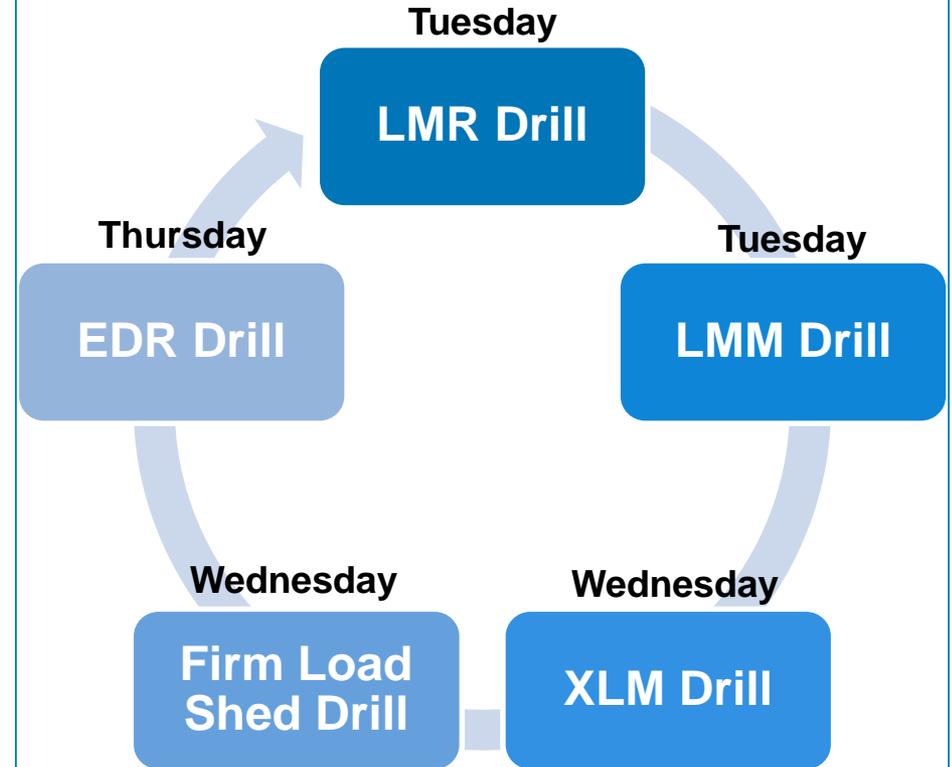
Operators use emergency procedures and partner with members to drill on emergency processes to ensure readiness in all operating situations

Emergency Operating Procedures

guide operator actions when an event has the potential to, or actually does, negatively impact system reliability



Monthly Drills



Power Restoration Drills: Three Drills held Oct 2019
Summer Readiness Drills: 6 Thursdays in April and May 2019