

Phase III-IV Planning Standards Field Tests

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Overview

- Meeting purpose
- Background on the Phase III & IV standards
- What is a field test?
- Review of the 4 Standards being field tested
- Field Test details
- Field Test schedule
- Field Test deliverables



Purpose

- At the end of the meeting you should know:
 - What standards will be field tested
 - What documents you need to prepare
 - Who you will go to for answers
 - What is the schedule for submitting documents
 - What will happen to the documents you submit



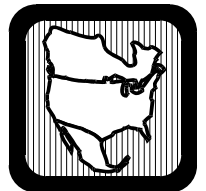
Background on the Phase III & IV Standards

- 42 Planning Measurements (compliance templates) and associated standards never completed the “field test – comment – revision – approval” process
- NERC Board Resolution 10/15/04
 - Complete translation to Reliability Standards ASAP
- Drafting Team of 25+ technical experts started working 1/24/05
- 4 standards left to be field tested – all others completed up to balloting



Background on the Phase III & IV Standards

- Phase 3&4 SDT work to date
- Comments and conforming changes
- Concerns as a basis for field test
 - Practicality of methods
 - Can regions reach agreement?
 - Should some requirements be NERC-wide?
 - Can generators follow regional requirements without risk to equipment?
 - Do requirements achieve desired results?



What is a Field Test?

- Answers questions **before** standard is completed on any part of standard
- These field tests need to answer:
 - Do the requirements support the purpose?
 - Are the requirements technically feasible?
 - Are the requirements comprehensive enough?
 - Are there requirements assigned to the Region that could be applied NERC-wide?
 - Can you measure compliance without undue additional cost?



Four Standards being Field Tested

- PRC-019 - Generator Coordination Information
- PRC-024 - Generator Performance During Excursions
- MOD-026 - Generator Excitation System Verification
- MOD-027 - Generator Frequency Response Verification



PRC-019

Generator Coordination Information

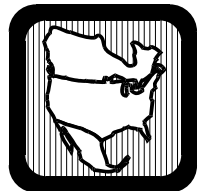
- **Applicability & Requirements:**
 - Generator Owner - Verify that voltage regulator controls and limit functions are coordinated with the generator's capabilities and protective relays
- **Challenges:**
 - How long does this coordination take?
 - What are the obstacles to this coordination?
 - Do the measures work?



PRC-024

Generator Performance During Excursions

- **Applicability & Requirements:**
 - Region establish & distribute requirements for generators to remain connected during system frequency & voltage excursions and coordination with transmission protective systems
 - Generator Owner & Transmission Owner follow Regional requirements
- **Challenges:**
 - Can the requirements be met?
 - Can compliance with the requirements be measured?



MOD-026

Generator Excitation System Verification

- **Applicability & Requirements:**
 - Region establish & distribute procedures to address verification & reporting
 - Generator Owner to follow Regional procedures for verifying and reporting
- **Challenges:**
 - Does verification result in improved models?
 - Can the processes for verification be consistent within a Region?
 - Should there be a single verification process across all Regions?



MOD-027

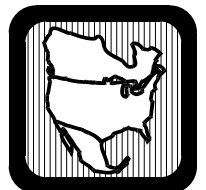
Generator Frequency Response Verification

- **Applicability & Requirements**
 - Region establish & distribute procedures to address verification & reporting
 - Generator Owner to follow Regional procedures for verifying and reporting
- **Challenges:**
 - Does verification result in improved models?
 - Can the processes for verification be consistent within a Region?
 - Should there be a single verification process across all Regions?



Field Test Details

- Monthly conference calls with participants
 - Report concerns and challenges
 - Identify requirements that need to be modified
- Summary report compiled at end of field test
- No non-compliance sanctions



Field Test Schedule

- Key factors:
 - Regional requirements in time for maintenance period
 - Generators complete by late spring 2007
 - All field test results by 6/1/07
 - Monthly update calls
 - Single region
 - Possible multi-region
 - Late summer face to face with all regions



Field Test Schedule for PRC-024, MOD-026, MOD-027

- Jun-Oct '06:
 - RROs requirements for PRC-024, MOD-026 and MOD-027
- Nov-Dec '06:
 - Compliance reviews for measurability
 - Owners review for feasibility; practicality
 - SDT – adjust requirements if needed
- Jan-May '07:
 - Owners attempt to comply with RRO requirements
- Jun-Jul '07:
 - Post results of field tests
 - Revise standards & repost for comment



Field Test Schedule for PRC-019

- Jun '06 – May '07:
 - Generators conduct verification studies
 - Compliance reviews for measurability
 - Owners review for feasibility; practicality
 - SDT – adjust requirements if needed
- Jun-Jul '07:
 - Post results of field tests
 - Revise standards & repost for comment



Field Test Deliverables

- RRO to deliver Regional Requirements or Procedures for Verification & Reporting of:
 - Generator excitation system models and data
 - Generator unit frequency response
 - Generator voltage regulator controls and limit functions are coordinated with the generator's capabilities and protective relays
 - Generator will remain connected during system frequency & voltage excursions
 - Exemption criteria for generators that don't have to comply with the above verifications



Field Test Deliverables

- Generator Owners Provide Evidence to Show:
 - Voltage regulator controls and limit functions are coordinated with the generator's capabilities and protective relays
 - Generator can remain connected during system frequency & voltage excursions
 - Generator is coordinated with transmission protective systems
 - Generator excitation system data verified
 - Generator frequency response verified



Field Test Deliverables

- Transmission Owners Provide Evidence to Show:
 - Transmission protection coordinated with generator protection



Field Test Value

- Blackout concerns for modeling
- Test of a process for elevating “fill-in the blank” standards



Questions?

