ATFNSDT Industry Conference

The Revised TPL Standards

October 10, 2007

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Agenda

- NERC Antitrust Compliance Guidelines
- ATFNSDT Roster
- Introductory Remarks – Dave Whiteley, NERC Exec. VP
- Objectives – John Odom, FRCC, ATFNSDT Chair
- Revised Standards Presentation – John Odom
- Q&A – All
- Concluding Remarks – John Odom

NERC Antitrust Compliance Guidelines

It is NERC's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or that might appear to violate, the antitrust laws.

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NERC Antitrust Compliance Guidelines

Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.

ATFNSDT Roster

- John Odom, FRCC (Chair)
- Bob Millard, RFC (Vice chair)
- Darrin Church, TVA
- Tom Gentile, National Grid
- Bill Harm, PJM
- Doug Hohlbaugh, FirstEnergy
- Bob Jones, Southern
- Brian Keel, SRP
- Tom Mielnik, MidAmerican
- Bernie Pasternack, AEP
- Bob Pierce, Duke
- Paul Rocha, CenterPoint
- Chifong Thomas, PG&E
- Yury Tsimberg, Hydro One
- Jim Useldinger, KCPL
- Bob Williams, FMPA

ATFNSDT Observers

- Doug Powell, Entergy
- Hari Singh, ATC
- Bob Snow, FERC
- NERC Staff Coordinator – Ed Dobrowolski

Introductory Remarks

Dave Whiteley, NERC Exec. VP

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Drafting Team Objectives

John Odom, Chair of ATFNSDT

FRCC – Manager of System Planning

Drafting Team Objective

Create a new standard that:

1. Has clear, enforceable requirements
2. Is not a Least Common Denominator standard
3. Addresses the issues raised in the SAR and issues raised by FERC and others

Drafting Team Objective

Industry Consensus on Final Draft

1. This draft is a starting point to help team build that consensus
2. The team recognizes that this draft needs improvement in many areas
3. Everyone on the team does not agree with everything in this draft
4. The team agrees that we need industry input before we proceed

Drafting Team Objective

By posting this draft, the team is soliciting all comments including where you:

1. Agree or disagree with the performance requirements
2. Believe the language is not clear
3. Agree or disagree with a requirement or sub-requirement
4. Believe we need additional requirements

Drafting Team Objective

Conference Call Objectives

1. Explain the structure of the proposed standard
2. Highlight key changes
3. Highlight areas needing further work
4. Clarify the intent of the drafting team

Drafting Team Objective

The call should not be used to:

1. Debate performance requirements
2. Tell the drafting team how much a particular requirement will cost
3. Debate whether the standard meets FERC orders

Please submit your written comments by October 26, 2007

The Revised TPL Standards

TPL-001-1

Replaces TPL-001-0, TPL-002-0, TPL-003-0 and TPL-004-0

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The Revised TPL Standards

- During this presentation we will reference the following documents:
  1. Draft standard (TPL-001-1)
  2. Existing standards
     (TPL-001-0 – TPL-004-0)
  3. Comment Form
- It will be helpful for you to have them available for reference
- Review Q & A procedures

Process used by Drafting Team

- Divided the existing standards into component parts
- Addressed major parts of each area
- Started developing a common understanding
- Developed draft language and performance requirement tables

Structure of Draft Standard

- R1 – Modeling requirements
- R2 – Assessment and Corrective Plan requirements
- R3 – Steady State Analysis requirements
- R4 – Stability Analysis requirements
- R5 – Coordination requirements
- Two Performance Requirements tables

Structure of Draft Standard

- Steady State Performance Requirements table
- Stability Performance Requirements table
- Rationale for splitting the table
  - Different study methodologies
  - Different time horizons
  - Clearly identify which contingencies apply only to stability
  - Q31 addresses this change

Key changes in this draft

- What happened to Category A, B, C, and D contingencies?
  - Replaced them with Planning Events and Extreme Events
  - P1 – P9 and E1- E3
  - Team evaluated all of the contingencies in each Category and re-ordered some of the events on the contingency list

Key changes in this draft

- What happened to the footnotes?
  - The team has attempted to minimize the use of footnotes by writing clear, concise requirements
  - Not 100% effective, but much closer
- "Applicable" was removed in front of Equipment Ratings in the Performance Requirements Tables

New Definitions

- Created 11 new definitions
- Seeking written comments
  - Is a new definition needed?
  - Does the proposed definition create concerns with other standards?
  - Do you agree with the proposed definitions?
- Highlighted definitions

New Definitions

- Planning Assessment
  - Compared to analysis and study
  - Existing Standard confuses the terms and this draft attempted to clarify the differences
- Consequential Load Loss and

  Non-Consequential Load Loss

Key Topics

- Event versus Elements
  - Draft standard addresses events and clarifies that simulations should remove all elements that will be removed with the event
- Different requirements for 300kV and above
  - P2, P3, P5 and P7

Key Topics

- Plant Stability
  - Explicitly addressed (see Q32)
  - Limited requirements to new generators and areas with material change
- Short Circuit
  - Required Annually
  - Supported by current and past studies

Performance Requirement Changes

- For Q20 – Q23, the Comment form asks: *Do you agree that Non-Consequential Loss of Load should not be permitted for the following events?*
- For Q24 – Should the outage of an EHV non-bus tie breaker with an internal fault have a higher performance requirement than other breakers?

Performance Requirement Changes

- For Q25 – P3-1: 300 kV and above
  1. Loss of a generator
  2. Loss of a transmission circuit
  3. Loss of a transformer
     (with low side above 300 kV)
  4. Loss of a bus

     AND

     Stuck non-bus tie breaker above 300 kV

Non-Consequential Load Loss is not allowed

Performance Requirement Changes

- For Q26: Relatively high probability event

  P4-1: Loss of generator *followed by system adjustment*, followed by the loss of another generator

System adjustment - the system is re-dispatched to meet load (automatic and/or manual) and any other adjustments to get ready for the next contingency

Lose next generator & Non-Consequential Load Loss is not allowed

Performance Requirement Changes

- For Q27 – Q29: Relatively high probability events

  Loss of generator *followed by system adjustment*, followed by the loss of

  - P4-2 – monopolar DC line
  - P4-3 – loss of Transmission circuit
  - P4-4 – loss of a transformer

Non-Consequential Load Loss is not allowed

- Q29 – Error on original comment form corrected and re-posted to remove reference to voltage

Performance Requirement Changes

- For Q30: P2-3 Loss of a single pole of a DC line allows interruption of firm transactions, if transaction is dependent on the faulted DC line

  Seeking written comments

Performance Requirement Changes

- For Q33: TPL-004-0 (D-10) required evaluation of the Loss of all generating units at a station, however, the standard was silent about whether this situation should be evaluated as a Stability Study
- This draft does not require the stability analysis of all units tripping simultaneously

Performance Requirement Changes

- For Q34: Draft standard requires load models to include the dynamic affects of induction motors
- For Q35: General question about allowable generator adjustments for single and multiple Contingencies

Generation Runback and Tripping

- Drafting Team has had considerable debate about the use of System Protection Systems (SPS), Remedial Action Schemes (RAS) or manual adjustments or tripping of generators
- R3.5 allows automatic or manual runback (reductions in output) for any contingency

Generation Runback and Tripping

- R3.6 allows generator tripping for multiple contingencies
- R3.6 also proposes to allow generator tripping for single contingencies under certain conditions
  - To be defined (Q38 – Q40)
  - Provide written comments
- WECC will be submitting an Interconnection variance

Regional Variances

- Q41 – Written comments on where Regional Variance(s) would be required

Sensitivity Studies

- Firm obligations plus a portfolio of other analyses are necessary
- This issue still requires a significant effort from the Drafting Team
- This draft requires sensitivity studies for Near Term Horizon for:
  - Steady State Analysis
  - Stability Analysis
- See Q12 – Q15

Corrective Action Plans

- Expands on the existing standards
  - Requires consideration of DSM
  - Requires evaluation of corrective action plans to ensure that they resolve the potential violations and don't create other problems (R2.7.2)
  - Requires the planner to document their criteria for "committed" and "planned" projects (R2.7.3)
- See Q16 – Q19

Implementation Plan

- All drafting teams are required to develop an implementation plan, but the plan for this standard has not yet been started
- The team understands that there will need to be time for entities to construct transmission to comply with more stringent performance requirements
- An implementation plan will be developed for the next posting

Question and Answer Session

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