



Raja Thappetaobula

Manager, Reliability Coordination and
Engineering – Northern Region
Midcontinent Independent System
Operator, Inc.

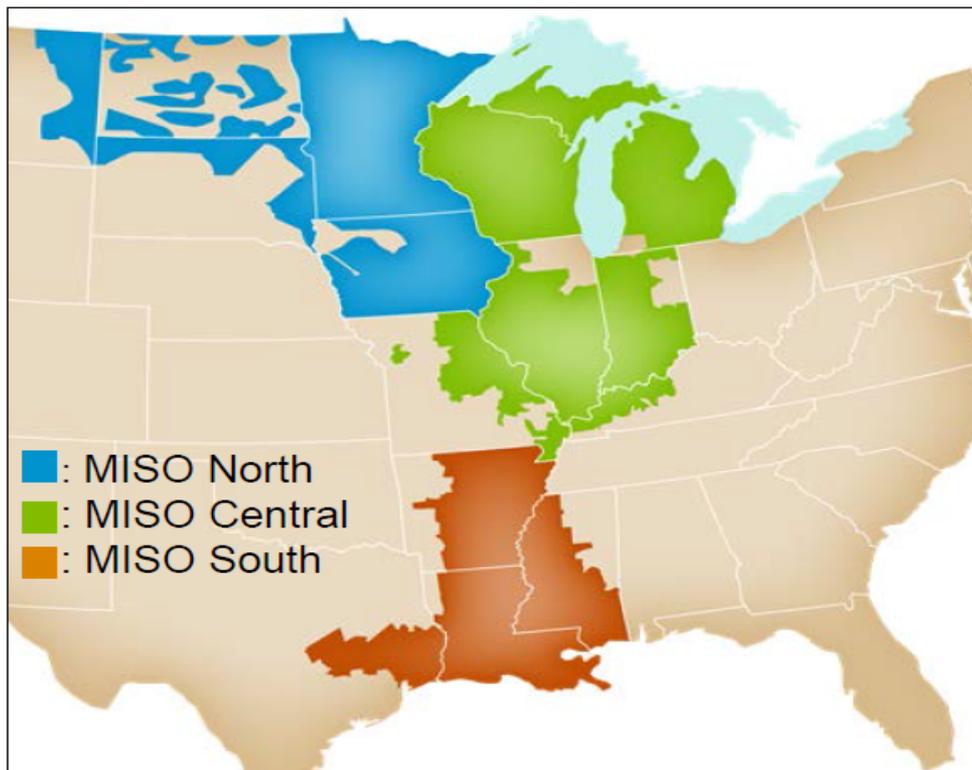


Midwest Energy Assurance:
Raja Thappetaobula
MISO

July 31th , 2018

Overview of MISO:

MISO is an independent, non-profit organization in 15 U.S. States and one Canadian province



MISO by-the-numbers

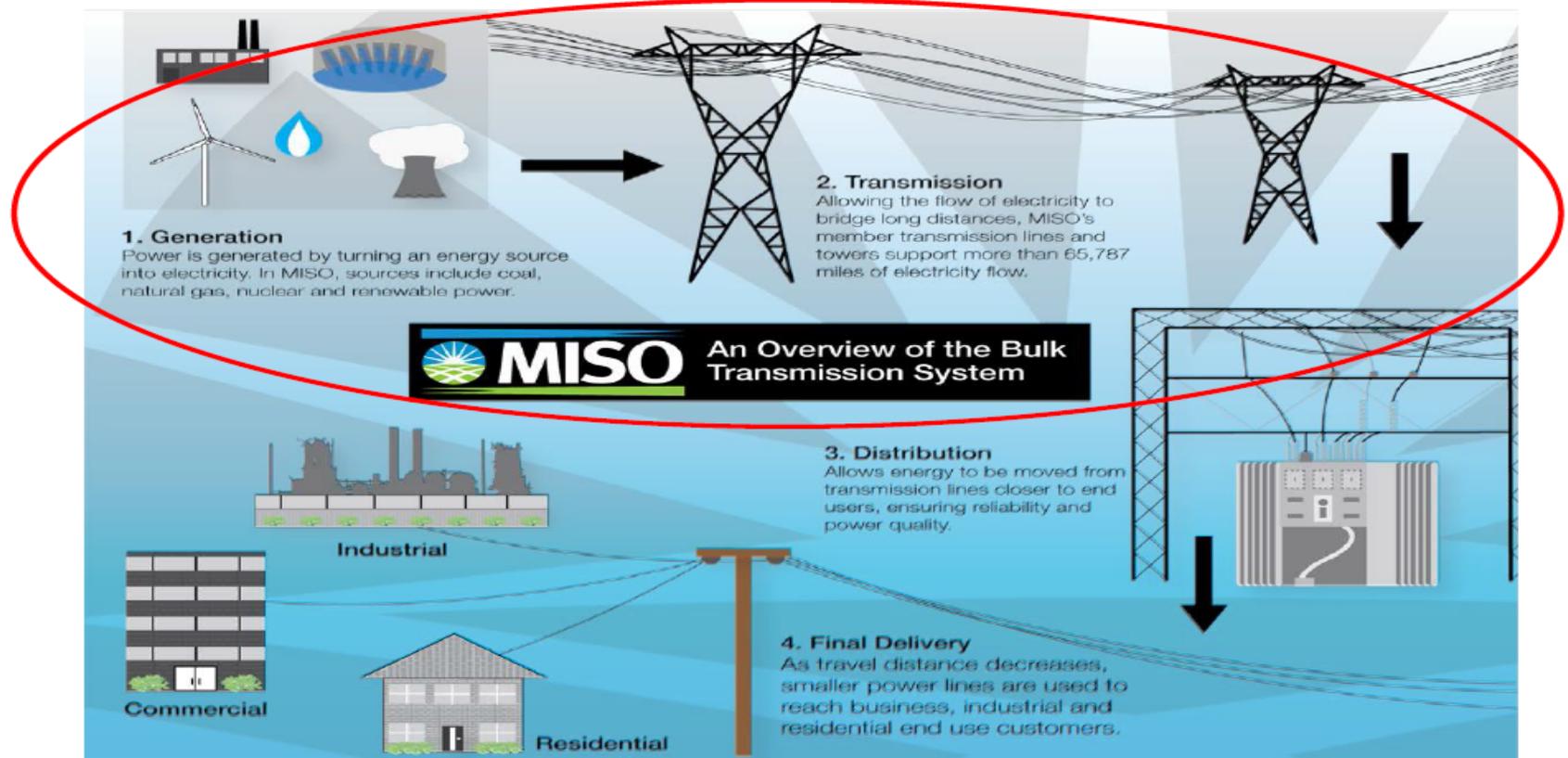
High Voltage Transmission	65,853 miles
Installed Generation	177,388 MW
Installed Generation	1,594 Units
Peak System Demand	127,125 MW

Mission

Work collaboratively and transparently with our stakeholders to enable reliable delivery of low-cost energy through efficient, innovative operations and planning.

Overview of MISO:

MISO manages flows on the transmission system by directing generator usage



MISO and State Officials Communication Protocols:



MISO and State Officials 24X7 Communication Protocols During Emergencies:

- MISO Operations procedure **SO-P-AOP-00-217** establishes a process for MISO operations to communicate with state Officials.
- Ensure information flows to the appropriate state officials and efficient exchange of information during emergency conditions

Initiation of MISO and State Officials Communication Protocol

- Any time there is a projection of, or actual loss of load due to transmission issues that may undermine public health, safety, and welfare
 - Capacity Emergency requiring firm load curtailments.
 - Transmission System Emergencies requiring firm load curtailments
 - Forced Transmission outages resulting in loss of significant firm load.
 - Severe risk of terrorist attack, man-made or natural disasters (i.e. Hurricanes, hurricane winds, earthquakes, etc.) with potential to cause loss of firm load

MISO Cyber Security Incident Response Plan :



MISO Cyber Security Incident Response Plan:

- MISO also has a process for identifying and classifying Cyber Security Events and Cyber Security Incidents
- Cyber Security Incidents affecting MISO Information Systems and specific physical security threats involving attempts at or successful breaches of Physical Security Perimeters

MISO Power System Restoration Plan :



MISO Power System Restoration Plan:

- Establishes a process to successfully restore the Bulk electric System (BES) after a partial or complete system blackout.
- Provides coordination between all Transmission Operators restoration plans to ensure reliability is maintained during system restoration events.
- Reliability coordinators Coordinates reporting to regulatory agencies or government agencies for significant events.
- Restoration plans are drilled at least annually.

MISO Power System Restoration Plan:

- MISO RC's primary role is to serve as a facilitator during the restoration process
- Coordinating, compiling and disseminating information, and maintaining stability.

Questions ?



- **Raja Thappetaobula**

[Mgr North Region Reliability
Coordination](#)

[MISO](#)

rthappetaobula@misoenergy.org

651-632-8460