



2007 Electric Summer Reliability

Presentation to the Indiana Utility Regulatory Commission (IURC)

John R. Bear
Senior Vice President & COO
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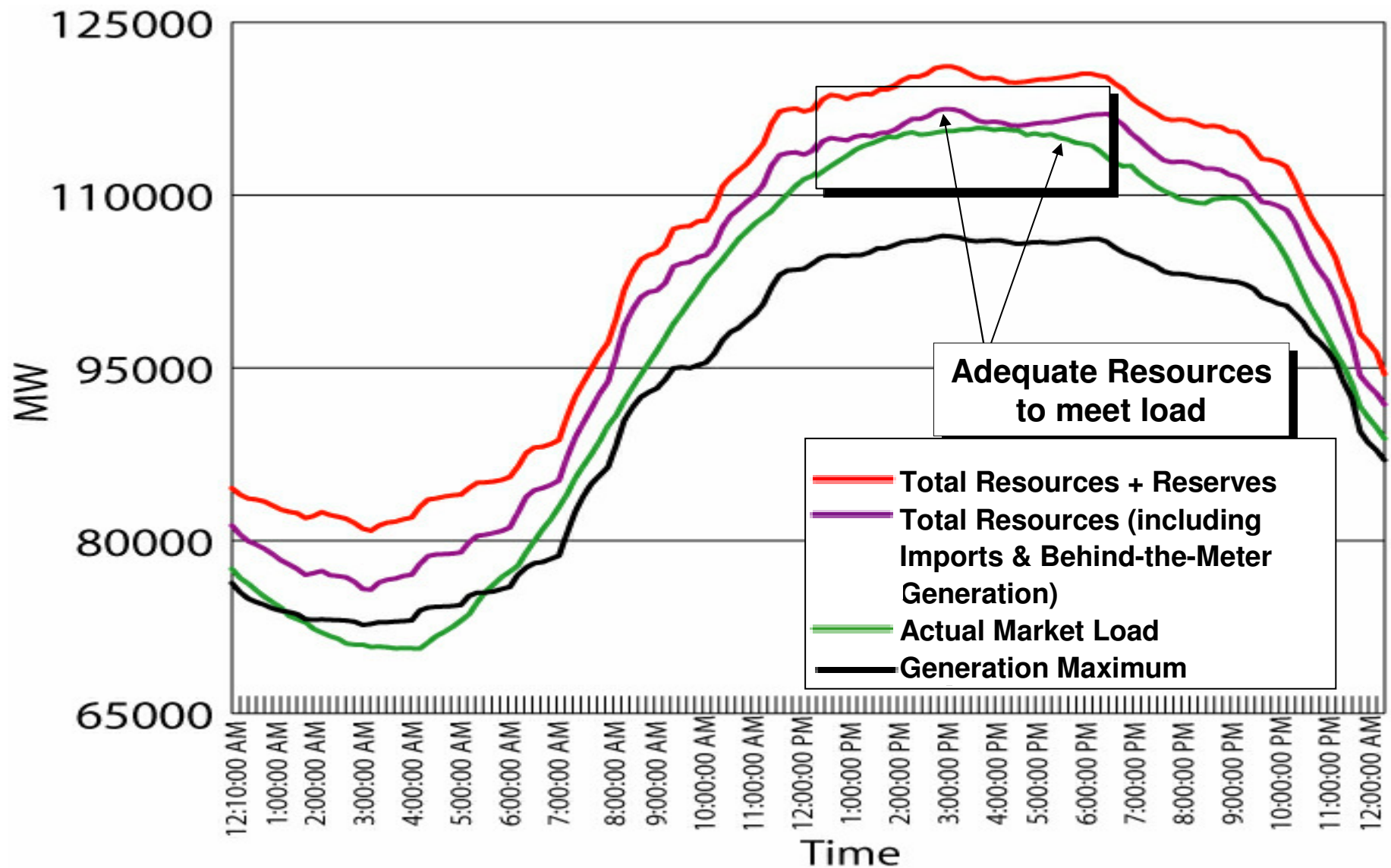
Outline



- 2006 Summer Review
- NERC Examples of Excellence (EOE)
- Reliability Tools & Process/Procedures Improvements
- 2007 Summer Readiness Preparation

Summer 2006 Peak

July 31, 2006



Summer 2006 Lessons Learned



- ■ More granularity in emergency procedure implementation
 - Public Appeals – what time, what type, urgency
 - Interruptible load
 - Improve tools
- More granularity in process steps for exiting emergency conditions
 - NERC¹, Balancing Authority and Transmission Owner procedures coordination
- Improve Communications
 - Frequency and effectiveness of updates

¹ North America Electric Reliability Council

NERC Examples of Excellence



- NERC independently reviews reliability entities to encourage improvement of operations from a reliability standpoint
- Examples of Excellence (EOE) are industry practices identified as exceptionally effective in ensuring and protecting system reliability
- 2006 – 6 EOE Awarded to the Midwest ISO
 1. Training – Dispatcher Training Simulator
 2. Tools - Voltage Stability Analysis and Real-Time Monitoring
 3. Tools - State Estimator and Contingency Analysis Availability
 4. Tools - Area Control Error (ACE)
 5. Power System Restoration
 6. Operational Scorecard
- Along with the 6 EOE, the Midwest ISO also received 13 positive observations from NERC

Midwest ISO Improvements

Since Summer 2006



■ Emergency Procedures

- Refined steps of Maximum Generation Emergency Event to include two stages of interruptible loads
- Transmission Emergencies - streamlined procedure and clarified roles
- Aligned with Transmission Owner & Balancing Authority procedures

■ Contingency Reserve Sharing

- Launched on 1/1/07, the Midwest ISO acts as the administrator for nation's largest Contingency Reserve Sharing Group
- Reduced reserves held by 1,470 MW (40%)

■ Demand Response Initiatives

- Revenue Sufficiency Guarantee (RSG) charges/credits are not charged during emergency events when following Midwest ISO directive
- Working to establish compensation, pricing and the specific priority rules for emergency demand response resources

Midwest ISO Improvements

Since Summer 2006 (continued)



- Available Ramp Capability (ARC) Procedure
 - Implemented in April 2007
 - Utilized by the Midwest ISO for short periods of time (less than 60 minutes by rule) to allow some of the on-line reserves to make more generation available to meet load

- Day-Ahead Sufficiency Report
 - Mechanism that reports individual Balancing Authority sufficiency data the day ahead of the operating day

- Real-Time Sufficiency Tool
 - Utilized to monitor and determine current operating day capacity sufficiency for each balancing area
 - In the event a load reduction is required, this tool determines the amount of reduction required by each Balancing Authority within the projected constrained area

Summer 2007 Assessment



- The Midwest ISO Market Footprint has a NERC reserve margin of 26.7%
- To evaluate the supply and demand risk profile, the NERC equivalent capacity has been adjusted to reflect the effective available capacity to the market footprint
 - Reduced to reflect derates, uncommitted resources and forced outages
 - Increased to include external designated network resources and imports
- Midwest ISO Effective Margin Analysis

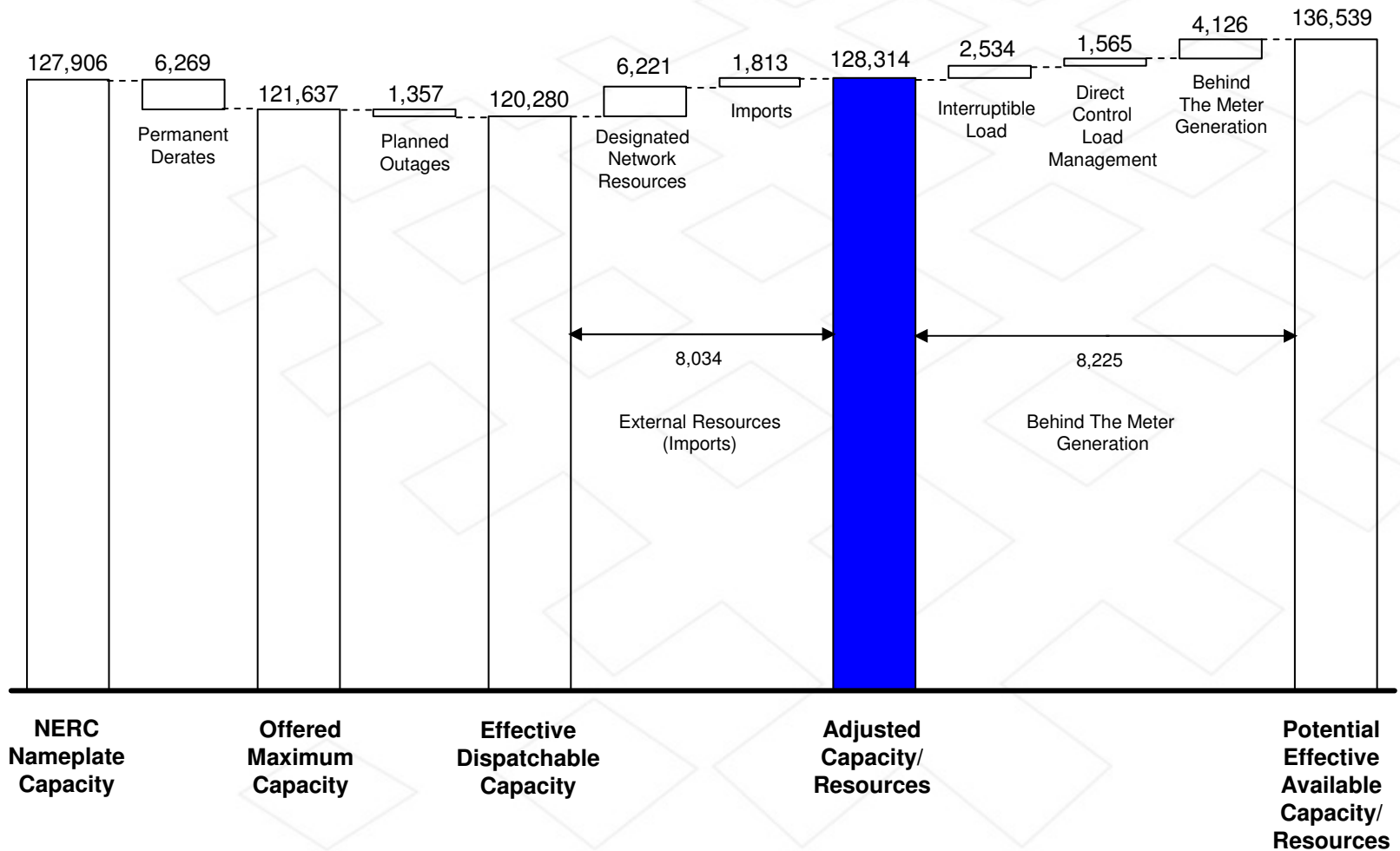
Scenario	Load (GW)	Effective Margin (%)
Low Load	109 GW	25.1%
Mid Load	113 GW	14.8%
High Load	117 GW	5.3%

Midwest ISO Capacity Overview

Summer 2007



(MW)



Summary



- The ability for the Midwest ISO to meet summer load is dependent on a number of key variables, namely:
 - Forced outages
 - Weather conditions
 - Derates
 - Imports and exports
 - Transmission constraints and trapped generation
- The Midwest ISO has taken the lessons learned from Summer 2006 and improved operating tools, processes/procedures and coordination with the Balancing Authorities
- In addition, the Midwest ISO has been recognized as exceptionally effective in ensuring and protecting the reliability of the electric system (as shown by NERC EOE)
- These better tools and processes/procedures, with the full support of the Midwest ISO stakeholders, can be applied directly this summer