

**TAC RELIABILITY AND  
OPERATIONS SUBCOMMITTEE  
Planning Criteria Review  
Report to ERCOT Board**

**Austin, TX  
August 16, 2011**

**Kenneth A. Donohoo, P.E.**  
Chairperson  
Oncor Electric Delivery Company LLC

# ROS Effort

- **Part of Holistic Solution (ERCOT Board Directive)**
- **Transmission Planning Process is Superior to Other Regions and Continues to Improve**
- **Goal is Consistent Operations and Planning Environments**
- **Transmission Planning Criteria**
  - Defines Minimum Reliability Planning Requirements
  - Incorporates NERC Planning Standard
  - ROS Review, Clarify and Update
- **Planning Data is Consistent with Operations Data**
  - Significant Nodal Planning Go-Live Effort

# ESTIMATED CONGESTION COSTS

## Top Ten Binding Each Month

DEC 2010	JAN 2011	FEB 2011	MAR 2011	APR 2011	MAY 2011	JUL 2011
21,805,811	31,295,778	122,383,944	19,252,807	39,629,295	73,222,698	50,733,613

**Subtotal \$358,323,946**

Source: Monthly ERCOT System Planning Report to ROS  
 Estimated Congestion Cost (Shadow Price X Limit)  
 Does not include some Congestion Costs during EEA Events

# TRANSMISSION PLANNING SENSITIVITIES

- **Highest – Generation Commitment/Dispatch**
  - Existing Generation
  - Forced Outages/Derates
  - Renewable Variability
  - Future Interconnections & Mothball/Retirements
  - Environmental Limitations
- **Higher – Transmission Topology**
  - Out of Service/Clearances
  - Ratings
  - Impedance
- **High – Load MW & Mvar**
  - Location and Coincidence
  - Distance From Generation

# ROS Effort

- **Transmission Planning Criteria Clarification/Improvement**
  - Thermal Generation Unavailability
    - Forced Outages/Derates
    - Ancillary Service
    - Environmental Limits
  - Wind
    - Low/High
    - Off Peak
    - Unavailability
  - Operational Constraints/Limits
  - Transmission Maintenance Outages
  - Autotransformer Outages
  - Dynamic Line Ratings
  - Load Variability

# ROS Effort

- **Autotransformer Outages**
  - Eight to Twelve Weeks to Replace
    - DOT Transportation Permit Process
    - May require additional station improvements
  - Units require 18 to 24 months to Build
- **Load Variability**
  - 50% Percentile
    - Normal Weather High Temp 104 Degrees F
  - 90% Percentile
    - High Temp 107 Degrees F
    - Low Temp 8 Degrees F

# ROS Effort

- **Transmission Cost Impact**
- **Very Rough Estimates**
  - Additional Autotransformers
    - DFW area 6 to 10 Additional 345/138 kV Autotransformers
    - \$50 to \$100 Million
  - Three to Five year acceleration of Transmission Projects
  - New Projects
  - More Dynamic Reactive Devices