SPP Regional Trustee Update

September 2010
NERC Planning Committee

October 25, 2010

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Electricity Sub-Sector Coordinating Council (ESCC) – Strategic Roadmap

- ESCC was approved by BOT in May 2010 this, dissolved ESSG
- Members
  - NERC BOT
  - NERC CEO – chair
  - Five – CEO level exec from stakeholders
  - CIPC chair
- Focus of ESCC
  - Develop strategies enhance reliability and resiliency
  - Mobilize the industry

Electricity Sub-Sector Coordinating Council (ESCC) – Strategic Roadmap

- Develop Strategic Road Map to replace the Bulk Power System Infrastructure Policy Statement
- Key Elements:
  - Vision and Goals
  - Risk Landscape
  - Focus on HILF
  - Low or unknown probability
  - National security
  - Severe Impact Risk Priorities
  - Coordinated physical attack or cyber attack on control systems
  - Severe geomagnetic disturbance

High Impact Low Frequency Event Risks

- BOT approved HILF report in May
  - NERC Technical Committees directed to address 19 proposed actions in development of Action Plan / Committees and staff to prioritize.
- Desired outcome is broad industry support and action in this area.
  - This effort is important to position NERC in front of these issues
  - The messaging of the risk is as important as the action to deal with the risks
  - Leverage industry experience on event recovery
- Scenarios
  - Coordinated Cyber, Physical, & Blended Attacks
  - Pandemics
  - Electromagnetic Events
- Leadership is looking for approval at the November BOT meeting.
- A concern raised by the PC is that
  - We need to define where we are going with this effort and have a better understanding on the Cost/Benefit.

Spare Equipment Database Task Force

- The Planning Committee approved the formation of this Task Force
  - TF has an aggressive work plan to meet 4 times/month until task is complete (end of 2010)
  - There is congressional review and potential action to develop an equipment database if the industry does not move forward.
- The purpose of the Spare Equipment Database Task Force (SEDTF) is to develop a whitepaper with recommendations/conclusions on spare equipment availability requirements, along with database specifications.
  - NERC is looking to populate the database through a NERC Data Authorization request (Rule 1600 of the Rules of Procedure) with spare equipment vital to the recovery process of the bulk power system from physical attacks

Geomagnetic Disturbance Task Force.

- The Planning Committee approved formation of the Geomagnetic Disturbance Task Force.
  - Requested a more specific scope be developed before December
- General Scope:
  - Severe-impact geomagnetic disturbance events present risks and vulnerabilities that may not be fully addressed for HILF events in conventional bulk power system planning, design, and operating processes.
  - The Geomagnetic Disturbance Task Force (GMDTF) will develop a technical white paper describing the evaluation of scenarios of potential GMD impact, identifying key bulk power system parameters under those scenario conditions, and evaluating potential reliability implications of these incidents. Based on these technical foundation elements, identify potential mitigation, recovery, planning, and operational approaches that mitigate this risk.

Reliability Assessments

- Approved the three reliability assessments
- 2009/2010 Post-Winter Operational Reliability Assessment
  - Lessons Learned
    - Short-term Operational Strategies to Manage Extreme Weather Conditions
    - Improvements needed for short-term forecasts
    - Processes needed to update system models throughout the day to reflect new forecasts
    - Monitoring Wind Output
      - Day-ahead wind forecasts critical to commit resources for ancillary services
      - Without proper forecasts and tools, system operators will be required to maintain additional upward and downward flexibility on an ongoing basis

Reliability Assessments

- 2010 Scenario Reliability Assessment Report: Potential Impacts of Environmental Regulations: Early Fossil-Fired Unit Retirements; Phase I: Impact on Planning Reserve Margins
  - Analyze potential EPA regulations- air and water
    - General concern with the impact on generation retirement – study does not address any potential CO2 regulation
  - 4 – Specific regulations analyzed with a strict and moderate interpretation
    - Clean water 316b – cooling water
    - CCR
    - CATR
    - MACT
  - Key observations
    - Combined effects can have a significant impact on Planning Reserve Margins
    - 316b, individually has the largest impact on reserve margins
    - Greatest risk is the short term 2015 for planning reserve margins – must meet all rules (combined)

Reliability Assessments

- 2010 Long-Term Reliability Assessment (Highlights)
  - The economic recession and continued advancement of demand-side management leads to decreased demand projections and higher overall reserve margins.
    - 2010 peak demand down 4.1% from last year's projections; 7.8 % from 2008 projections
    - Lower growth rate when compared to 2008 and 2009
  - An unprecedented change in the generation fuel mix is expected during the next ten years which includes significant increases in new gas-fired, wind, solar, and nuclear generation. Very little coal projected to come online (less than 4 GW)
    - 10 GW of new nuclear capacity projected by 2019
    - 34 GW of new gas-fired generation Planned; 13 GW Conceptual
    - 20 GW of new wind capacity expected on-peak (42 GW nameplate)
    - 13 GW of new solar capacity (California)

Reliability Assessments

- 2010 Long-Term Reliability Assessment (Highlights)
  - Vital bulk power transmission development begins to take shape.
    - 24,000 miles of Planned Transmission
    - An additional 12,000 miles of Conceptual Transmission
    - 50% transmission projected to maintain reliability; 27% for renewable/variable generation
  - Cross-industry communication and coordination is key to successful planning and operations.
    - Consistent modeling of remote resources
    - Uncertainty of sustained participation in DR
    - Diminishing Frequency Response
    - Changing resource mix
    - Transmission operations with/when vital transmission elements are out of service for upgrades
    - Impacts of resource mix changes to system stability and frequency response

Event Analysis

- Goal of Event Analysis
  - Promote increased reliability of the BES
  - Promote and enhance a culture of Reliability Excellence
  - ERO/industry wide – learning organization
- Five event categories
  - Level 1 - low impact/single element outage
  - Level 5 – High impact load of 10,000 MW of load and or generation
- Analysis
  - What
  - Why
  - Lessons
  - Gap in standards/compliance
  - Corrective actions
  - Themes

Event Analysis

- Aggressive reporting < 5 days (initial who/what/where) and a follow-up report with lessons learned completed quickly after initial report
- Systematic and predictable with the registered entities being increasingly self-critical.
  - Encouraging the entity to establish a compliance liaison with the compliance organization (internal and external)
  - List all implicated standards/requirement associated with the event
  - Written analysis
  - Use the IRAC method – issue, rules, analysis, conclusion
- Benefits
  - Greater consistency, predictability and transparency
  - Lessons learned
  - Helps develop desired behaviors and culture

Event Analysis

- Reliability Excellence-what does it look like?
  - Engrained behaviors
  - Best practices
  - Compliance margin
  - Continuous improvement
- Next Steps
  - Early October – webinar/workshop(s) for industry stakeholders
  - Mid October – process finalized for field test
  - ~January 2011 – new event analysis process in operation; required changes to Rules of Procedure initiated