

**Background Information for Second Posting of Phase III & IV Standards:**

The Phase III & IV drafting team divided its Standards into two sets. Set One was posted from September 1 through October 17, 2005; Set Two is being posted from October 19 through December 3, 2005.

**The Standards Included in Set Two Are:**

- EOP-005-1 System Restoration Plans
- MOD-013-1 Maintenance and Distribution of Dynamics Data Requirements and Reporting Procedures
- MOD-016-1 Actual and Forecast Demands, Net Energy for Load, Controllable DSM
- MOD-026-1 Verification of Generator Excitation Systems and Voltage Control Model Data
- MOD-027-1 Verification and Status of Generating Unit Frequency Response
- VAR-001-1 Voltage and Reactive Control
- VAR-002-1 Generator Operation for Maintaining Network Voltage Schedules
- VAR-003-1 Assessment of Reactive Power Resources

**Major Changes and Outstanding Issues with Set Two of the Phase III & IV Standards**

***EOP-005 — System Restoration Plans***

The changes to this standard are mostly minor revisions in the choice of words to improve clarity and some re-sorting in the sequence of the new requirements added to this Version 0 Standard.

Some commenters indicated that the 'Phase III & IV Measures' requirements should be in a 'new' standard, not in embedded in an existing Version 0 Standard. The Phase III & IV Measures that were added to EOP-005 were IVAM2 and IVAM3:

- M2. Demonstrate through simulation or testing that a blackstart generating unit can perform its function
- M3. Diagram the number, size, and location of system blackstart generating units and the initial transmission switching requirements.

The merger was proposed on the basis that the Measurement requirements were part of "blackstart plans" that are part of an overall restoration plan. The team was aware that related Planning Measurements IV.A.M1, "Establish, maintain, and document a Regional blackstart capability plan" and IV.A.M4, "Documentation of blackstart generating unit test results", had previously been translated to approved Version 0 Standards EOP-007 and EOP-009, respectively.

A number of comments received on proposed EOP-005-1 indicated that EOP-005-1 would be difficult to implement because not all the requirements have associated measures and compliance elements. The drafting team is interested in your feedback on a suggestion that the drafting team move the IV.A.M2 and M3 into a new Version 1 Standard.

***MOD-016 — Actual and Forecast Demands, Net Energy for Load, Controllable DSM***

There were numerous errors in the posted version of the first draft of this standard. There were several requirements in the first draft that went beyond the scope of the SAR for Phase III & IV and changes made to existing Version 0 Requirements that were beyond the scope of the SAR. The drafting team pared down this standard so that the second draft of MOD-016 is the Version 0 MOD-016 with changes for the addition of IIDM2 to return the revised standard to within the scope of the Phase III & IV SARs.

***MOD-026 — Verification of Generator Excitation Systems and Voltage Control Model Data and***

***MOD-027 — Verification and Generator Unit Frequency Response***

The Drafting Team subdivided the Regional Reliability Organization's requirements from MOD-023 and added the requirements into the associated standards (MOD-026 and MOD-027). Now MOD-026 and MOD-027 each includes the Regional Reliability Organization's requirement to develop a procedure and the Generator Owners requirement to follow that procedure. One of the reasons the drafting team made this change was to make the balloting easier and to ensure that field testing of some measures won't hold up the entire sequence of standards.

The Drafting Team is recommending field testing for both MOD-026 and MOD-027 before these standards are finalized. There were several comments about the levels of non-compliance in the first draft of these standards, and the drafting team is asking stakeholders to make suggestions on appropriate levels of non-compliance that are both motivational and equitable. The drafting team removed the levels of non-compliance from the second draft of these standards, and will add this section into the standards following field testing and review of stakeholder suggestions.

***MOD-026 — Verification of Generator Excitation Systems and Voltage Control Model Data***

The original planning measure (IIBM6) required the following:

**M6.** Generation equipment owners shall verify the dynamic model data for excitation systems (including power system stabilizers and other devices, if applicable) at least every five years. **Design data for new or refurbished excitation systems shall be provided at least one year prior to the in-service date with updated data provided once the unit is in service.** Open circuit test response chart recordings shall be provided showing generator field voltage and generator terminal voltage. (Brushless units shall include exciter field voltage and current.

The Drafting Team moved the requirements for verifying the dynamic model data and for providing evidence of an open circuit test into MOD-026, and recommends that the requirement (highlighted in yellow above) to provide design data for new or refurbished excitation systems be added to MOD-013. The proposed change to MOD-013 will be posted with Set Two of the Phase III & IV Standards.

***VAR-001 — Voltage and Reactive Control***

The drafting team dropped two requirements from this standard – R10 and R11.

R10 was dropped for two reasons – first, the Transmission Operator Certification Standard requires that the TOP have agreements in place with its Generator Operators. Beyond that, the procedures in R10 require the Generator Operator to produce documentation that isn't essential for reliability.

R10. Each Transmission Operator with synchronous generation connected to its system shall provide to the Generator Operator procedures that shall:

R10.1 Require the Generator Operator to provide summary reports showing the number of hours each synchronous generator did not operate in the automatic voltage control mode during a specified time period.

R10.2 Require the Generator Operator to provide logs containing the date, duration, and reason for each period when a synchronous generator was not operated in the automatic voltage control mode.

R10.3 Require the Generator Operator to retain the above information for 12 rolling months.

R10.4 Specify criteria by which generators are to be exempted from the above requirements.

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R11 was dropped for three reasons – first, the Transmission Operator Certification Standard requires that the TOP have agreements in place with its Generator Operators. Second, the procedures in R11 duplicate the same performance requirements for the Generator Operator in VAR-002. Third, the data being requested is already required to be provided in MOD-010.

R11. The Transmission Operator shall have, and shall provide to the Generator Operator, procedures instructing Generator Operators to provide tap settings, available tap ranges, and impedance data for generator step-up and auxiliary transformers.

R11.1 When mutually agreed to tap changes are necessary, the Transmission Operator shall provide documentation to the Generator Operator specifying the required tap changes and technical justification for these changes.

R11.2 The Transmission Operator procedures shall address generating unit exemption criteria (including any that may apply to nuclear units).

### ***VAR-003 — Assessment of Reactive Power Resources***

While not specifically highlighted in the last posting, R1 was added to the 1st posting as a result of the Blackout recommendations.

Several comments suggested different approaches to the content of this standard. Some suggested that additional details be added to this standard to identify more specifically the method and criteria to be used in conducting the assessment – similar to TPL-001. Others suggested that the content of this standard be added to the TPL series of standards. Others suggested that this standard should really be an assessment of voltage stability limits. For now, the drafting team has refined the requirements in the standard and has retained the requirements in VAR-003. If you feel strongly that the drafting team should take a different approach to the content of VAR-003, please specify your preference on the Comment Form that is posted with the revised set of standards.

### **Definitions:**

The drafting team did not include any new definitions or any modifications to definitions in Set Two of the Phase III & IV Standards.

### **Field Testing and Effective Dates:**

Most of the comments submitted on field testing indicated either a need to delay full implementation of the standards to give entities time to acquire and install equipment or to develop processes to meet compliance. Although these are not necessarily reasons to conduct field testing, the drafting team did agree that the processes needed to meet compliance may not be in place and some may not be completely agreed upon at this time.

In most cases, the drafting team used these comments to propose effective dates for the individual standards that reflect consideration of the time entities need to acquire and install equipment or to develop processes to meet compliance.

For MOD-026 (Verification of Generator Excitation Systems & Voltage Control Model Data,) and MOD-027 (Verification and Status of Generating Unit Frequency Response), the drafting team is recommending field testing to give entities an opportunity to identify and test processes that can be used to achieve compliance.

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The drafting team is recommending a field test of MOD-026 involving at least one unit for each Generator Owner, to gain experience in conducting identified verifications.

The drafting team is recommending a limited field test of MOD-027 to give Regions time to develop a process and methods of verification of generating unit frequency response. The field test would involve some Regions for at least one year on a voluntary basis. Following the field test, the Region's procedures written to support this standard are likely to change.

### **Consider Changes When Making Comments**

The drafting team asks you to consider your acceptance of the changes made to Set One of the Phase III & IV Standards when you respond to the questions in the associated Comment Form.