

# ATC Customer Meeting

November 19, 2009

# 2009 Summer Review & Winter Preview

- 2009 Summer Review
  - Advanced Preparation
  - Review and Performance
  - Summer Peak Demand – Actual vs. Forecast
  - Wind Generation
  - Midwest CRSG Events
  - Lessons Learned
- 2009-2010 Winter Overview

# Advanced Preparation

- Consistent with prior years, the Midwest ISO collaborated with stakeholders prior to the summer period to ensure preparedness
- Worked with the Reliability Subcommittee (RSC) to enhance procedure RTO-EOP-002 (Max Gen)
  - Revised procedure to incorporate Emergency Demand Response (EDR) and Load Management Resources (LMR) language
  - Clarified steps for Midwest ISO to collect information and when members should use resources available (public appeal, interruptible loads, etc.)
- Performed a coordinated seasonal transmission assessment to supplement our members' individual system assessments
  - Evaluated a variety of conditions that stress the system, including conditions beyond first contingencies

# Advanced Preparation, Cont'd

- Conducted Summer Readiness Workshop on April 30, 2009
  - Presented summer reliability assessment
  - Reviewed emergency procedures
- Provided system operators with training on potential system conditions impacting system reliability for the summer season
- Conducted multiple Load Management Resource (LMR) drills and an end-to-end Maximum Generation Emergency procedure drill
  - Local Balancing Authorities (LBAs) participated in these drills

# 2009 Summer Conditions

## Weather

- Load levels during the summer period were lower than normal partially due to below normal temperatures in the region
- High heat conditions were mainly limited to the 3<sup>rd</sup> week of June, when the weather combined with generation outages to cause stress to the system in some areas of the region; the challenging conditions were effectively managed with the help of local utilities in the effected areas.

## Economy

- Economic factors also impacted load levels as the Midwest ISO region, consistent with the rest of the country, continues to slowly recover from recessionary conditions
- The portion of load that can be attributed to economic factors declined by an estimated 13% from the summer period of 2008 to the summer of 2009

## Outages

- Outage levels were generally normal during the summer period

# 2008 Summer Review

## Number of Days $\geq$ 90

Summer	Sioux Falls	Milwaukee	St. Paul	St. Louis	Peoria	Indianapolis	Cincinnati
2007	16	6	28	53	31	33	55
2008	6	0	11	30	8	6	34
% Difference	-62%	-100%	-61%	-43%	-74%	-81%	-38%

# 2009 Summer Review

## Number of Days $\geq$ 90

Summer	Sioux Falls	Milwaukee	St. Paul	St. Louis	Peoria	Indianapolis	Cincinnati
2008	6	0	11	30	8	6	34
2009	2	2	3	25	6	8	7
% Difference	-67%	+200%	-73%	-17%	-25%	+33%	-79%

# Summer Peak Demand

- Market Peak Demand Forecasts:
  - Coincident 102,472 MW
  - Non-Coincident 107,149 MW
- Varying weather across the footprint resulted in Midwest ISO regional loads peaking at different times:
  - West Market: 18,087 MW on 6/23/09
  - West Reliability: 28,887 MW on 6/22/09
  - East Region: 45,485 MW on 6/25/09
  - Central Region: 34,537 MW on 6/25/09
  
  - Non-coincident Peak: 98,109 MW
  - Diversity Factor 1,319 MW
  - Coincident Peak: 96,790 MW



# Annual Peak

Annual Market Peak Loads	
August 1, 2007	104,292 MW
July 29, 2008	98,620 MW
June 25, 2009	96,790 MW

# 2009 Summer Performance

- Mild weather enabled generally smooth operations with no emergency conditions experienced during the summer period
- There were no Maximum Generation Emergency Alerts, Warnings or Events during the summer period
- There were however, 5 Minimum Generation Emergency Events
  - 3 in June (6/1, 6/6, 6/7)
  - 1 in July (7/12)
  - 0 in August
  - 1 in September (9/27)

# Wind Generation Summary

- Registered Wind capacity in Market August 31, 2009: 5,636 MW
- Average wind generation during daily peak hour: 1,170 MW
- Wind generation at time of summer peak
  - (6/25/09 HE 14:00): 148 MW
- Peak summer wind generation
  - (5/14/09 01:27): 3,701 MW
  - Largest 60 minute increase/decrease in wind generation: 1032/-873 MW
- Maximum wind during off peak:
  - May: 3,701 MW on 5/14/09 01:27
  - June: 3,172 MW on 6/27/09 23:13
  - July: 2,656 MW on 7/15/09 05:07
  - August: 2,756 MW on 8/22/09 22:57
- Average wind generation during daily minimum load hour: 1,344 MW

# Noteworthy Items

- NERC and MRO performing event analysis on 34 MW islanding event near Western Border of the Midwest ISO Reliability footprint which occurred August 29, 2009
- MidAmerican Energy Company, Muscatine Power & Water, and the City of Cedar Falls, Iowa joined the Midwest ISO on September 1, 2009

# Midwest CRSG Events

- For the period of May 1, 2009 through September 30, 2009 the CRSG has processed 168 ARS events
  - 7 have been DCS reportable events
- DCS reportable threshold remains at 850 MW

# Summer Lessons Learned

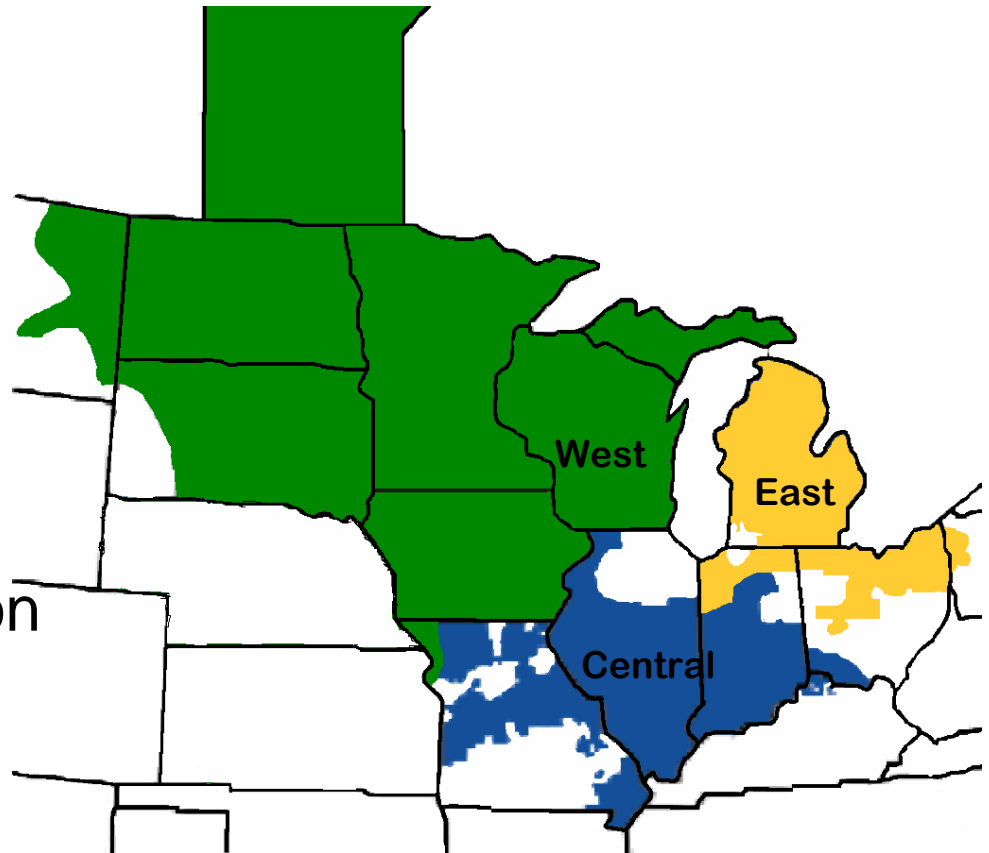
- Emergency procedures enhancements since last summer improved operational capability and positioning
- Weekly emergency procedure drills improved operator awareness of procedures
- Telephone Communication Protocols paying benefits in Real Time Operations
  - Criteria established, audit communications, provide operator feedback
  - Goal: Consistently achieve outstanding communication during normal and emergency conditions

# Summer Lessons Learned, Cont'd

- Wind forecasting critical to reliability
- LMR drills identified the need for additional work on data collection and implementation in real time
- Will continue to utilize stakeholder input to make advancements

# Winter Assessment Overview

- The Midwest ISO winter peak 2009/2010 Coordinated Seasonal Assessment (CSA) reviews the performance of the Midwest ISO Bulk Electric System and selected sub-transmission
  - Under anticipated winter peak loading conditions





# 2009/2010 Winter Peak Demand

- Midwest ISO is projecting a non-coincident winter peak demand of:
  - Coincident: 85,300 MW
  - Non-coincident: 87,667 MW
- These forecasts include the new membership of MidAmerican Energy Company, Muscatine Power & Water, and Municipal Electric Utility of the City of Cedar Falls, Iowa
- Economic factors are expected to continue to impact load levels and offset the load increases from new membership
  - Forecasted demand is nearly flat when compared to the 2008/2009 non-coincident winter peak demand of 88,313 MW

# Generation / Purchase & Sales

- Total Generation - 119,775 MW
  - Available to serve Midwest ISO load from internally and externally designated network resources during the 2009/2010 winter peak period
- Purchases and Sales
  - 3,937 MW of firm import reservations
  - 1,793 MW of firm export reservations
  - Could be scheduled on during the 2009/2010 winter period

# 2009 / 2010 Overall Winter Assessment

- Based on the study results, the Midwest ISO Bulk Electric System can be operated reliably during the winter 2009 / 2010 peak load period in accordance with the operating principles and guidelines contained within the Midwest ISO Manuals
- No significant transmission constraints are expected to cause a reliability concern for the upcoming season.