NERC/SERC Planning Standards on Generation Modeling

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Overview

• Purpose

• NERC Reliability Standards:
  
  
  

• Summary
Purpose

• To ensure that accurate information on generator data/models is available/provided for performing steady state and dynamic transmission system performance studies

• Discuss NERC Reliability Standards and SERC Supplements pertaining to generation modeling

• Review compliance requirements

• Discuss the process to exchange information and resolve issues
Model Validation

August 10, 1996 post-disturbance analysis
## 2006 Compliance Measurements

<table>
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<th>Standard</th>
<th>Description</th>
<th>Applicable to</th>
<th>Member Filing Requirements</th>
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<td>(2005)</td>
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<tr>
<td>MOD-013-0</td>
<td>Maintenance and Distribution of Dynamics Data Requirements and Reporting Procedures</td>
<td>Region (not monitored in 2006)</td>
<td>Documentation</td>
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MOD-012
Dynamic Data for Modeling and Simulation

- Provide equipment characteristics, system data, modeling and simulation data for performing dynamic/stability studies

- Dynamic Data Requirement includes:
  - Unit-specific dynamic data for generators and synchronous condensers, excitation systems, voltage regulators, governors, power system stabilizers
  - Data for SVC, HVDC, FACTS, Static Compensators
  - Electrical demand load characteristics as a function of frequency and voltage
  - Dynamic data consistent with load flow data
MOD-012 and 013
Dynamic Data for Modeling and Simulation

- Reference Document to these standards is SERC Supplement - System Modeling Data Requirements – (5/25/05)

- Full compliance requires:

  For Transmission Owner/Transmission Planner

  - Provide up to-date device specific dynamics data including SVC, HVDC, FACTS, STATCOM to the appropriate reporting entity

Demonstration of Compliance:

  - MOD-012 Letter of Certification
MOD-012 and 013
Dynamic Data for Modeling and Simulation

For Generator Owner/Resource Planner

– Reporting changes in equipment or settings for a generator, excitation system, or governing system and providing revised models

– Providing up to-date device specific dynamics data in accordance with the NERC Reliability Standard and SERC Supplement for generators and synchronous condensers

– Acknowledging all the model validation requirements as indicated on the letter of compliance

Demonstration of Compliance:

– MOD-012 Letter of Certification
• Purpose
To define regional procedures for SERC Generator Owners/Operators to address required verification of generator gross and net real and reactive power capability

• Responsible SERC Groups: DRS and GS

• Effective Dates:

MOD - 024 (Verification of Generator Gross and Net Real Power Capability)
– SERC Region: April 1, 2006
– SERC Generator Owners: January 1, 2007

MOD – 025 (Verification of Generator Gross and Net Reactive Power Capability)
– SERC Region: January 1, 2007
– SERC Generator Owners: January 1, 2008 through January 1,
• **Requirements:**
  – RRO shall establish and maintain procedures to address verification of generator gross and net Real Power/Reactive Power capability.
    - generating unit exemption criteria
    - periodicity and schedule of model/data verification reporting
    - information to be verified and reported:
      - Seasonal gross and net real power/reactive power capability
      - Real/Reactive Power Requirements for auxiliary loads
      - Method of verification, including date and conditions
• **Requirements (contd):**

  – RRO shall provide its generator gross and net Real/Reactive Power capability verification and reporting procedures, to GO’s, TO’s, PA’s and TP’s within 30 calendar days

  – The GO’s shall follow its RRO procedures for verifying and reporting its gross and net Real Power/Reactive Power capability

- Highlights:
  - Information for the new supplement was captured from the old SERC II B supplement – System Modeling Data Requirements for Generation Equipment
  - SERC II B supplement was a guideline while new supplement is a requirement/standard
  - Supplement requires annual verification of data and has to be reviewed every 5 years
  - New supplement is under second 45 day review period and comments are due by end of July, 2006
Summary

• Generator data is very critical in performing transmission reliability studies

• Letter will be sent out to all the plant managers to set up a process for information exchange between the plant and the Transmission Technical System Planning Group

• The main intent of this letter is to assist in,
  
  – Identifying a contact person at the plant
  – Developing a process between generator operator and planning personnel to exchange information and resolve issues
  – Addressing questions related to planning standards

• Entergy contact person:

  Ollie Burke, Manager, Transmission Services
  Phone Number: 985 901 2507 (temporary)
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Questions?