

**-Harvesting Clean Energy-  
Regional Transmission  
Interconnection Issues**  
  
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Ed Weber

Transmission System Planning Manager

Upper Great Plains Region

Western Area Power Administration

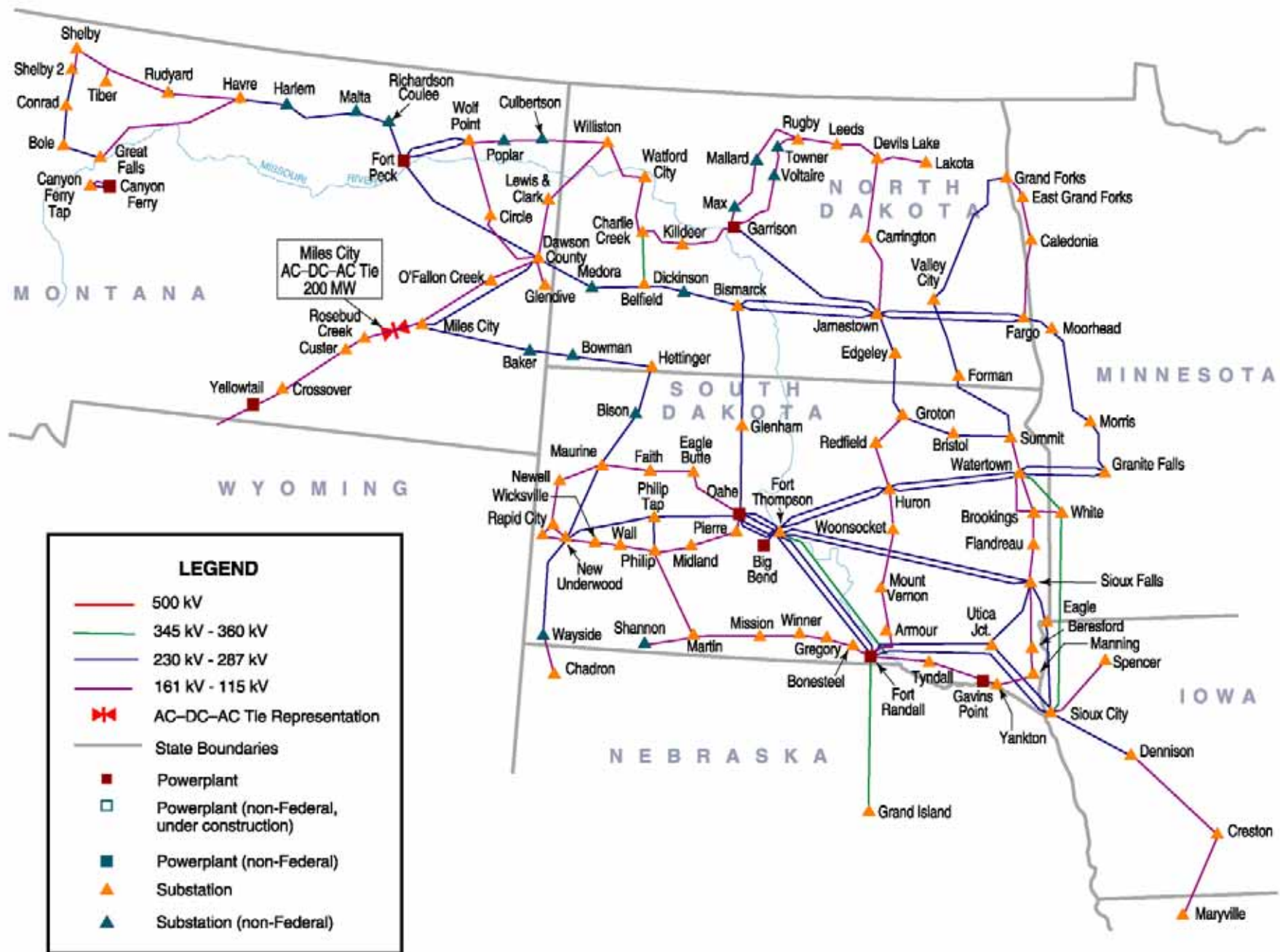
# Overview

- Western's System(s)
- Western and Regional Policy(s)
- General Requirements for Interconnection
- Behind the Meter Generation
- Other Issues

# Upper Great Plains Region

- 7,800 miles of transmission
- 100 Substations in 7 States
- Upper Great Plains markets over **10,000 GWh** of energy annually from 8 power plants in the Missouri Basin
- Integrated transmission and generation system with Basin Electric Cooperative





# Transmission and Generation are Separate

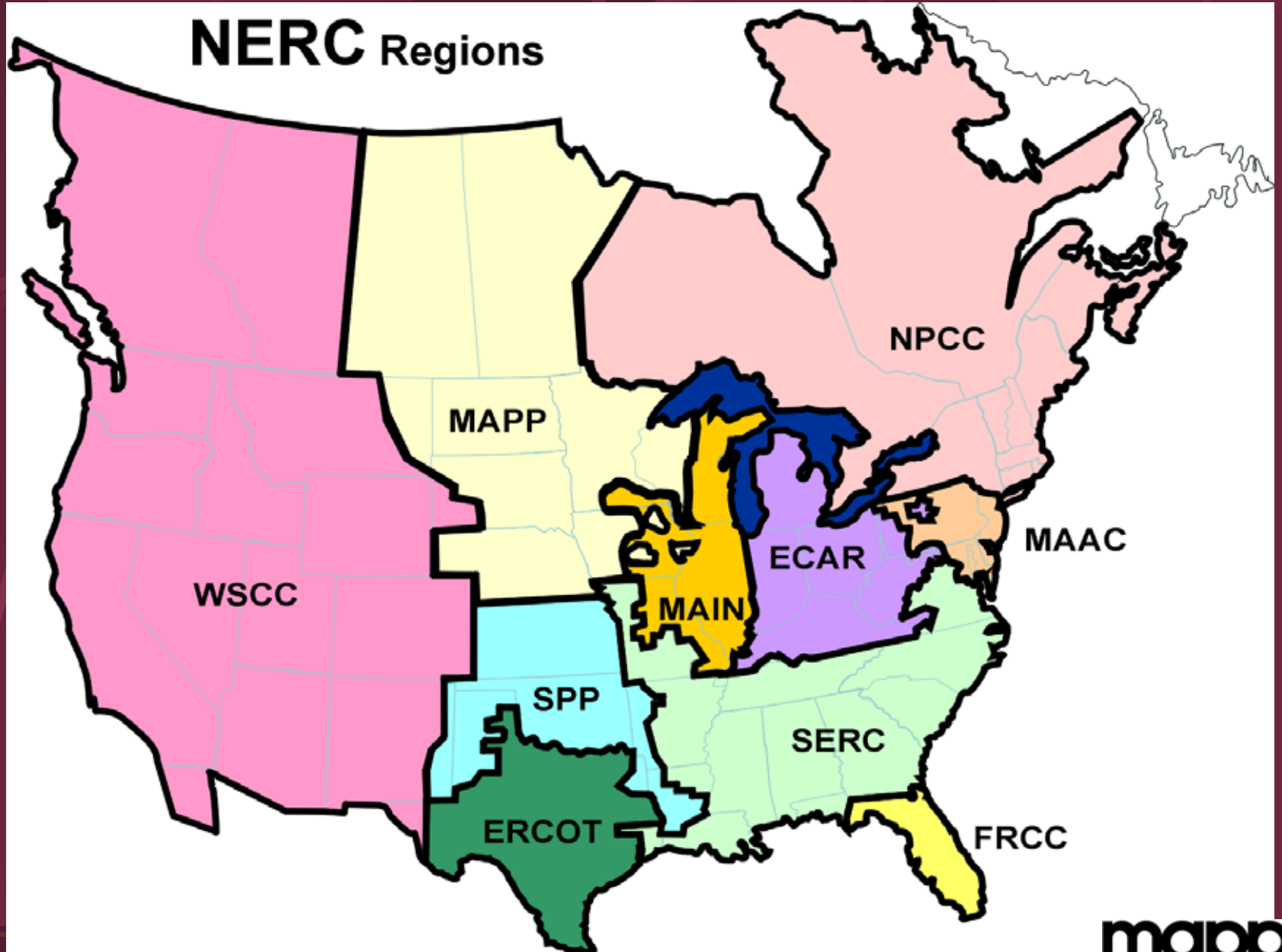
- Transmission Reliability is Primary Concern
- Must Follow Transmission Rules – Tariff
- Generation Comes from Many Sources Now
- Integration of Transmission and Generation

# Western UGP is a Member of the Western Electricity Coordinating Council

One of 10 Regional Reliability Councils of  
the North American Electric Reliability  
Council – Reliability Police for Elec Industry

NERC – formed in 1967 after NY Blackout

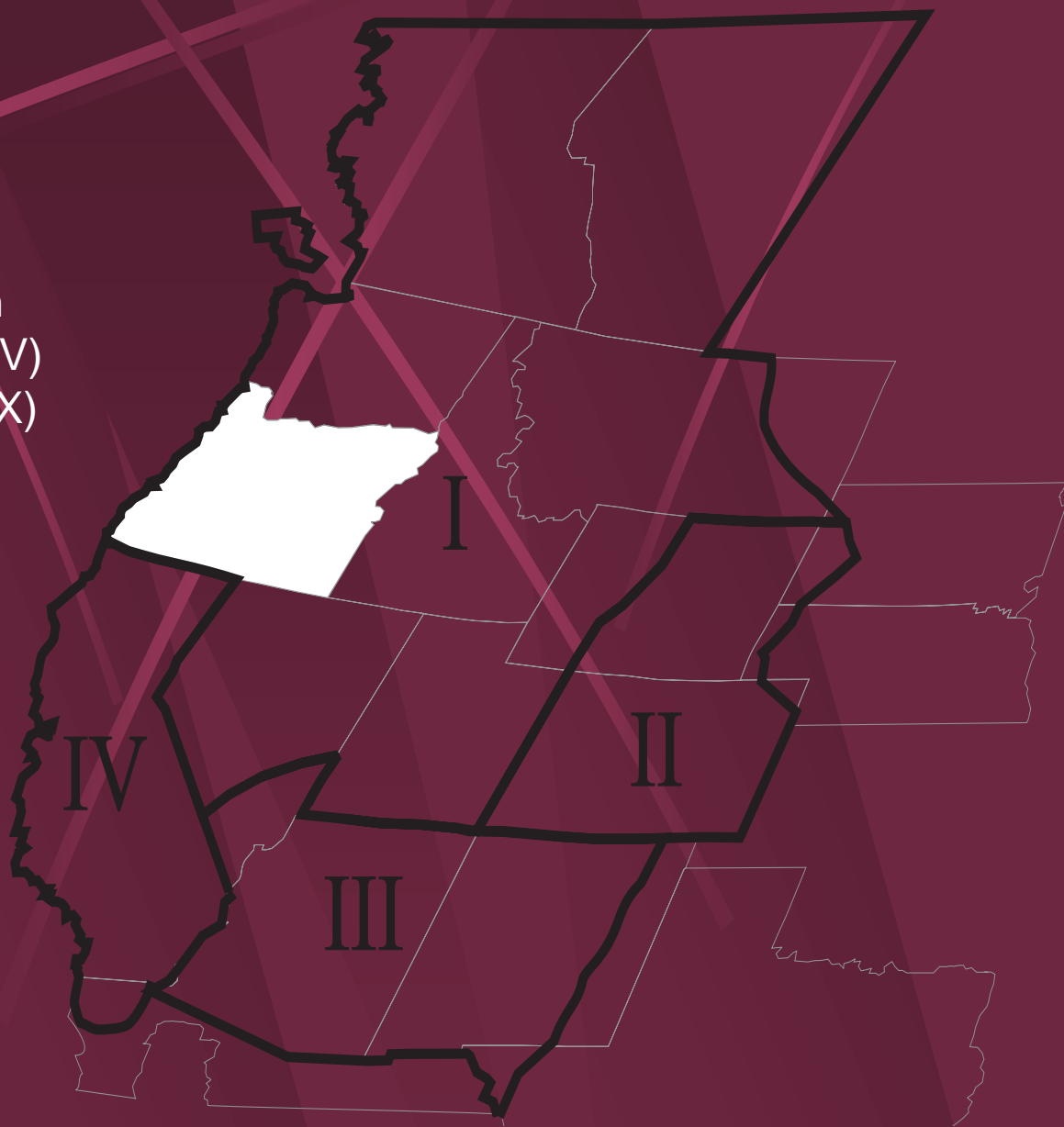
# NERC Regions



# The MAPP Region



- I - Northwest Power Pool Area (NWPP)
- II - Rocky Mountain Power Area (RMPA)
- III - Arizona-New Mexico-Southern Nevada Power Area (AZ/NM/SNV)
- IV - California-Mexico Area (CA/MX)



# Regional Reliability

- Each Utility must monitor reliability of their own system
- Individual Utility Requirements and Tariff
- Regional Reliability Handbook(s)
- MAPP Restated Agreement
- WECC Reliability Management System
- NERC Reliability Standards – 120 +

# Western's Policies and Procedures

- WECC Path Rating Catalogue
- WECC Coordinated Peer Review
- General Requirements for Interconnection
- Western's Open Access Transmission Tariff
- Western's Behind the Meter Gen. Policy

# Western's GRI

- Interconnection Process – 8 Steps
  - Contact Western and Submit Application
  - System Impact Study
  - Facility Study and Preliminary Design
  - Environmental Review
  - Land Acquisition if needed
  - Design and Construction
  - Testing, Energize, Contract Execution
  - Close-out

# Western's GRI Cont'd

## ● Technical Requirements

- System Planning – Identify Reliability Issues
- Design – Identify Requirements for:
  - Substations, Trans. lines, System Protection
- Operations and Maintenance
  - System Control, Ownership – Responsible Party
- Communications and Metering – ***More Later***











