135 FERC ¶ 61,061
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

18 CFR Part 40

[Docket No. RM09-9-000; Order No. 751]

Version One Regional Reliability Standards for Facilities Design, Connections, and Maintenance; Protection and Control; and Voltage and Reactive

(Issued April 21, 2011)

AGENCY: Federal Energy Regulatory Commission.

ACTION: Final Rule.

SUMMARY: Under section 215 of the Federal Power Act, the Commission hereby approves four revised regional Reliability Standards developed by the Western Electricity Coordinating Council and approved by the North American Electric Reliability Corporation, which the Commission has certified as the Electric Reliability Organization responsible for developing and enforcing mandatory Reliability Standards. These regional Reliability Standards have been designated by the Western Electricity Coordinating Council as FAC-501-WECC-1 – Transmission Maintenance, PRC-004-WECC-1 – Protection System and Remedial Action Scheme Misoperation, VAR-002-WECC-1 – Automatic Voltage Regulators, and VAR-501-WECC-1 – Power System Stabilizer. Reliability Standard FAC-501-WECC-1 addresses transmission maintenance for specified transmission paths in the Western Interconnection. Reliability Standard PRC-004-WECC-1 addresses the analysis of misoperations that occur on transmission

and generation protection systems and remedial action schemes in the Western Interconnection. Reliability Standard VAR-002-WECC-1 is meant to ensure that automatic voltage regulators remain in service on synchronous generators and condensers in the Western Interconnection. Reliability Standard VAR-501-WECC-1 is meant to ensure that power system stabilizers remain in service on synchronous generators in the Western Interconnection. In addition, the Commission approves five new regional definitions applicable within the Western Interconnection.

EFFECTIVE DATE: This rule will become effective [insert date that is 60 days after publication in the **FEDERAL REGISTER**]

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SUPPLEMENTARY INFORMATION:

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

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Before Commissioners: Jon Wellinghoff, Chairman;
Marc Spitzer, Philip D. Moeller,
John R. Norris, and Cheryl A. LaFleur.

Version One Regional Reliability Standards for Facilities Design, Connections, and Maintenance; Protection and Control; and Voltage and Reactive

Docket No. RM09-9-000

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FINAL RULE

(Issued April 21, 2011)

1. Under section 215 of the Federal Power Act (FPA),[1] the Commission hereby approves four revised regional Reliability Standards developed by the Western Electricity Coordinating Council (WECC) and approved by the North American Electric Reliability Corporation (NERC), which the Commission has certified as the Electric Reliability Organization (ERO) responsible for developing and enforcing mandatory Reliability Standards. These regional Reliability Standards have been designated by WECC as FAC-501-WECC-1 – Transmission Maintenance, PRC-004-WECC-1 – Protection System and Remedial Action Scheme Misoperation, VAR-002-WECC-1 – Automatic

[1] 16 U.S.C. 824o (2006).

Voltage Regulators, and VAR-501-WECC-1 – Power System Stabilizer. Reliability Standard FAC-501-WECC-1 addresses transmission maintenance for specified transmission paths in the Western Interconnection. Reliability Standard PRC-004-WECC-1 addresses the analysis of misoperations that occur on transmission and generation protection systems and remedial action schemes in the Western Interconnection. Reliability Standard VAR-002-WECC-1 is meant to ensure that automatic voltage regulators remain in service on synchronous generators and condensers in the Western Interconnection. Reliability Standard VAR-501-WECC-1 is meant to ensure that power system stabilizers remain in service on synchronous generators in the Western Interconnection. In addition, the Commission approves five new regional definitions applicable within the Western Interconnection.

I. Background

A. Mandatory Reliability Standards

2. Section 215 of the FPA requires a Commission-certified ERO to develop mandatory and enforceable Reliability Standards, which are subject to Commission review and approval. Once approved, the Reliability Standards may be enforced by the ERO, subject to Commission oversight, or by the Commission independently.[2]

[2] 16 U.S.C. 824o(e)(3).

3. Reliability Standards that the ERO proposes to the Commission may include Reliability Standards that are proposed to the ERO by a Regional Entity to be effective in that region.[3] A Regional Entity is an entity that has been approved by the Commission to enforce Reliability Standards under delegated authority from the ERO.[4] When the ERO reviews a regional Reliability Standard that would be applicable on an Interconnection-wide basis and that has been proposed by a Regional Entity organized on an Interconnection-wide basis, the ERO must rebuttably presume that the regional Reliability Standard is just, reasonable, not unduly discriminatory or preferential, and in the public interest.[5] In turn, the Commission must give "due weight" to the technical expertise of the ERO and of a Regional Entity organized on an Interconnection-wide basis.[6]

[3] 16 U.S.C. 824o(e)(4).

[4] 16 U.S.C. 824o(a)(7) and (e)(4).

[5] 18 CFR 39.5 (2010).

[6] 16 U.S.C. 824o(d)(2).

4. In Order No. 672, the Commission urged uniformity of Reliability Standards, but recognized a potential need for regional differences.[7] Accordingly, the Commission stated that:

> As a general matter, we will accept the following two types of regional differences, provided they are otherwise just, reasonable, not unduly discriminatory or preferential and in the public interest, as required under the statute: (1) a regional difference that is more stringent than the continent-wide Reliability Standard, including a regional difference that addresses matters that the continent-wide Reliability Standard does not; and (2) a regional Reliability Standard that is necessitated by a physical difference in the Bulk-Power System.[8]

B. Western Electricity Coordinating Council

5. On April 19, 2007, the Commission accepted delegation agreements between NERC and each of eight Regional Entities.[9] In its order, the Commission accepted

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[7] *Rules Concerning Certification of the Electric Reliability Organization; Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, 71 FR 8662 (Feb. 17, 2006), FERC Stats. & Regs. ¶ 31,204, at P 290, *order on reh'g*, Order No. 672-A, 71 FR 19814 (Apr. 18, 2006), FERC Stats. & Regs. ¶ 31,212 (2006).

[8] *Id.* P 291.

[9] *North American Electric Reliability Corp.*, 119 FERC ¶ 61,060, at P 432 (2007).

WECC as a Regional Entity organized on an Interconnection-wide basis. As a Regional Entity, WECC oversees transmission system reliability in the Western Interconnection. The WECC region encompasses nearly 1.8 million square miles, including 14 western U.S. states, the Canadian provinces of Alberta and British Columbia, and the northern portion of Baja California in Mexico.

6. In June 2007, the Commission approved eight regional Reliability Standards for WECC including the currently-effective WECC PRC-STD-001-1, PRC-STD-003-1, PRC-STD-005-1, VAR-STD-002a-1 and VAR-STD-002b-1.[10] The Commission directed WECC to develop certain modifications to WECC PRC-STD-001-1, PRC-STD-003-1, PRC-STD-005-1, VAR-STD-002a-1 and VAR-STD-002b-1, as identified by NERC in its filing letter for the current standards.[11] For example, the Commission determined that: (1) regional definitions should conform to definitions set forth in the NERC Glossary of Terms Used in Reliability Standards (NERC Glossary), unless a specific deviation has been justified; and, (2) documents that are referenced in the Reliability Standard should be attached to the Reliability Standard. The Commission also found that it is important that regional Reliability Standards and NERC Reliability Standards achieve a reasonable

[10] *North American Electric Reliability Corp.*, 119 FERC ¶ 61,260 (2007).

[11] *Id.*

level of consistency in their structure so that there is a common understanding of the elements.

C. Proposed Regional Reliability Standards

7. On March 25, 2009, NERC submitted a petition (NERC Petition) to the Commission seeking approval of four WECC regional Reliability Standards.[12] The four proposed WECC regional Reliability Standards are designated as FAC-501-WECC-1, PRC-004-WECC-1, VAR-002-WECC-1 and VAR-501-WECC-1.[13] In its petition, NERC explains that the four proposed regional Reliability Standards are meant to replace certain currently-effective regional Reliability Standards:

- FAC-501-WECC-1 is intended to replace the current approved WECC PRC-STD-005-1;
- PRC-004-WECC-1 is intended to replace WECC PRC-STD-001-1 and WECC PRC-STD-003-1;
- VAR-002-WECC-1 is intended to replace WECC VAR-STD-002a-1; and
- VAR-501-WECC-1 is intended to replace WECC VAR-STD-002b-1.

[12] *See* 18 CFR 39.5(a) (requiring the ERO to submit regional Reliability Standards on behalf of a Regional Entity).

[13] The proposed regional Reliability Standards are not attached to the Final Rule. They are, however, available on the Commission's eLibrary document retrieval system in Docket No. RM09-9-000 and are posted on the ERO's web site, *available at*: http://www.nerc.com.

NERC states that the NERC board of trustees approved the proposed regional Reliability Standards on October 29, 2008, on the condition that WECC address certain shortcomings raised during the comment periods in the next revision of the Reliability Standards.

8. NERC requests an effective date for FAC-501-WECC-1, VAR-002-WECC-1 and VAR-501-WECC-1 of the first day of the first quarter after Commission approval. For PRC-004-WECC-1, NERC requests an effective date of the first day of the second quarter after approval by the Commission.

9. On December 17, 2010, the Commission issued a Notice of Proposal Rulemaking (NOPR) in which it proposed to approve the four revised regional Reliability Standards. In addition, under section 215(d)(5) of the FPA, the Commission proposed to direct WECC, working through its standards development process, to develop modifications to these regional Reliability Standards.[14]

10. As indicated in Appendix A, fourteen entities filed comments in response to the NOPR.

[14] *Version One Regional Reliability Standards for Facilities Design, Connections, and Maintenance; Protection and Control; and Voltage and Reactive*, Notice of Proposed Rulemaking, 75 FR 80,397 (Dec.22, 2010), FERC Stats. & Regs. ¶ 32,667 (2010).

II. Discussion

11. As discussed below, we approve Reliability Standards FAC-501-WECC-1, PRC-004-WECC-1, VAR-002-WECC-1, and VAR-501-WECC-1 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. We find that the revised WECC Reliability Standards are more stringent than the corresponding NERC Reliability Standards either because they address issues not covered in the requirements of the corresponding NERC Reliability Standards or because they offer more detailed requirements than the corresponding NERC Reliability Standards. For these same reasons, we find that the requirements of these revised regional Reliability Standards are not redundant of the requirements of the corresponding NERC Reliability Standards. Moreover, we find that these revised WECC Reliability Standards are sufficient to maintain the reliability of the Bulk-Power System in the Western Interconnection.

12. We also find that the revised regional Reliability Standards offer several improvements over the currently-effective regional Reliability Standards. Consistent with the Commission's directives in its June 2008 order, the revised regional Reliability Standards replace the former sanctions table with violation risk factors and violation severity levels. The revised regional Reliability Standards also remove compliance-related information and elements from the requirements.

13. In addition, we direct WECC to address a concern pertaining to the applicability of FAC-501-WECC-1 and PRC-004-WECC-1, which reference tables of major

transmission paths and remedial action schemes posted on the WECC website. We also adopt our NOPR to direct NERC to remove the WECC regional definition of Disturbance from the NERC Glossary to ensure consistency between the regional and NERC defined terms.

A. FAC-501-WECC-1 Transmission Maintenance

NERC Petition

14. In its petition, NERC explained that proposed FAC-501-WECC-1 is intended to replace approved WECC PRC-STD-005-1. The proposed regional Reliability Standard would apply to transmission owners that maintain transmission paths listed in the table titled "Major WECC Transfer Paths in the Bulk Electric System" (WECC Transfer Path Table), which is no longer an attachment to the Reliability Standard but is maintained on the WECC website. Proposed FAC-501-WECC-1 contains three main provisions. Requirement R1 provides that each transmission owner must have a transmission maintenance and inspection plan, and each transmission owner must annually review and update as required its transmission maintenance and inspection plan. Requirement R2 states that each transmission owner must include specified maintenance categories[15] when developing its transmission maintenance and inspection plan. Requirement R3

[15] The maintenance categories to be included in the transmission maintenance and inspection plan are included in Attachment 1 of FAC-501-WECC-1 – "Transmission Line and Station Maintenance Details."

states that each transmission owner must implement and follow its transmission maintenance and inspection plan.

15. In its petition, NERC recommended approval of FAC-501-WECC-1, stating that the proposed regional Reliability Standard addresses matters that the NERC Reliability Standard does not. Specifically, according to NERC, FAC-501-WECC-1 requires, for specified transmission paths, a highly detailed maintenance and inspection plan for all transmission and substation equipment components, beyond the relay and communication system maintenance and testing required by the corresponding NERC Reliability Standard.[16]

NOPR Proposal

16. In the NOPR, the Commission proposed to approve FAC-501-WECC-1 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. The Commission stated that, as explained by NERC, proposed FAC-501-WECC-1 appears to be more stringent, by virtue of its requirement for a highly detailed maintenance and inspection plan, compared to the corresponding NERC Reliability Standard.

17. The Commission pointed out that, in approving the currently-effective WECC PRC-STD-005-1, the Commission directed WECC to make certain modifications to the regional Reliability Standard. The Commission stated that the proposed regional

[16] NERC Petition at 11, 14.

Reliability Standard appeared to address these directives by no longer referencing any WECC forms, and removing text regarding the Compliance Monitoring Period. The Commission also pointed out that the proposed regional Reliability Standard no longer refers to a regional definition of Disturbance, which conflicted with the definition of Disturbance in the NERC Glossary. Since the term is not included in any of the proposed regional Reliability Standards, the Commission proposed to direct NERC to remove this regional definition from the NERC Glossary of Terms upon Commission approval of FAC-501-WECC-1. The proposed regional Reliability Standard also removes the sanctions table and includes violation risk factors, violation severity levels, measures and time horizons, as directed by the Commission. The Commission proposed to find that the proposed removal of the sanctions table and inclusion of violation risk factors, violation severity levels, measures and time horizons, appeared generally consistent with the Commission's directives, and signify meaningful improvement. Accordingly, the Commission proposed to approve FAC-501-WECC-1 and NERC's petition to retire currently-effective WECC PRC-STD-005-1.

18. The Commission also sought comment on two issues regarding FAC-501-WECC-1: (1) the use of the WECC Transfer Path Table and (2) the use of the term "system operating limit," as discussed below.

1. WECC Transfer Path Table

19. Regional Reliability Standard FAC-501-WECC-1 applies to transmission owners that maintain transmission paths listed in the most current WECC Transfer Path Table provided on WECC's website. The table currently posted on WECC's website identifies the same 40 major paths as the table attached to the currently-effective regional Reliability Standard, WECC PRC-STD-005-1.

NOPR Proposal

20. In the NOPR, the Commission expressed concern that, by referencing the WECC Transfer Path Table posted on the WECC website, the applicability of FAC-501-WECC-1 could change without review and approval by NERC and the Commission. The Commission explained that the possibility for the applicability of the Reliability Standard to change at any time could create confusion for entities that need to comply as well as any compliance or enforcement staff trying to determine which entities are responsible for complying with the Reliability Standard. Accordingly, the Commission proposed to direct WECC to develop a modification to FAC-501-WECC-1 to address this concern.

21. The Commission offered examples of how WECC might address the Commission's concern. First, the Commission suggested that WECC could include its criterion for identifying and modifying major transmission paths listed in the WECC Transfer Path Table and make an informational filing each time it makes a modification to the table. A second option the Commission proposed was that WECC file its criterion

with the Commission and post revised transfer path tables and associated catalogs on its website before they become effective with concurrent notification to NERC and the Commission. Alternatively, the Commission suggested that the Regional Entity could include the WECC Transfer Path Table as an attachment to the modified Reliability Standard. In this way, the Commission would be able to verify that the Regional Entity is applying the requirements of FAC-501-WECC-1 in a just and reasonable manner.

Comments

22. WECC, as well as Bonneville, PacifiCorp, and SDG&E, support the Commission's proposal to require WECC to provide greater certainty regarding the applicability of FAC-501-WECC-1 based on the WECC Transfer Path Table. WECC supports the Commission's second approach and suggests that the Commission direct WECC to file its criterion for identifying and modifying major transmission paths listed in the tables. Moreover, WECC commits to publicly post any revisions to the table on the WECC website with concurrent notification to the Commission, NERC, and industry. WECC explains that posting the WECC Transfer Path Table to the website is preferred because the current WECC Regional Reliability Standards development process and subsequent NERC and FERC approval processes do not result in timely updates to the table.

23. Likewise, Bonneville, PacifiCorp, and SDG&E support the Commission's proposal to require WECC to develop and file criterion to clarify how major transmission

paths are included in or excluded from the WECC Transfer Path Table. Bonneville believes that filing such criterion would provide transparency for transmission owners that are affected by changes to the table. PacifiCorp comments that WECC should not be required to include the criterion or the WECC Transfer Path Table as an attachment to the Reliability Standard because it would require a modification to the standard and, thus, added delay, every time WECC proposed a change to the criteria or the table. By contrast, the Bureau of Reclamation recommends that the Commission approve the proposed Reliability Standard and direct WECC to append the current WECC Transfer Path Table.

Commission Determination

24. Consistent with our NOPR proposal and WECC's comments the Commission directs WECC to file, within 60 days from the issuance of this Final Rule, its criterion for identifying and modifying major transmission paths listed in the WECC Transfer Path Table. Moreover, the Commission accepts WECC's commitment to publicly post any revisions to the WECC Transfer Path Table on the WECC website with concurrent notification to the Commission, NERC, and industry. We believe that this process balances the interests of WECC in developing timely revisions to the WECC Transfer Path Table with the need for adequate transparency for transmission owners that are affected by changes to the WECC Transfer Path Table.

2. System Operating Limits

25. WECC proposes to replace references to Operating Transfer Capability limits in WECC PRC-STD-001-1 with System Operating Limits in FAC-501-WECC-1. Currently, WECC determines transfer capability based on a "rated system path" methodology and the WECC Transfer Path Table and associated catalog identify the facilities that make up each rated system path. Unlike a System Operating Limit, WECC's definition of Operating Transfer Capability limits is restricted to direct or parallel transmission elements between or within specific transmission operators. Moreover, the rating of a System Operating Limit, which is based on an operating criterion that is either thermally (based on facility ratings) or stability-based (based on transient stability, voltage stability, or system voltage limits), is the first element to calculate in order to determine the Operating Transfer Capability limit rating.

NOPR Proposal

26. In the NOPR, the Commission expressed concern that the terms Operating Transfer Capability limit and System Operating Limit were not interchangeable. Specifically, the Commission expressed concern that the introduction of the NERC Glossary definition of System Operating Limit in Requirement R1 of the proposed regional Reliability Standard could create confusion regarding which transmission owners are required to maintain a transmission maintenance and inspection plan. The Commission expressed further concern that, by using the term System Operating Limit,

Requirement R1 could apply to more transmission facilities than identified in the WECC Transfer Path Table and associated catalog.

Comments

27. WECC, supported by SDG&E, urges the Commission to approve FAC-501-WECC-1 as filed. NERC and several other commenters support the Commission's proposal to approve FAC-501-WECC-1.[17] WECC agrees that there are slight differences between the definitions of Operating Transfer Capability limits and System Operating Limits but contends that the intent and the effect is the same and the applicability is clear. WECC explains that both limits are calculated using the same methodologies and result in the same values. WECC further explains that it made this change to address the Commission's concerns related to the proliferation of regional terms. Moreover, WECC states that, beginning with the 2008-2009 winter System Operating Limit seasonal study report and continuing to the present, WECC has defined the limits calculated as System Operating Limits. WECC states that it uses these seasonal studies to formulate the correct System Operating Limits for transmission paths in the West.

28. SDG&E and TANC support the use of System Operating Limits instead of Operating Transfer Capability limits. SDG&E comments that the methodology for determining System Operating Limits is the same as for Operating Transfer Capability

[17] *E.g.* Bonneville, Reclamation, PacifiCorp.

limits and that there is no confusion related to the use of System Operating Limit in Requirement R1. TANC comments that an interpretation of Requirement R1 that requires transmission owners of major paths to be responsible for maintaining and inspecting transmission facilities owned by other entities whose facilities may be necessary to maintain System Operating Limits associated with the major path would be infeasible, overly burdensome on the individual owners of the major paths and inconsistent with the spirit of the proposed regional Reliability Standard as written. TANC suggests that using the term Operating Transfer Capability limit as a substitute for System Operating Limit may resolve any confusion, as could a modification clarifying that each major path transmission owner's responsibility is to inspect and maintain its own facilities.

29. Bonneville and PacifiCorp also support the use of the term System Operating Limit instead of the term Operating Transfer Capability because both terms result in the same requirement that maintenance be performed to ensure that each path is capable of operating up to the path's limit. Nevertheless, Bonneville and PacifiCorp comment that Requirement R1 is unclear as to which facilities are covered and who is responsible for the maintenance of those facilities. Bonneville contends that the transmission owner should be responsible only for the facilities it owns, and the standard should make this clear. PacifiCorp suggests that Requirement R1 should be modified to reflect that transmission owners should have a transmission maintenance and inspection plan

detailing their requirements "that apply to all transmission facilities *identified by the Transmission Operator of the transmission path as* necessary" for System Operating Limits associated with each of the transmission paths identified in the WECC Transfer Path Table.

30. By contrast, in light of the concerns raised by the Commission in the NOPR, CDWR asks the Commission to consider maintaining current Reliability Standard PRC-STD-005-1.

Commission Determination

31. The Commission finds that the Regional Entity has adequately explained its intended use of System Operating Limits as a replacement for Operating Transfer Capability limits. As WECC and others have described, transmission owners within the Western Interconnection will continue to identify capability limits associated with their own paths listed in the WECC Transfer Path Table using the same methodology as they have used under the currently-effective WECC PRC-STD-001-1. We accept the substitution of terms based on WECC's explanation that all it has done is to replace references to Operating Transfer Capability limits with System Operating Limits in order to address the Commission's concern regarding the proliferation of regional terms.

32. In response to our concern that use of the term System Operating Limit could expand the applicability of FAC-501-WECC-1 to transmission facilities that are not listed in the WECC Transfer Path Table, we accept WECC's explanation that the applicability

of the Reliability Standard is clear. Consistent with comments filed by Bonneville and PacifiCorp, we find that it would be unreasonable to interpret FAC-501-WECC-1 as requiring transmission owners to be responsible for maintaining and inspecting transmission facilities related to System Operating Limits on paths that they do not own. Nevertheless, we believe that this could be clearer in the language of Requirement R1. Accordingly, we recommend that WECC consider the comments of Bonneville, PacifiCorp and TANC when it develops future modifications to FAC-501-WECC-1.

3. Summary

33. We adopt our NOPR proposal and approve FAC-501-WECC-1 as just, reasonable, not unduly discriminatory or preferential and in the public interest. We find that the revised regional Reliability Standard is more stringent than the corresponding NERC Reliability Standard, PRC-005-1, by virtue of its requirement for a highly detailed maintenance and inspection plan for all transmission and substation equipment components associated with transmission paths identified in the WECC Transfer Path Table.

B. PRC-004-WECC-1

NERC Petition

34. Regional Reliability Standard PRC-004-WECC-1 is intended to replace two currently-effective WECC Reliability Standards, PRC-STD-001-1 and PRC-STD-003-1. In its petition, NERC explained that PRC-004-WECC-1 is more stringent than the

currently-effective corresponding NERC Reliability Standards because the former requires that all transmission and generation protection system and remedial action scheme misoperations on major WECC transfer paths be analyzed and mitigated within a specific timeframe. In contrast, corresponding NERC Reliability Standard PRC-003-1 requires Regional Entities to establish procedures for review, analysis, reporting, and mitigation of transmission and generation protection system misoperations, but it does not specifically address the owners of the transmission and generation facilities. NERC also explained that NERC Reliability Standard PRC-004-1 has requirements for protection system misoperations, but does not provide for the additional requirements included in PRC-004-WECC-1.[18]

35. Regional Reliability Standard PRC-004-WECC-1 contains three provisions. Requirement R1 provides that "System Operators and System Protection Personnel" of transmission owners and generator owners must analyze all protection system and remedial action scheme operations. Requirements R1.1 and R1.2 identify time limits for the review and analysis of transmission element tripping, remedial action scheme

[18] *See* NERC Petition at 11, 19-20. In Order No. 693, the Commission found that PRC-003-1 was a fill-in-the-blank Reliability Standard in part because its requirements apply to the Regional Reliability Organizations, now called Regional Entities, which the Commission was not persuaded NERC can enforce a Regional Entity's compliance with a Reliability Standard. *Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, FERC Stats. & Regs., Regulations Preambles 2006-2007 ¶ 31,242, at P 1460-1461, *order on reh'g*, Order No. 693-A, 120 FERC ¶ 61,053 (2007).

operations and protection systems. Requirement R2 identifies actions required by transmission owners and generator owners for each protection system or remedial action scheme misoperation, including identifying timelines for removing the equipment that failed from service. Requirement R3 states that transmission owners and generator owners must submit an incident report for each misoperation or repair of equipment that misoperated.

36. Both the currently-effective and proposed regional Reliability Standards apply to transmission owners and transmission operators. However, PRC-004-WECC-1 also applies to generator owners that own facilities listed in the the table titled "Major WECC Remedial Action Schemes" (WECC Remedial Action Schemes Table), which is available on WECC's website.[19] In addition, WECC proposes four new regional definitions for Functionally Equivalent Protection System, Functionally Equivalent Remedial Action Scheme, Security-Based Misoperation and Dependability Based Misoperation.

NOPR Proposal

37. The Commission proposed to approve PRC-004-WECC-1 as just, reasonable, not unduly discriminatory or preferential, and in the public interest.[20] The Commission also

[19] *See* proposed regional Reliability Standard PRC-004-WECC-1, Section 4 (Applicability).

[20] NOPR, FERC Stats. & Regs. ¶ 32,667 at P 32.

proposed to approve NERC's petition to withdraw currently-effective WECC PRC-STD-001-1 and WECC PRC-STD-003-1. The Commission explained that PRC-004-WECC-1 appears more stringent than the corresponding NERC PRC-004-1. Moreover, PRC-004-WECC-1 addresses Commission directives to develop modifications to the currently-effective regional Reliability Standards.

38. The Commission noted that, in approving the currently-effective WECC PRC-STD-001-1 and WECC PRC-STD-003-1, the Commission directed WECC to make certain modifications in developing replacement Reliability Standards. To address these directives, WECC no longer references any WECC forms and the text regarding the compliance monitoring period has been removed from the proposed Standard. In addition, the revised regional Reliability Standard does not reference the regional definition of Disturbance, which did not match the NERC definition of Disturbance in the NERC Glossary. The revised regional Reliability Standard also removes the definition of Business Day. Since these terms are not included in any of the existing or proposed regional Reliability Standards, the Commission proposed to direct NERC to remove these regional definitions from the NERC Glossary upon approval of PRC-004-WECC-1. The revised regional Reliability Standard also removes the sanctions table and includes violation risk factors, violation severity levels, measures and time horizons. The Commission commended WECC for addressing these directives.

39. The Commission sought comment on two issues concerning PRC-004-WECC-1: (1) the use of the WECC Transfer Path Table and the WECC Remedial Action Schemes Table to define applicability and (2) the need for the four new regional definitions to be added to the NERC Glossary of Terms.

1. WECC Transfer Path Table and WECC Remedial Action Schemes Table

40. Similar to regional Reliability Standard FAC-501-WECC-1, discussed above, the applicability of Reliability Standard PRC-004-WECC-1 is dependent upon references to the WECC Transfer Path Table and the WECC Remedial Action Schemes Table, which WECC posts on its website. The NOPR raised the same applicability concerns as discussed above in the context of FAC-501-WECC-1. In turn, WECC offered to file the criteria for identifying paths and remedial action schemes associated with these tables.

Commission Determination

41. Consistent with our NOPR proposal and WECC's comments the Commission directs WECC to file, within 60 days from the issuance of this Final Rule, its criteria for identifying and modifying major transmission paths listed in the WECC Transfer Path Table and major remedial actions schemes listed in the WECC Remedial Action Schemes Table. Moreover, the Commission accepts WECC's commitment to publicly post any revisions to the WECC Transfer Path Table, WECC Remedial Action Schemes Table, and the associated catalogs on the WECC website with concurrent notification to the Commission, NERC, and industry. We believe that this process balances the interests of

WECC in developing timely revisions to the WECC Transfer Path Table with the need for adequate transparency for transmission owners that are affected by changes to the WECC Transfer Path Table and the WECC Remedial Action Schemes Table. Regional Definitions Associated With PRC-004-WECC-1

NERC Petition

42. The revised regional Reliability Standard includes four new regional definitions meant to apply only in WECC. Two of the proposed definitions (Functionally Equivalent Protection System and Functionally Equivalent Remedial Action Scheme) have added "functionally equivalent" to terms that already exist in the NERC Glossary.[21] In addition, WECC has developed two regional definitions for the term Misoperation, as it is defined in the NERC Glossary. NERC explains that the terms Security-Based Misoperations and Dependability-Based Misoperations are meant to address: (1) incorrect operation of a protection system (Security-Based Misoperation); and (2) absence of a protection system to operate (Dependability-Based Misoperation).

NOPR Proposal

43. In the NOPR, the Commission expressed concern about the unnecessary proliferation of glossary terms and whether the proposed WECC definitions were

[21] *See* NERC Glossary definitions for Protection System and Remedial Action Scheme.

unnecessary variations of terms already defined in the NERC Glossary.[22] With regard to the definitions of Functionally Equivalent Protection System and Functionally Equivalent Remedial Action Scheme, the Commission expressed concern that the new definitions do not add any further clarity to the NERC Glossary terms. Accordingly, we sought an explanation from WECC and other interested commenters regarding whether these new terms are more inclusive than the corresponding NERC Glossary definitions and, if so, how.

44. The Commission also noted that WECC proposes to define Functionally Equivalent Protection System as "[a] Protection System that provides performance as follows: Each Protection System can detect the same faults within the zone of protection …"[23] The Commission expressed concern that the meaning of the phrase "detect the same faults" was unclear in this definition. Accordingly, we sought comment on the meaning of the phrase "the same faults" within the definition.

45. With regard to the bifurcation of the term Misoperation, the Commission expressed concern that the two new regional definitions may be confusing because at least some of the requirements for each type of misoperation appear to overlap.

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[22] NERC Glossary of Terms used in Reliability Standards, *available at*: http://www.nerc.com/files/Glossary of Terms 2011Mar15.pdf.

[23] *See* Proposed Reliability Standard PRC-004-WECC-1, proposed definition of Functionally Equivalent Protection System.

Accordingly, we sought an explanation from WECC and other interested commenters regarding why these two new regional terms are necessary or desirable within the context of the proposed regional Reliability Standard, and how they will enhance reliability.

Comments

46. WECC, supported by SDG&E, contends that the addition of the terms Functionally Equivalent Protection System and Functionally Equivalent Remedial Action Scheme adds clarity because they apply only to a subset of protection systems and remedial action schemes and are thus less inclusive than the corresponding NERC Glossary definition. WECC explains that a Functionally Equivalent Protection System or Functionally Equivalent Remedial Action Scheme is a protection system or remedial action scheme that provides redundancy to the specific protection system or remedial action scheme that failed. WECC further explains that a Functionally Equivalent Protection System or Remedial Action Scheme is not identical to the one that misoperated but rather provides redundancy over the same part of the Interconnection as the remedial action scheme or protection system that misoperated. Finally, WECC explains that the phrase "detect the same faults" is intended to take on its plain meaning, i.e., that both protection systems (the primary and the functionally equivalent protection system) can detect and protect against the same problem on the system.[24]

[24] *See* WECC Comments at page 11.

47. Bonneville and PacifiCorp generally agree that the terms Functionally Equivalent Protection System and Functionally Equivalent Remedial Action Scheme are useful because they describe a protection system or remedial action scheme that is able to provide the necessary functionality of a protection system or remedial action scheme without the loss of any necessary dependability for the system. PacifiCorp further suggests that the Commission direct NERC to consider the development of a continent-wide definition of Functionally Equivalent Protection System and Functionally Equivalent Remedial Action Scheme.

48. WECC, supported by SDG&E, Bonneville, and PacifiCorp, contends that definitions of Security-Based Misoperation and Dependability-Based Misoperation should be retained because they provide clarity in the implementation of PRC-004-WECC-1. WECC states that these two definitions were developed recognizing that misoperations can be grouped into two types, incorrect operation and failure to operate. WECC explains that a Dependability-Based Misoperation occurs during a system fault, and its impact to the bulk electric system is minimal if other functionally equivalent redundancies exist to eliminate, or at least minimize, any impact from any single misoperation. By contrast, a Security-Based Misoperation isolates an element from the bulk electric system unnecessarily either when another protection system is already responding to contingency conditions or when noise in a communication system trips an element even though no fault occurred. WECC comments that PRC-004-WECC-1

therefore requires different actions based on which category of misoperation has occurred.

Commission Determination

49. In view of the comments supporting these regional definitions, the Commission accepts the four new defined terms to be applicable only in the Western Interconnection. However, similar to our policy set forth in Order No. 672 that favors the development of uniform Reliability Standards,[25] the Commission believes NERC, as a rule, should develop definitions that apply uniformly across the different Interconnections and strive to minimize the use of regional definitions and terminology.

50. We will not direct NERC to consider PacifiCorp's suggestion that the Commission direct NERC to consider the development of a continent-wide definition of functionally equivalent protection system and functionally equivalent remedial action scheme. We note that NERC has an ongoing project that could address this issue.[26] We encourage

[25] Order No. 672, FERC Stats. & Regs. ¶ 31,204 at P 290 ("The Commission believes that uniformity of Reliability Standards should be the goal and the practice, the rule rather than the exception. Greater uniformity will encourage best practices, thereby enhancing reliability and benefiting consumers and the economy").

[26] NERC Project 2009-07 Reliability of Protection Systems, *available at*: http://www.nerc.com/filez/standards/Project2009-07_Reliability_of_Protection_Systems.html.

NERC to consider the comments of PacifiCorp in this proceeding during the development of Project 2009-07 and encourage PacifiCorp to participate in this NERC project.

2. Summary

51. The Commission adopts its NOPR proposal to approve PRC-004-WECC-1 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. As discussed above, we direct WECC to file its criteria for identifying and modifying major transmission paths listed in the WECC Transfer Path Table and major remedial action schemes listed in the WECC Remedial Action Schemes Table. We also accept WECC's explanation regarding its need for the four new regional definitions to be added to the NERC Glossary of Terms.

C. VAR-002-WECC-1

52. Regional Reliability Standard VAR-002-WECC-1 applies to generator operators and transmission operators that operate synchronous condensers. Requirement R1 provides that each generator operator and transmission operator shall have automatic voltage regulators in service and in automatic voltage control mode for synchronous generators and synchronous condensers during 98 percent of all operating hours unless exempted by the transmission operator. Sub-requirements R1.1 through R1.10 detail the type of exemptions that the transmission operator may grant to the generator operator to excuse the generator from operating the automatic voltage regulator in automatic voltage control mode. Requirement R2 states that each generator operator and transmission

operator must have documentation identifying the number of hours excluded for each sub-requirement R1.1 through R1.10.

53. Consistent with the Commission directives, the revised regional Reliability Standard replaces the former sanctions table with violation risk factors, violation severity levels, measures and time horizons.[27] WECC also proposes a new glossary term, Commercial Operation, applicable only in the Western Interconnection.

NERC Petition

54. The NERC Petition requested Commission approval of VAR-002-WECC-1. In addition, the Petition explained that, during the standards development process, NERC expressed concern regarding two aspects of the regional Reliability Standard, and that WECC responded in writing to NERC's concerns. First, with regard to Requirement R1 of VAR-002-WECC-1, WECC explained that the requirement to keep automatic voltage regulators in service and in automatic voltage control mode during 98 percent of all operating hours is a translation of the limits set in the levels of non-compliance associated with the current regional Reliability Standard. [28] In addition, WECC explained that the

[27] *See North America Electric Reliability Corp.*, 119 FERC ¶ 61,260 at P 117.

[28] The levels of non-compliance assigned to the currently-effective regional Reliability Standard specify that there shall be a level 1 non-compliance if automatic voltage regulators are in service less than 98 percent but at least 96 percent or more of all hours during which the synchronous generating unit is on line for each calendar quarter.

two percent allowance provides more time to start up generating facilities when the automatic voltage regulators are not yet in voltage control mode and allows for evaluation when a generator operator responds to an unforeseen event.[29]

55. Second, NERC expressed concern regarding sub-requirement R1.1, which includes an exemption for units operating less than five percent of all hours during a calendar quarter, because the provision "excludes the hours attributed to the synchronous generator or condenser that operates for less than five percent of all hours during any calendar quarter."[30] WECC responded by explaining that (1) this exemption is a carryover from the currently effective regional Reliability Standard and (2) the five percent exclusion permits the continued practice of allowing the operation of peaking units without penalty for having an out-of-service automatic voltage regulator per the manufacturer's recommendations.[31]

NOPR Proposal

56. The Commission proposed to approve VAR-002-WECC-1 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. Further, the Commission proposed the concurrent retirement of currently-effective WECC VAR-STD-002a-1. The

[29] NERC Petition at 34-35.

[30] *Id*. at 34-35.

[31] *Id*. at 35.

Commission proposed to find that VAR-002-WECC-1 is more stringent than the corresponding NERC Reliability Standard. In addition, the Commission sought comment on several issues concerning VAR-002-WECC-1 including: (1) the automatic voltage regulator in-service requirement, (2) the exclusion of synchronous generators that operate less than five percent of all hours during a calendar quarter, (3) the replacement period for automatic voltage regulators, and (4) automatic voltage regulator performance.

1. Automatic Voltage Regulator In-Service Requirement

57. Requirement R1 of regional Reliability Standard VAR-002-WECC-1 provides that "Generator Operators and Transmission Operators shall have [automatic voltage regulators] in service and in automatic voltage control mode 98 [percent] of all operating hours for synchronous generators or synchronous condensers."[32] Requirement R1 then identifies ten circumstances in which a generator operator or transmission operator is excused from this requirement.

NOPR Proposal

58. In the NOPR, the Commission proposed to find that, by specifying the circumstances in which a generator operator or transmission operator is excused from operating with automatic voltage regulator in-service and in automatic voltage control mode, Requirement R1 is more stringent than the requirement in NERC VAR-002-1.1b.

[32] Regional Reliability Standard VAR-002-WECC-1, Requirement R1.

Nevertheless, the Commission expressed its concern that, where installed, automatic voltage regulators should be in-service at all times except in circumstances when the generator is operating at an output level that is not within the design parameters of the automatic voltage regulator or when operations of the automatic voltage regulator would result in instability. Accordingly, we sought comment on whether the Commission should direct WECC to develop a modification to the proposed regional Reliability Standard to address our concern. The Commission offered, for example, that WECC could develop a modification replacing the blanket two percent exemption with a list of specific exemptions that would accommodate generating units that are starting up or responding to unforeseen events and are operating outside of applicable facility ratings.

Comments

59. WECC, supported by CDWR, urges the Commission to approve VAR-002-WECC-1 with its exemption from using automatic voltage regulators during two percent of all operating hours. WECC contends that this exemption is not new and is included in WECC VAR-STD-002a-1, which addresses automatic voltage regulators. WECC explains that the current regional Reliability Standards includes levels of non-compliance that assess no penalty for generator operators that operate with their automatic voltage regulators in service at least 98 percent of the time. WECC contends that moving this exemption from the levels of non-compliance to the revised requirement was necessary to

meet the Commission's violation severity level guideline 3, which states that violation severity levels "should not appear to redefine or undermine the requirement."[33]

60. WECC further contends that a directive reducing the two percent exemption will not increase the reliable performance of the Western Interconnection. WECC explains that the exemption is reasonable and a best business practice developed to enhance and protect reliability. WECC further explains that generator operators need the flexibility to take their automatic voltage regulator out of service when an operator is not comfortable with the performance of the automatic voltage regulator. WECC contends that requiring automatic voltage regulators to be in service 100 percent of all operating hours would be an onerous requirement that may, in fact, create a perverse incentive for generator operators to take their generation off-line rather than risk non-compliance with a more stringent requirement. Furthermore, WECC contends that the Commission's suggestion that WECC develop a list of specific exemptions is untenable. WECC explains that it is difficult to define all of the reasons why it may be necessary to take an automatic voltage regulator out of service unless the exclusions were written more broadly. WECC also contends that when a generator operator is responding to alarms, it may not have sufficient time to determine if the situation complies with a list of exemptions.

[33] WECC Comments at 15, *citing North American Electric Reliability Corp.*, 123 FERC ¶ 61,284, at P 32 (2008) (*Violation Severity Level Order*).

61. Although EPSA states that it supports the requirement that equipment such as automatic voltage regulators and power system stabilizers be available for a high percentage of the time a generator is in-service, EPSA urges the Commission to not mandate 100 percent availability for such ancillary equipment. EPSA contends that requiring equipment on generators to be available 100 percent of the time would not improve the reliability of the bulk electric system and would remove valuable generation from the grid, possibly due to what might be merely a minor problem associated with the ancillary equipment.

62. The Bureau of Reclamation comments that the NOPR and revised regional Reliability Standard do not use consistent terminology when referring to the operation of the automatic voltage regulator. The Bureau of Reclamation explains that the use of the terms "[automatic voltage regulator] in service" and "[automatic voltage regulator] in automatic voltage control mode" is misleading making it hard to determine the basis for compliance. The Bureau of Reclamation states that, in discussing this issue with members of the drafting team, the intent was to capture the hours the excitation system was in automatic voltage regulator mode but the language of the standard is unclear. The Bureau of Reclamation suggests that Requirement R1 of VAR-002-WECC-1 should state: "Generator Operators and Transmission Operators shall have the excitation system in [automatic voltage regulator] mode 98% of all operating hours for synchronous generators or synchronous condensers."

63. Mariner comments that there is an inadequacy in VAR-002-WECC-1. Mariner states that a voltage schedule is needed to appropriately program the automatic voltage regulator to operate in automatic voltage control mode. However, the continent-wide Reliability Standard VAR-001-1 allows transmission owners to provide either a voltage schedule *or* a reactive power schedule to the generator operators. Mariner comments that a reactive power schedule does not provide a generator operator with enough information to appropriately program the automatic voltage regulator to operate in automatic voltage control mode as required, such that the reactive power output must continuously be monitored and manually adjusted throughout the day, thereby defeating the purpose of the "automatic" voltage regulator. Mariner further states that operating with these continuous manual adjustments to maintain a constant reactive power output could actually harm the reliability of the system. Accordingly, Mariner recommends that the Commission remand regional Reliability Standard VAR-002-WECC-1.

Commission Determination

64. We recognize that the stated exemption from operating automatic voltage regulators during two percent of all operating hours is included in the levels of non-compliance associated with the currently-effective WECC VAR-STD-002a-1. We find that, by moving the exemption from the levels of non-compliance to the revised requirement, the revision is consistent with the Commission's guidelines on violation

severity levels.[34] We also accept that requiring an exhaustive list of exemptions could result in overly broad exemptions that could allow generator operators to operate without automatic voltage regulators for more than two percent of all operating hours. If this were to occur, reliability could be diminished.

65. The Commission understands that the purpose of the two percent exemption is to allow the generator operator to remove the automatic voltage regulator from service when the generator operator determines that automatic voltage regulator operation would jeopardize the generator or reliability of the Bulk-Power System. All hours included in the two percent exemption must be consistent with the purpose of the revised Regional Reliability Standard, which is to ensure the reliability of the Bulk-Power System within the Western Interconnection by ensuring that automatic voltage regulators on synchronous generators and condensers are kept in service and controlling voltage.[35] We

[34] *See Violation Severity Level Order*, 123 FERC ¶ 61,284 at P 32; s*ee also North American Electric Reliability Corp.*, 119 FERC ¶ 61,260 at P 109 (directing that a substantive compliance responsibility be set forth in the Requirement of a Reliability Standard); Order No. 693, FERC Stats. & Regs., Regulations Preambles 2006-2007 ¶ 31,242 at P 253 (stating "while Measures and Levels of Non-Compliance provide useful guidance to the industry, compliance will in all cases be measured by determining whether a party met or failed to meet the Requirement given the specific facts and circumstances of its use, ownership or operation of the Bulk-Power System").

[35] NERC states that WECC explained "the two percent allowance provides for time to start up generating facilities … It also allows for evaluation when the Generator Operators respond to unforeseen events." NERC Petition at 34. In addition, WECC states "Generator Operators need the flexibility to take either their [automatic voltage

(continued…)

will not direct WECC to modify the two percent exemption for automatic voltage regulator operation.

66. In response to the comments filed by the Bureau of Reclamation, we agree that there is a difference between the automatic voltage regulator being "in service" and the automatic voltage regulator being "in automatic voltage control mode." As the Bureau of Reclamation explained, modern excitation systems can include several control function modes, one of which is automatic voltage regulator mode. If the excitation controller is operating in automatic voltage regulator mode, then the generator is operating in automatic voltage control mode. If the excitation controller is operating in another mode, the generator is not operating in automatic voltage control mode. Accordingly, we believe that VAR-002-WECC-1 makes this distinction clear by requiring synchronous generators and synchronous condensers to have the automatic voltage regulator in service and in automatic voltage control mode.

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regulator] or [power system stabilizer] out of service when an operator is not comfortable with the performance of the [automatic voltage regulator] or [power system stabilizer]. … Furthermore, when a Generator Operator is responding to alarms, there is not sufficient time to determine if the situation complies with the Standard's exclusions. Giving the Generator Operator the time to evaluate the situation impacting the performance of an [automatic voltage regulator] or [power system stabilizer], rather than taking the generator out of service, provides for situational awareness and enhances reliability." WECC Comments at 15-16.

67. With regard to Mariner's concern, we note that WECC has an ongoing project to address this issue.[36] We encourage WECC to consider the comments of Mariner in this proceeding during the development of its Project WECC-0046 and encourage Mariner to participate.

2. Exclusion of Synchronous Generators that Operate Less than Five Percent of All Hours During a Calendar Quarter

68. Requirement R1.1 of regional Reliability Standard VAR-002-WECC-1 allows exclusion of any synchronous generator or synchronous condenser that "operates for less than five percent of all hours during any calendar quarter" from operating with automatic voltage regulator in service and in automatic voltage control mode. During the Reliability Standard development process of the revised regional Reliability Standard, NERC expressed concern regarding the exclusion of these hours.[37] WECC explained that the "exclusion below the five percent threshold during a calendar quarter permits the continued practice of allowing the operation of peaking units without penalty for having an out-of-service [automatic voltage regulator] per the manufacturer recommendations" since "[p]eaking units often operate, for short periods, at low megawatt levels (below

[36] WECC Project WECC-0046 – VAR-001-WECC-1 Voltage and Reactive Control can be followed at: http://www.wecc.biz/Standards/Development/Pages/default.aspx.

[37] NERC Petition at 34-35.

where manufacture[r]s recommend placing the [automatic voltage regulators] in-service)." [38]

NOPR Proposal

69. In the NOPR, the Commission observed that it appears that WECC developed the five percent threshold provision to account for out-of-service automatic voltage regulators per the manufacturer recommendations regarding automatic voltage regulator design limitations. The Commission expressed concern, however, that the provision is written more broadly than necessary. The Commission stated that it appears inefficient to allow an exemption for any synchronous generator or synchronous condenser that "operates for less than five percent of all hours during any calendar quarter" in order to address concerns about operation limits based on manufacture recommendations, and that such an exemption could potentially exempt other generator operators and transmission operators. Thus, the Commission sought comment on whether it should direct WECC to develop a modification through its Reliability Standards development process that addresses this concern. The Commission suggested that one reasonable solution would be to develop a replacement requirement that directly addresses the need for an exemption for peaking units operating automatic voltage regulators when necessary to

[38] *Id*. at 35.

satisfy manufacturer recommendations regarding the operation of an automatic voltage regulator.

Comments

70. WECC, supported by SDG&E, comments that the five percent exemption is not new and is included in the applicability sections of WECC VAR-STD-002a-1 and VAR-STD-002b-1. WECC contends that the retention of this exclusion in VAR-002-WECC-1 will not diminish the reliability of the bulk electric system in the Western Interconnection. WECC further contends that it would not be cost-effective for some older generators that are used for short periods to replace, repair, or upgrade their automatic voltage regulator. WECC contends that it is more likely that these generators would be retired rather than make such repairs and, thus, they would no longer be available during peak periods. Thus, WECC argues, removing the five percent exemption could have a negative impact on reliability.

71. EPSA supports an exemption from requiring ancillary equipment such as automatic voltage regulators on facilities that are online five percent or less of the time each year if the unit is not required to meet system operating limits or interconnection reliability operating limits.

Commission Determination

72. The Commission recognizes that an exclusion for synchronous generators or synchronous condensers that operate for less than five percent of all hours during a

calendar quarter from compliance with the requirement to have an automatic voltage regulator in service and in automatic voltage control mode exists as part of the "applicability" provision of currently-effective WECC VAR-STD-002a-1. We also understand that it may not be cost-effective for some older generators that are used only for short periods of time to replace, repair, or upgrade their automatic voltage regulator. The Commission, therefore, accepts this exclusion on the basis of WECC's explanation that the retention of this exclusion will not diminish the reliability of the bulk electric system in the Western Interconnection. Even with the additional stringency of the regional Reliability Standard, generator operators must still comply with the requirements of NERC VAR-002-1.1b, which requires generators with automatic voltage regulators to operate each generator in the automatic voltage control mode unless the generator operator has notified the transmission operator.

3. Automatic Voltage Regulator Replacement

73. Sub-requirement R1.6 of VAR-002-WECC-1 lengthens the automatic voltage regulator replacement timeline due to component failure from 15 months to 24 months "to accommodate design and procurement especially for nuclear units."[39] NERC supported the extension of the outage time frame for the automatic voltage regulators.

[39] NERC Petition at Exhibit C, "Consideration of Comments for VAR-002-WECC-1 – Automatic Voltage Regulator Comments were due January 2, 2008."

NOPR Proposal

74. The Commission, giving due weight to WECC and NERC, proposed to accept the Reliability Standard with this revision. Nevertheless, the Commission expressed concern that allowing an additional nine months of non-operation of an automatic voltage regulator is not necessary for many, if not most, units. The Commission commented that the additional replacement time could lead to a decrease in generation that can react in automatic voltage regulator mode. In the event of a contingency, this decrease in generation could have an impact on bulk electric system reliability. The Commission suggested that it may be appropriate for the Commission to direct WECC to develop a modification to this provision to address our concern. As an example, the Commission suggested that WECC could allow fifteen months for replacement with an opportunity to seek an extension up to nine months where justified. Alternatively, WECC could retain a fifteen month replacement period for non-nuclear generator units, and a twenty-four month replacement period for nuclear generator units. The Commission sought comment regarding the historical replacement period for nuclear and non-nuclear units, and the appropriateness of the Commission proposal.

Comments

75. WECC comments that it has gained considerable knowledge on this subject since its previous standard was approved by the Commission. WECC states that drafting team members reviewed replacement experiences for a number of different types of generators

and concluded that a 15 month replacement requirement was extremely tight. In addition, WECC states that because many automatic voltage regulators date back to the early 1970s or earlier, extensive refinements must be made to the design of the automatic voltage regulator and the excitation system to integrate an old analog system with a new digital system. WECC also points out that strict procurement regulations, contracting requirements, the limited number of suppliers, delivery, and installation time all make a 15 month deadline infeasible. WECC further contends that the number of units that are operating without an automatic voltage regulator in service at the same time due to component failure is typically very limited. Thus, WECC argues, the additional time allowed for replacement would have very little to no impact on the overall reliability of the bulk electric system.

76. EPSA also contends that 15 months is an insufficient period in which to require a generator to replace an automatic voltage regulator because of the length of the procurement period and the importance of fulfilling compliance requirements with respect to the replacement equipment. Accordingly, EPSA contends that the 24 month period represents an improvement that should be adopted by the Commission. SDG&E agrees that the replacement period should be extended to 24 months based on industry experience with these generator components.

Commission Determination

77. We recognize, as WECC points out, that replacing an old automatic voltage regulator may require significant refinements to the design of the automatic voltage regulator and the excitation system to integrate a new digital system with an existing analog system, thereby requiring additional time. We also recognize that, as WECC and EPSA explain, procurement periods for new automatic voltage regulators might require more than 15 months. Although we did not receive any specific details regarding historical automatic voltage regulator replacement timeframes, WECC states that the drafting team members reviewed replacement experiences for a number of different types of generators and concluded the 15-month replacement requirement was "extremely tight."[40] Based on these explanations, we approve the regional Reliability Standard with the modified provision, Requirement R1.6, which allows up to 24 months for replacing an excitation system due to component failure.

4. Automatic Voltage Regulator Performance

78. The current regional Reliability Standard provides that "[a]ll synchronous generators with automatic voltage control equipment shall normally be operated in voltage control mode and set to respond effectively to voltage deviations." The revised Reliability Standard VAR-002-WECC-1 removes this requirement.

[40] WECC Comments at 18.

NOPR Proposal

79. The Commission noted that the NERC Petition does not provide any explanation for, or potential impact of, removing the provision. Accordingly, the Commission sought further comment on the impact of removing this provision from the currently-effective WECC regional Reliability Standard. The Commission expressed concern that, by removing the requirement for automatic voltage regulators to respond effectively to voltage deviations, the proposed regional Reliability Standard would not require entities to assess the performance of the automatic voltage regulators to ensure they are appropriately responding to voltage deviations to support reliability of the Bulk-Power System.

Comments

80. WECC comments that it removed the requirement for generators with automatic control equipment to operate in automatic voltage control mode because NERC Reliability Standard VAR-002-1.1b already requires generator operators to operate each generator connected to the interconnected transmission system in the automatic voltage control mode unless the generator operator has notified the transmission operator. Thus, WECC contends, exclusion of this requirement from VAR-002-WECC-1 will have no impact on the reliability of the bulk electric system because generators must still comply with the requirements of NERC Reliability Standard VAR-002-1.1b. WECC further contends that including this requirement in the revised regional Reliability Standard

would unnecessarily expose entities in the West to the possibility of non-compliance with the same requirement in two different Reliability Standards.

81. The Bureau of Reclamation also contends that it is unnecessary to maintain a requirement for automatic voltage regulators to respond to voltage deviations. The Bureau of Reclamation explains that the requirement to ensure proper tuning and performance of automatic voltage regulators is covered under the MOD series of Reliability Standards, specifically MOD-012-1 and MOD-013-1.

Commission Determination

82. As WECC points out, Requirement R1 of NERC Reliability Standard VAR-002-1.1b requires generator operators to "operate each generator connected to the interconnected transmission system in the automatic voltage control mode (automatic voltage regulator in service and controlling voltage)." WECC explains that it understood the currently-effective regional requirement for all synchronous generators with automatic voltage control equipment to be normally operating in voltage control mode and set to respond effectively to voltage deviations to be duplicative of Requirement R1 of NERC Reliability Standard VAR-002-1.1b. The Commission believes that, if a generator operator with an installed automatic voltage regulator complies with the NERC requirement to have the generator in automatic voltage control mode, generators should be set to respond effectively to voltage deviations. Thus, we find that there will be no impact to the reliability of the bulk electric system if this provision is removed from the

regional Reliability Standard because the requirement remains enforceable under NERC Reliability Standard VAR-002-1.1.b.

83. The Commission disagrees with the Bureau of Reclamation's comment that NERC Reliability Standards MOD-012-0 and MOD-013-1 address requirements for ensuring proper tuning and performance of automatic voltage regulators.[41] The Commission agrees that the requirements in MOD-012-0 require entities to provide dynamic system modeling and simulation data, including data regarding "excitation systems, voltage regulators, turbine-governor systems, power system stabilizers, and other associated generation equipment" to the Regional Entities and NERC for use in reliability analysis of the interconnected transmission system.[42] These Reliability Standards do not require proper performance and tuning of an automatic voltage regulator, but the data required by NERC Reliability Standard MOD-012-0 could help identify improper performance of an automatic voltage regulator when employed in certain reliability analyses.

[41] Order No. 693 approved Reliability Standard MOD-012-0 as mandatory and enforceable. However, Order No. 693 deemed MOD-013-0 as a fill-in-the-blank Reliability Standard in part because its requirements apply to the Regional Reliability Organizations, now called Regional Entities, which the Commission was not persuaded NERC can enforce a Regional Entity's compliance with a Reliability Standard. *See* Order No. 693, FERC Stats. & Regs., Pregulations Preambles ¶ 31,242 at P 301.

[42] Reliability Standard MOD-013-1, Requirement R1.2.

84. Accordingly, in view of WECC's comments that NERC Reliability Standard VAR-002-1.1b subjects WECC generators to the requirement for generators to be normally operated "in voltage control mode and set to respond effectively to voltage deviations," and that a similar regional Reliability Standard requirement would be duplicative, we will not direct any modifications to VAR-002-WECC-1.

5. Summary

85. For the reasons discussed above, the Commission adopts its NOPR proposal to approve VAR-002-WECC-1 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. The Commission also approves NERC's petition to retire currently-effective WECC-VAR-STD-002a-1. Based on the comments received from WECC and other entities, we will not, at this time, direct any modifications to Reliability Standard VAR-002-WECC-1.

D. VAR-501-WECC-1

86. Regional Reliability Standard VAR-501-WECC-1 contains two requirements that are intended to ensure that power system stabilizers on synchronous generators are kept in service. Requirement R1 provides that each generator operator with a synchronous generator equipped with a power system stabilizer must have the power system stabilizer in service during 98 percent of all operating hours. NERC explains that a power system stabilizer is part of the excitation control system of a generator used to increase power transfer levels by improving power system dynamic performance. Sub-requirements

R1.1 through R1.12 set forth exceptions to the operating requirement in Requirement R1. Requirement R2 states that each generator operator must have documentation identifying the number of hours excluded for each sub-requirement R1.1 through R1.12.

NOPR Proposal

87. In the NOPR, the Commission proposed to approve VAR-501-WECC-1 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. The Commission also proposed to approve NERC's proposed retirement of currently-effective WECC VAR-STD-002b-1. Nevertheless, the Commission sought comment on certain provisions of VAR-501-WECC-1 including: (1) the power system stabilizer in-service requirement, (2) the exclusion of synchronous generators that operate for less than five percent of all hours during a calendar quarter, (3) the replacement period for power system stabilizers, and (4) power system stabilizer performance.

1. Power System Stabilizer In-Service Requirement

88. Requirement R1 of VAR-501-WECC-1 provides that "Generator Operators shall have [power system stabilizers] in service 98 [percent] of all operating hours for synchronous generators equipped with [power system stabilizers]."[43] Requirement R1 also sets forth twelve circumstances in which a generator operator is excused from this requirement.

[43] Proposed regional Reliability Standard VAR-501-WECC-1, Requirement R1.

NOPR Proposal

89. In the NOPR, the Commission observed that by specifying the circumstances in which a generator operator is excused from keeping its power system stabilizer in service, the proposed requirement appears to be more stringent than the currently-effective requirement in NERC Reliability Standard VAR-002-1.1b, which requires only that a generator operator notify its transmission operator when there is a change in status of its power system stabilizer. Nevertheless, the Commission commented that, where installed, power system stabilizers should be in-service at all times, equipment and facility ratings permitting, unless exempted by the transmission operator.

90. Similar to its concerns with automatic voltage regulators addressed in VAR-002-WECC-1, the Commission stated that an exemption to an in-service requirement might be appropriate to accommodate generating facilities when they are starting up or operating outside of their facility ratings. The Commission expressed concern, however, that the proposed regional Reliability Standard provides no limitation as to when generating units may use the two percent exemption. Accordingly, we sought comment on whether the Commission should direct WECC to develop a modification to the proposed regional Reliability Standard that would address our concern. The Commission suggested, as an example, that WECC could develop a modification to replace the blanket two percent exemption with a more specific list of exemptions that would

accommodate generating units that are starting up or are operating outside of applicable facility ratings.

Comments

91. WECC, supported by CDWR, urges the Commission to approve VAR-501-WECC-1 with its exemption for using power system stabilizers two percent of all operating hours. WECC comments that VAR-501-WECC-1 addresses an issue that is not covered by any NERC Reliability Standard. In addition, WECC contends that this exemption is not new and is included in WECC VAR-STD-002b-1, which addresses power system stabilizer operation. WECC explains that the current regional Reliability Standard includes levels of non-compliance that assess no penalty for generator operators that operate with their power system stabilizers in service at least 98 percent of the time. WECC contends that moving this exemption from the levels of non-compliance to the revised requirement was necessary to meet the Commission's violation severity level guideline 3, which states that violation severity levels "should not appear to redefine or undermine the requirement."[44]

92. WECC further contends that a directive reducing the two percent exemption will not increase the reliable performance of the Western Interconnection. WECC explains

[44] WECC Comments at 15, *citing Violation Severity Level Order*, 123 FERC ¶ 61,284 at P 32.

that the exemption is reasonable and a best business practice developed to enhance and protect reliability. WECC further explains that generator operators need the flexibility to take their power system stabilizers out of service when an operator is not comfortable with the performance of the power system stabilizer. WECC contends that requiring power system stabilizers to be in service 100 percent of all operating hours would be an onerous requirement that may, in fact, create a perverse incentive for generator operators to take their generation off-line rather than risk non-compliance with a more stringent requirement. Furthermore, WECC contends that the Commission's suggestion that WECC develop a list of specific exemptions is untenable. WECC explains that it is difficult to define all of the reasons where it may be necessary to take a power system stabilizer out of service. WECC also contends that when a generator operator is responding to alarms, it may not have sufficient time to determine if the situation complies with a list of exemptions.

93. The Bureau of Reclamation points out that three of the twelve exceptions for the in-service requirement concern the power output level of the generator: Requirement R1.4 concerns when the unit is operating in synchronous condenser mode; Requirement R1.5 concerns when the unit is generating less power than the design limit for effective power system stabilizer operation; and Requirement R1.6 concerns when the unit is passing through a range of output that is a known "rough zone." The Bureau of Reclamation comments that for most hydro generators the power system stabilizer is

always in-service but control of power system stabilizers is performed by the power system stabilizer controller, automatically engaging or bypassing the power system stabilizer when output reaches a certain level. The Bureau of Reclamation contends that, as hydro generators are commonly used for regulation and peaking, these generators could be passing through the power system stabilizer pre-programmed levels several times a day. The Bureau of Reclamation recommends that the Commission remand VAR-501-WECC-1.

Commission Determination

94. We accept the explanation of WECC and other supporting comments on this matter. We recognize that the stated exemption from operating power system stabilizers two percent of all operating hours is included in the levels of non-compliance associated with the currently-effective WECC VAR-STD-002b-1. Further, we find that, by moving the stated exemption from the levels of non-compliance measures to the revised requirement, the revision is consistent with the Commission's guidelines on violation severity levels and with our determinations in Order No. 693.[45] We also accept that

[45] *See Violation Severity Level Order*, 123 FERC ¶ 61,284 at P 32; s*ee also North American Electric Reliability Corp.*, 119 FERC ¶ 61,260 at 109 (directing that a substantive compliance responsibility be set forth in the Requirement of a Reliability Standard); Order No. 693, FERC Stats. & Regs., Regulations Preambles 2006-2007 ¶ 31,242 at P 253 (stating "while Measures and Levels of Non-Compliance provide useful guidance to the industry, compliance will in all cases be measured by determining

(continued…)

requiring an exhaustive list of exemptions could result in overly broad exemptions that could allow generator operators to operate without power system stabilizers for more than two percent of all operating hours. If this were to occur, reliability could be diminished.

95. The Commission understands that the purpose of the two percent exemption is to allow the generator operator with an installed power system stabilizer to remove the power system stabilizer from service when the generator operator determines that power system stabilizer operation would jeopardize the generator or reliability of the Bulk-Power System. All hours included in the two percent exemption must be consistent with the purpose of the revised regional Reliability Standard, which is to ensure the reliability of the Bulk-Power System within the Western Interconnection by ensuring that power system stabilizers on synchronous generators are kept in service and controlling voltage.[46] We will not direct WECC to modify the two percent exemption for power system stabilizer operation.

2. Exclusion of Synchronous Generators that Operate for Less than Five Percent of All Hours During a Calendar Quarter

96. Requirement R1.1 of regional Reliability Standard VAR-501-WECC-1 allows exclusion of any synchronous generator that operates for less than five percent of all

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whether a party met or failed to meet the Requirement given the specific facts and circumstances of its use, ownership or operation of the Bulk-Power System").

[46] *See supra* note 35.

hours during any calendar quarter from the requirement that it operate with power system stabilizers in service. In its petition, NERC explained that, during the Reliability Standard development process of the regional Reliability Standard, NERC expressed concern regarding the exclusion of these hours.[47] WECC responded by explaining that the "exclusion below the five percent threshold during a calendar quarter permits the continued practice of allowing the operation of peaking units without penalty for having an out-of-service power system stabilizer per the manufacturer recommendations" since "[p]eaking units often operate, for short periods, at low megawatt levels (below where manufacture[r]s recommend placing the [power system stabilizer] in-service)." [48]

NOPR Proposal

97. In the NOPR, the Commission noted that it appears that WECC developed the five percent threshold to account for out-of-service power system stabilizer per manufacturer recommendations. We sought comment on whether the proposed provision is written more broadly than necessary. Based on the comments received, the Commission stated that it might propose to direct WECC to develop a modification through its Reliability Standards development process that addresses this concern. The Commission suggested that one reasonable solution would be to develop a replacement requirement that directly

[47] NERC Petition at 40.

[48] *Id.*

addresses the need for an exemption for peaking units that may not operate with power system stabilizers to satisfy manufacturer recommendations.

Comments

98. WECC, supported by SDG&E and EPSA, comments that the five percent exemption is not new and is included in the applicability sections of WECC VAR-STD-002a-1 and VAR-STD-002b-1. WECC contends that the retention of this exclusion in the VAR-501-WECC-1 will not diminish the reliability of the bulk electric system in the Western Interconnection. WECC further contends that it would not be cost-effective for some older generators that are used for short periods to replace, repair, or upgrade their power system stabilizers. WECC contends that it is more likely that these generators would be retired rather than make such repairs and, thus, they would no longer be available during peak periods. Thus, WECC contends, removing the five percent exemption could have a negative impact on reliability.

Commission Determination

99. We recognize that a stated exclusion for synchronous generators that operate for less than five percent of all hours during a calendar quarter from compliance with the requirement to have a power system stabilizer in service exists in the applicability section of the currently-effective WECC VAR-STD-002b-1. We also understand that it may not be cost-effective for some older generators that are used only for short periods of time to replace, repair, or upgrade their power system stabilizers. We, therefore, agree that this

exclusion will not diminish the reliability of the bulk electric system in the Western Interconnection. We believe that the requirement is acceptable because there is no corresponding NERC requirement for power system stabilizers and, thus, the revised standard is more stringent than the requirements of the NERC Reliability Standards. Accordingly, we are satisfied with WECC's explanation on this matter.

3. Power System Stabilizer Replacement

100. Proposed sub-requirement R1.10 lengthens the power system stabilizer replacement timeline due to component failure from 15 months to 24 months "to accommodate design and procurement especially for nuclear units."[49]

NOPR Proposal

101. The Commission proposed to accept this requirement even though WECC provided limited evidence in the record to support the extension of the outage time frame for power system stabilizers from 15 months to 24 months. However, since the rationale provided for the increased replacement period is based on the needs of nuclear power generators, the Commission expressed concern whether the additional nine months are necessary for many, if not most, units. The Commission explained that the additional replacement time could lead to a decrease in generation units operating with power

[49] NERC Petition at Exhibit C, "Consideration of Comments for VAR-501-WECC-1 – Power System Stabilizer Comments were due January 2, 2008."

system stabilizers. The Commission commented that, in the event of a contingency, such a decrease could have an impact on bulk electric system reliability. Accordingly, the Commission sought comment regarding the historical replacement period for nuclear and non-nuclear units, and the appropriateness of the Commission proposal.

Comments

102. WECC comments that it has gained considerable knowledge on this subject since the Commission approved the currently-effective regional Reliability Standard in 2007. WECC states that drafting team members reviewed replacement experiences for a number of different types of generators and concluded that a 15 month replacement requirement was extremely tight. In addition, WECC states that because many power system stabilizers date back to the early 1970s or earlier, extensive refinements must be made to the design of the power system stabilizer and the excitation system to integrate an old analog system with a new digital system. WECC also points out that strict procurement regulations, contracting requirements, the limited number of suppliers, delivery, and installation time all make a 15 month deadline infeasible. WECC further contends that the number of units that are operating without a power system stabilizer in service at the same time due to component failure is typically very limited. Thus, WECC argues, there would be very little, if any, impact on bulk electric system reliability that would result from an increase in the outage time frame to 24 months.

103. EPSA comments that 15 months is an insufficient period in which to require a generator to replace a power system stabilizer because of the length of the procurement period and the importance of fulfilling compliance requirements with respect to the replacement equipment. Accordingly, EPSA advocates that the 24-month period represents an improvement that should be adopted by the Commission. SDG&E agrees that the replacement period should be extended to 24 months based on industry experience with these generator components.

Commission Determination

104. We recognize, as WECC points out, that replacing an old power system stabilizer may require significant refinements to the design of the power system stabilizer and the excitation system to integrate a new digital system with an existing analog system, thereby requiring additional time. We also recognize that, as WECC and EPSA explain, procurement periods for new power system stabilizers might require more than 15 months. Although we did not receive any specific details regarding historical power system stabilizer replacement timeframes, WECC states that the drafting team members reviewed replacement experiences for a number of different types of generators and concluded the 15-month replacement requirement was "extremely tight."[50] Based on these explanations, we approve the regional Reliability Standard with the modified

[50] WECC Comments at 18.

provision, Requirement R1.6, which allows up to 24 months for replacing a power system stabilizer and excitation system due to component failure.

4. Power System Stabilizer Performance

105. The current regional Reliability Standard requires all generators with power system stabilizers to be properly tuned in accordance with the WECC requirements. [51] The proposed regional Reliability Standard removes the tuning requirement without explanation or analysis of the potential impact of removing the provision.

NOPR Proposal

106. In the NOPR, the Commission expressed its belief that, if a power system stabilizer is in-service, it must be properly tuned to enhance system damping and maintain system stability. The Commission, therefore, sought further explanation from WECC and NERC, and public comment, on the impact of removing the tuning requirement.

Comments

107. WECC states that the Commission is correct that a properly-tuned power system stabilizer is necessary to enhance system damping. WECC contends, however, that a power system stabilizer tuning requirement is not necessary because, in order for a

[51] *Id*. Requirement WR1 of the currently-effective regional Reliability Standard provides: "Power System Stabilizers on generators shall be kept in service at all times, unless one of the exemptions listed in Section C (Measures) applies, and shall be properly tuned in accordance with WECC requirements."

generator operator to meet the in-service requirements of VAR-501-WECC-1 without experiencing inappropriate system oscillations, that generator operator typically must have a properly tuned power system stabilizer. WECC adds that VAR-501-WECC-1 is a performance, not a tuning standard, which is why WECC's standards development drafting team excluded this requirement from the revised regional Reliability Standard.

108. Moreover, WECC contends that power system stabilizer tuning should not be added to VAR-501-WECC-1 because tuning is highly site and unit specific, making it difficult to enforce a "proper tuning" requirement. WECC further contends that identifying whether or not a power system stabilizer or excitation system is properly tuned is very dependent upon the professional opinion of the expert performing the tuning. WECC also points out that older analog power system stabilizers are being replaced with newer digital versions, which do not require any further adjustments unless changes are made to the system configuration. Moreover, WECC contends that because the new digital power system stabilizers, unlike the older analog versions, do not drift, the periodic testing requirement which sought to address drift by requiring a five-year tuning power system stabilizer testing program is no longer necessary.

109. EPSA comments that a generator operator can purchase, install and tune power system stabilizer equipment but regional entities may have the tools to measure proper tuning. EPSA contends that an out-of-tune power system stabilizer could be identified faster using analyses performed by the transmission operator or regional entity than the

owner of the power system stabilizer could identify by routinely checking power system stabilizer tuning parameters. Moreover, EPSA comments, new power system stabilizers are digital, so less component drift takes place than in older power system stabilizers that would need to be checked periodically. EPSA predicts that it may not be long before new power system stabilizers are self-learning and self-tuning.

110. In contrast, PacifiCorp suggests modifying the proposed regional Reliability Standard to include language that the power system stabilizer shall be tuned in accordance with WECC requirements, without prescribing any intervals. PacifiCorp further suggests that carrying over this requirement from the current standard would ensure any power system stabilizer will be properly tuned.

Commission Determination

111. Although a properly-tuned power system stabilizer is necessary to enhance system damping, we accept the exclusion of the current tuning requirement based on WECC's explanation that, in order for a generator operator with an installed power system stabilizer to meet the in-service requirements of VAR-501-WECC-1, the power system stabilizer must be properly tuned to prevent experiencing inappropriate system oscillations. A tuning requirement would require removal of the power system stabilizer from service, which may cause the generator operator to be non-compliant with the performance requirements of VAR-501-WECC-1. Accordingly, we will not direct any modifications to VAR-501-WECC-1 regarding a power system stabilizer tuning

requirement. If, in the future, WECC develops a requirement for power system stabilizer tuning, we urge WECC to consider the comments submitted by PacifiCorp to include such a tuning requirement.

5. Reporting Burden

NOPR Proposal

112. In the NOPR, the Commission noted that the revised WECC Reliability Standards do not modify or otherwise affect the burdens related to the collection of information already in place. Thus, the Commission preliminarily concluded that the revised WECC Reliability Standards will neither increase the reporting burden nor impose any additional information collection requirements.

Comments

113. Melissa Kurtz, USACE NWW, USACE Portland, USACE Seattle contend that, contrary to the Commission's burden estimate in the NOPR, compliance with VAR-501-WECC-1 will impose an additional burden on entities that must now track when a power system stabilizer is off. These commenters state that the power system stabilizer is largely handled by the generator exciter, which is programmed to activate and deactivate the power system stabilizer depending on generator loading conditions. They explain that the exciter automatically turns the power system stabilizer off when the unit is passing through a rough zone, when the unit is generating less power than its design limit for effective power system stabilizer operation, or when the unit is condensing. They

contend that VAR-501-WECC-1 will require tracking the status of the power system stabilizer that is turning on and off automatically along with the reason it is turned off. They also explain that a power system stabilizer is a piece of remote equipment that sits on the powerhouse floor and is not conveniently located for observation. Thus, they argue that the required tracking is not reasonable and will not add to system reliability because it uses scarce resources to track the information. Further, commenters state that tracking this information would require hardware and software modifications by staff. They suggest that evidence of compliance through system settings is more beneficial than micromanaging the results of a machine.

114. The Bureau of Reclamation states that it has no process to track the minutes that the power system stabilizer is in a bypass condition and to develop such a process, as would be required under Requirement R2 of VAR-501-WECC-1, would be very burdensome. The Bureau of Reclamation further comments that tracking such a transient condition does not add to the reliability of the bulk electric system. Finally, the Bureau of Reclamation points out that the current regional Reliability Standard does not include a requirement to track and document the time the power system stabilizer controller places the power system stabilizer in bypass condition.

Commission Determination

115. The Commission finds that VAR-501-WECC-1 does not impose any new reporting requirements. Under Requirement R3.1 of NERC Reliability Standard VAR-

002-1.1b a generator operator must notify its transmission operator as soon as practical but no later than 30 minutes after a "status or capability change on any generator Reactive Power resource, including the status of each automatic voltage regulator and power system stabilizer and the expected duration of the change in status or capability."[52] Thus, generator operators already must monitor and report changes in status of their power system stabilizers.

116. We believe that the documentation requirement for exempt outages of power system stabilizers under Requirement R2 of VAR-501-WECC-1 is consistent with the existing reporting requirement under Requirement R3.1 of NERC VAR-002-1.1b. If a generator operator must already notify its transmission operator of a change in status of each power system stabilizer, it should not create an added burden to document those changes. Thus, we do not expect implementation of VAR-501-WECC-1 to result in an increased reporting burden to generator operators. If, however, generator operators in the Western Interconnection continue to be concerned about their compliance with either of these Reliability Standards, we believe that such a concern is best addressed through the compliance programs at either WECC or NERC.

[52] NERC Reliability Standard VAR-002-1.1b, Requirement R3.1.

6. Summary

117. The Commission adopts its NOPR proposal to approve VAR-501-WECC-1 as just, reasonable, not unduly discriminatory or preferential, and in the public interest. We accept WECC's explanations for the issues raised in the NOPR. Accordingly, we will not, at this time, direct WECC to develop any modifications to VAR-501-WECC-1. We also dismiss arguments raised by Melissa Kurtz, USACE NWW, USACE Portland, and USACE Seattle that the revised regional Reliability Standard creates an undue reporting burden.

E. NERC VAR-002-1.1b

118. In the NOPR, the Commission sought comment as to whether it should direct NERC to develop a modification to VAR-002-1.1b to clarify that, if a generator has an automatic voltage regulator or power system stabilizer installed, it must be in-service at all times, equipment and facility ratings permitting, unless exempted by the transmission operator.

119. The Commission noted that NERC Reliability Standard does not address power system stabilizer tuning. The Commission stated that a properly tuned power system stabilizer is necessary to enhance system damping. If a power system stabilizer is installed, periodic review of the power system stabilizer tuning is a significant component of maintaining system stability to ensure that system changes have not impacted the performance of the power system stabilizer in supporting system stability. Accordingly,

the Commission sought comment on whether it should propose to direct NERC to develop a continent-wide Reliability Standard to address this concern. The Commission added that any resulting proposal to direct the development of modifications to the NERC Reliability Standards would be addressed in a separate proceeding.

Comments

120. NERC comments that it has not performed the technical analysis necessary to determine whether it is necessary for Bulk-Power System reliability to develop a tuning requirement for power system stabilizers. If the Commission receives comments that would compel it to direct NERC to develop such a requirement, NERC asks that the Commission allow NERC enough flexibility so that it can appropriately prioritize the directive.

Commission Determination

121. The Commission will not, at this time, commence a new proceeding to propose a directive to NERC to develop a requirement on power system stabilizer tuning. We recognize that the need for a requirement on power system stabilizer tuning is reduced as generator operators install new digital power system stabilizers, which are less prone to drifting and should not require adjustment unless changes are made to system configurations. Nevertheless, we may revisit this proposal as more practical experience with the new digital technology progresses.

F. Violation Risk Factors and Violation Severity Levels

122. In the event of a violation of a Reliability Standard, consistent with NERC practices, WECC establishes the initial value range for the corresponding base penalty amount. To do so, WECC assigns a violation risk factor for each requirement of a Reliability Standard that relates to the expected or potential impact of a violation of the requirement on the reliability of the Bulk-Power System. In addition, WECC defines up to four violation severity levels – Lower, Moderate, High, and Severe – as measurements for the degree to which the requirement was violated in a specific circumstance.

123. Violation risk factors and violation severity levels are not part of the Reliability Standard and, thus, are appropriately treated as an appendix to NERC's Rules of Procedure.[53] Revisions of violation severity levels do not modify the Reliability Standard. Accordingly, NERC and the regional entities are not required to comport with the Reliability Standards development provisions of section 215 of the FPA when revising a violation risk factor or violation severity level assignment.[54]

124. In Order No. 705, the Commission approved 63 of NERC's 72 proposed violation risk factors for the version one FAC Reliability Standards and directed NERC to file violation severity level assignments before the version one FAC Reliability Standards

[53] Violation Severity Level Order, 123 FERC ¶ 61,284 at P 15.

[54] *See North American Electric Reliability Corporation*, 120 FERC ¶ 61,145 at P 16.

become effective.[55] Subsequently, NERC developed violation severity levels for each requirement of the Commission-approved FAC Reliability Standards, as measurements for the degree to which the requirement was violated in a specific circumstance.

125. On June 19, 2008, the Commission issued its Violation Severity Level Order approving the violation severity level assignments filed by NERC for the 83 Reliability Standards approved in Order No. 693.[56] In that order, the Commission offered four guidelines for evaluating the validity of violation severity levels, and ordered a number of reports and further compliance filing to bring the remainder of NERC's violation severity levels into conformance with the Commission's guidelines. The four guidelines are: (1) violation severity level assignments should not have the unintended consequence of lowering the current level of compliance; (2) violation severity level assignments should ensure uniformity and consistency among all approved Reliability Standards in the determination of penalties;[57] (3) violation severity level assignments should be consistent with the corresponding requirement; and (4) violation severity level assignments should

[55] *Facilities Design, Connections and Maintenance Reliability Standards,* Order No. 705, 121 FERC ¶ 61,296, at P 137 (2007).

[56] Violation Severity Level Order, 123 FERC ¶ 61,284.

[57] Guideline 2 contains two sub-parts: (a) the single violation severity level assignment category for binary requirements should be consistent and (b) violation severity levels assignments should not contain ambiguous language.

be based on a single violation, not a cumulative number of violations.[58] The Commission found that these guidelines will provide a consistent and objective means for assessing, *inter alia*, the consistency, fairness and potential consequences of violation severity level assignments. The Commission noted that these guidelines were not intended to replace NERC's own guidance classifications but, rather, to provide an additional level of analysis to determine the validity of violation severity level assignments.

126. On August 10, 2009, NERC submitted an informational filing setting forth a summary of revised guidelines that NERC intends to use in determining the assignment of violation risk factors and violation severity levels for Reliability Standards. NERC states that these revised guidelines were consistent with Commission's guidelines. On May 5, 2010, NERC submitted an informational filing as a supplement to its pending March 5, 2010 Violation Severity Level Order compliance filing.[59] In that May 5, 2010 filing, NERC proposes to assign a violation severity level only to each main requirement. Thus, a violation of any number of sub-requirements would trigger only a single violation of the main requirement. This proposed "roll-up" methodology is currently pending before the Commission in Docket No. RR08-4-005.

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[58] Violation Severity Level Order, 123 FERC ¶ 61,284 at P 17.

[59] North American Reliability Corporation, Filing of the North American Electric Reliability Corporation regarding the Assignment of Violation Risk Factors and Violation Severity Levels, Docket No. RR08-4-005 (filed May 5, 2010).

WECC Proposal

127. As discussed above, WECC has developed violation risk factors and violation severity levels for each of these revised regional Reliability Standards. WECC states that it developed these violation risk factors and violation severity levels in response to comments from NERC and the Commission that it should replace its existing sanctions tables. In addition, NERC states in its petition that WECC has agreed to conform the format of the violation severity levels to that of the NERC Reliability Standards in revisions to the four regional Reliability Standards.

Commission Determination

128. The Commission approves the violation risk factors and violation severity levels assigned to FAC-501-WECC-1, PRC-004-WECC-1, VAR-002-WECC-1, and VAR-501-WECC-1. We note, however, that there appear to be some missing violation risk factors and severity levels. Even with these potential gaps, however, the requirements of the WECC Reliability Standards approved in this Final Rule shall be enforceable upon their implementation.

129. In FAC-501-WECC-1, the Lower violation severity level applies when the transmission maintenance and inspection plan does not include facilities for one of the paths in the WECC Transfer Path Table, but the transmission owners are performing maintenance and inspection for those facilities. The Moderate violation severity level applies when the transmission maintenance and inspection plan does not include facilities

for two of the paths in the WECC Transfer Path Table, and the transmission owners are not performing maintenance and inspection for those facilities. Based on these two violation severity level assignments, it is ambiguous which violation severity level would apply if the transmission maintenance and inspection plan does not include facilities for one of the paths in the WECC Transfer Path Table, and the transmission owners are not performing maintenance and inspection for those facilities.

130. In PRC-004-WECC-1, the violation severity levels for Requirement R2.3 do not define any potential violations for the transmission owner even though both Requirement 2.3 and sub-Requirement 2.3.1 apply to the transmission owner, a situation that could be viewed as violating violation severity level guideline 3. Also in PRC-004-WECC-1, violation risk factors have not been assigned for Requirements R2, R2.4 and R2.4.1. If WECC believes that it would be inappropriate to assign violation risk factors to these requirements, it should submit an explanation.

131. In VAR-002-WECC-1, Requirement R1 requires the automatic voltage regulators to be "in service and in automatic voltage control mode" but the violation severity levels for Requirement R1 specify only that the automatic voltage regulator must be "in service," which could be viewed as violating violation severity level guideline 3. Also, the violation severity levels for VAR-002-WECC-1, Requirement R1 lower the level of compliance from the levels of non-compliance associated with the currently-effective VAR-STD-002a-1. VAR-STD-002a-1 includes four levels of non-compliance (Level 1,

Level 2, Level 3, and Level 4) which have been translated into the four violation severity levels (Lower, Moderate, High, and Severe). The four levels of non-compliance are defined by the automatic voltage regulator in service hours being: (Level 1) less than 98 percent but at least 96 percent; (Level 2) less than 96 percent but at least 94 percent; (Level 3) less than 94 percent but at least 92 percent; and (Level 4) less than 92 percent. The violation severity levels assigned to Requirement R1 of VAR-002-WECC-1 are defined by the automatic voltage regulator in service hours being: (Lower) less than 98 percent but at least 90 percent; (Moderate) less than 90 percent but at least 80 percent; (Higher) less than 80 percent but at least 70 percent; and (Severe) less than 70 percent. This change appears to violate violation severity level guideline 1. In addition, WECC has determined that High and Severe violation severity levels are not applicable to Requirement R2 of VAR-002-WECC-1.

132. In VAR-501-WECC-1, the violation severity levels for Requirement R1 lower the level of compliance from the levels of non-compliance associated with the currently-effective VAR-STD-002a-1. VAR-STD-002b-1 includes four levels of non-compliance (Level 1, Level 2, Level 3, and Level 4) which have been translated into the four violation severity levels (Lower, Moderate, High, and Severe). The four levels of non-compliance are defined by the power system stabilizer in service hours being: (Level 1) less than 98 percent but at least 96 percent; (Level 2) less than 96 percent but at least 94 percent; (Level 3) less than 94 percent but at least 92 percent; and (Level 4) less than

92 percent. The proposed violation severity levels are defined by the power system stabilizer in service hours being: (Lower) less than 98 percent but at least 90 percent; (Moderate) less than 90 percent but at least 80 percent; (Higher) less than 80 percent but at least 70 percent; and (Severe) less than 70 percent. This change appears to violate violation severity level guideline 1. For Requirement R2, only lower and moderate violation severity levels were defined.

133. Consistent with our concerns outlined above, we direct WECC to consider modifications to the violation risk factors and violation severity levels assigned to these four regional Reliability Standards. Accordingly, we direct WECC to submit revisions to or explanations justifying these violation risk factors and violation severity levels within 60 days from the issuance of this order. Consistent with NERC practice, these violation risk factors and violation severity levels should be in table format. Interested parties will have an opportunity to comment on this filing. In addition, the Commission supports WECC's agreement to conform the violation severity levels format to that of the NERC Reliability Standards related to FAC-501-WECC-1, VAR-002-WECC-1 and VAR-501-WECC-1 in future revisions to the regional Reliability Standards.[60] Accordingly, we expect WECC to make future revisions to these and other violation risk factors and

[60] NERC Petition at 18, 35 and 40.

violation severity level assignments consistent with any changes in NERC and Commission guidelines.

III. Information Collection Statement

134. The information collection requirements in this Final Rule are identified under the Commission data collection FERC-725E, "Mandatory Reliability Standards for the Western Electricity Coordinating Council." The information collection requirements are being submitted to the Office of Management and Budget (OMB) for review under section 3507(d) of the Paperwork Reduction Act of 1995.[61] OMB's regulations to approve certain information collection requirements imposed by agency rule.[62]

135. The four new regional Reliability Standards (FAC-501-WECC-1, PRC-004-WECC-1, VAR-002-WECC-1, and VAR-501-WECC-1) replace existing regional Reliability Standards PRC-STD-001-1, PRC-STD-003-1, PRC-STD-005-1, VAR-STD-002a-1, and VAR-STD-002b-1, which were approved by the Commission in its June 2007 Order.[63] In addition, the new regional Reliability Standards introduce five new regional definitions for the NERC Glossary: Functionally Equivalent Protection System, Functionally Equivalent Remedial Action Scheme, Security-Based Misoperations,

[61] 44 U.S.C. 3507(d).

[62] 5 CFR 1320.11

[63] *North American Electric Reliability Corp*. 119 FERC ¶ 61,260.

Dependability-Based Misoperations, and Commercial Operation. We find that the requirements of these revised regional Reliability Standards may result in minor changes in burden to applicable entities but, overall, these requirements will not substantially add to or increase burden to entities that must already comply with the existing regional Reliability Standards and the corresponding NERC Reliability Standards.

136. There are, however, two differences with respect to the applicability of the new versus the existing regional Reliability Standards. First, existing regional Reliability Standard WECC PRC-STD-005-1 is applicable to transmission owners or operators that maintain transmission paths indicated in the WECC Transfer Path Table. By contrast, new Reliability Standard FAC-501-WECC-1 is applicable only to transmission owners that maintain transmission paths indicated in the WECC Transfer Path Table. Thus, transmission operators no longer must comply with these regional requirements. Second, existing regional Reliability Standard WECC VAR-STD-002a-1 is applicable only to generator operators of synchronous generators whereas new regional Reliability Standard VAR-002-WECC-1 is applicable to both generator operators and transmission operators of synchronous condensers. Thus, Reliability Standard VAR-002-WECC-1 creates a new burden for transmission operators of synchronous condensers, which we evaluate below.

137. Public Reporting Burden: Our estimate below regarding the number of respondents is based on the WECC compliance registry as of December 2, 2010. According to WECC's compliance registry, as of that date there are 52 transmission

operators. As discussed above, new WECC Reliability Standard FAC-501-WECC-1 removes as an applicable entity transmission operators that maintain transmission paths listed in the WECC Transfer Path Table. In addition, new Reliability Standard VAR-002-WECC-1 adds as applicable entities a subset of transmission operators that operate synchronous condensers. Although these requirements apply to a subset of transmission operators, it is unclear which transmission operators should be included and so we base our burden estimate on the total number of transmission operators. Given these parameters, the Commission estimates the savings related with the removal of transmission operators from FAC-501-WECC-1 and the added public reporting burden for transmission operators that must comply with Reliability Standard VAR-002-WECC-1 is as follows:

FERC-725E Data Collection	No. of Respondents (A)	No. of Annual Responses (B)	Hours Per Respondent (C)	Total Annual Hours (A X B X C)
Recordkeeping for transmission operators complying with PRC-STD-005-1	52	1	10	(520) (savings)
Reporting for transmission operators	52	4	10	2,080

complying with VAR-002-WECC-1				
Recordkeeping for transmission operators complying with VAR-002-WECC-1	52	4	1	208

Total Estimated Annual Hours for Collection: (Reporting/Compliance + recordkeeping) = 1,768 hours.

Reporting/Compliance = 2,080 @ $120/hour = $249,600

Recordkeeping = (312) hours @ $28/hour = ($8,736) (savings)

Total Cost = $240,864

Title: FERC-725E, Mandatory Reliability Standards for the Western Electricity Coordinating Council.

Action: Proposed Revision to FERC-725E.

OMB Control No.: 1902-0244

Respondents: Businesses or other for-profit institutions; not-for-profit institutions.

Frequency of Responses: On Occasion.

Necessity of the Information: This Final Rule approves four regional Reliability Standards that pertain to facilities design, connections, and maintenance; protection and control; and voltage and reactive. This Final Rule also approves the addition of five new terms to the NERC Glossary of Terms. This Final Rule finds the Reliability Standards

and related definitions just, reasonable, not unduly discriminatory or preferential, and in the public interest.

138. Interested persons may obtain information on the reporting requirements by contacting: Federal Energy Regulatory Commission, Attn: Ellen Brown, Office of the Executive Director, 888 First Street NE, Washington, DC 20426, Email: DataClearance@ferc.gov, Tel: (202) 502-8663, Fax: (202) 273-0873. Comments on the requirements of this Final Rule may also be sent to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503 [Attention: Desk Officer for the Federal Energy Regulatory Commission]. For security reasons, comments should be sent by e-mail to OMB at oira submission@omb.eop.gov. Please reference OMB Control Number 1902-0244, RIN 1902-AE17, and the docket number of this Final Rule in your submission.

IV. Environmental Analysis

139. The Commission is required to prepare an Environmental Assessment or an Environmental Impact Statement for any action that may have a significant adverse effect on the human environment.[64] The Commission has categorically excluded certain actions from this requirement as not having a significant effect on the human environment. The

[64] Order No. 486, *Regulations Implementing the National Environmental Policy Act*, 52 FR 47897 (Dec. 17, 1987), FERC Stats. & Regs., Regulations Preambles 1986-1990 ¶ 30,783 (1987).

actions directed in this Final Rule fall within the categorical exclusion in the Commission's regulations for rules that are clarifying, corrective or procedural, for information gathering, analysis, and dissemination. [65] Accordingly, neither an environmental impact statement nor an environmental assessment is required.

V. Regulatory Flexibility Act

140. The Regulatory Flexibility Act of 1980 (RFA)[66] generally requires a description and analysis of final rules that will have significant economic impact on a substantial number of small entities. The requirements of the Reliability Standards approved in this Final Rule would apply primarily to transmission owners of major transmission paths and remedial action schemes within the Western Interconnection, generator owners of major remedial action schemes within the Western Interconnection, transmission operators that operate major transmission paths or remedial action schemes in the Western Interconnection, and generator and transmission operators that operate synchronous generators and condensers within the Western Interconnection that are connected to the bulk electric system. Many of these entities do not fall within the definition of small entities but some transmission owners, generator owners, transmission operators and

[65] 18 CFR 380.4(a)(5).

[66] 5 U.S.C. 601-612.

generator operators would be deemed small entities.[67] The new regional Reliability Standards reflect a continuation of existing requirements currently applicable to these entities.

141. There are only two modifications to the applicable entities for this group of regional Reliability Standards. Proposed FAC-501-WECC-1 no longer applies to transmission operators. Proposed VAR-002-WECC-1 has added applicability to transmission operators, but only the subset that operate synchronous condensers that are connected to the bulk electric system.

142. Based on available information regarding NERC's compliance registry, and our best assessment of the application of the proposed regional Reliability Standards, approximately 275 unique entities will be responsible for compliance with the proposed regional Reliability Standards, of which 52 are transmission operators. Of the 52 transmission operators, only a subset that operate synchronous condensers connected to the bulk electric system will be subject to the proposed VAR-002-WECC-1, i.e., required to have automatic voltage regulators in service and in automatic voltage control mode 98 percent of operating hours on synchronous condensers, and document the hours

[67] The RFA definition of "small entity" refers to the definition provided in the Small Business Act (SBA), which defines a "small business concern" as a business that is independently owned and operated and that is not dominant in its field of operation. *See* 15 U.S.C. 632. According to the SBA, a small electric utility is defined as one that has a total electric output of less than four million MWh in the preceding year.

that are excluded from automatic voltage regulator operation. The Commission estimates that this requirement will impose a cost of $4,912 on transmission operators that operate synchronous condensers connected to the bulk electric system. We believe that this figure should not represent a significant portion of operating costs.

143. Based on the foregoing, the Commission certifies that this Final Rule will not have a significant impact on a substantial number of small entities. Accordingly, no regulatory flexibility analysis is required.

VI. Document Availability

144. In addition to publishing the full text of this document in the Federal Register, the Commission provides all interested persons an opportunity to view and/or print the contents of this document via the Internet through FERC's Home Page (http://www.ferc.gov) and in FERC's Public Reference Room during normal business hours (8:30 a.m. to 5:00 p.m. Eastern time) at 888 First Street NE, Room 2A, Washington DC 20426.

145. From FERC's Home Page on the internet, this information is available on eLibrary. The full text of this document is available on eLibrary in PDF and Microsoft Word format for viewing, printing, and/or downloading. To access this document in eLibrary, type the docket number excluding the last three digits of this document in the docket number field.

146. User assistance is available for eLibrary and the FERC's website during normal business hours from FERC Online Support at 202-502-6652 (toll free at 1-866-208-3676) or email at ferconlinesupport@ferc.gov, or the Public Reference Room at (202) 502-8371, TTY (202)502-8659. E-mail the Public Reference Room at public.referenceroom@ferc.gov.

VII. Effective Date and Congressional Notification

147. This Final Rule shall become effective [insert date 60 days from publication in the **FEDERAL REGISTER**]. The Commission has determined, with the concurrence of the Administrator of the Office of Information and Regulatory Affairs of OMB, that this rule is not a "major rule" as defined in section 351 of the Small Business Regulatory Enforcement Fairness Act of 1996.

148. The effective date of the Final Rule is separate from the implementation date of the Reliability Standards approved herein. According to a schedule developed by WECC, FAC-501-WECC-1, VAR-002-WECC-1 and VAR-501-WECC-1 shall become effective as of the first day of the first quarter after Commission approval. In addition, PRC-004-WECC-1 shall become effective as of the first day of the second quarter after approval by the Commission.

Thus, if the Final Rule is published in the Federal Register on or before May 2, 2011, the Final Rule would become effective in 60 days, FAC-501-WECC-1, VAR-002-WECC-1 and VAR-501-WECC-1 would be implemented beginning July 1, 2011, and PRC -004-

WECC-1 would be implemented beginning October 1, 2011. If, however, the Final Rule is published in the Federal Register after May 2, 2011, the Final Rule would become effective in 60 days, FAC-501-WECC-1, VAR-002-WECC-1 and VAR-501-WECC-1 would be implemented beginning October 1, 2011, and PRC-004-WECC-1 would be implemented beginning January 1, 2012.

List of subjects in 18 CFR Part 40

Electric power, Electric utilities, Reporting and recordkeeping requirements

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

Appendix A

List of Commenters

Name	Abbreviation
Bonneville Power Administration	Bonneville
U.S. Bureau of Reclamation	Bureau of Reclamation
California Department of Water Resources State Water Project	CDWR
Electric Power Supply Association	EPSA
Mariner Consulting Services, Inc.	Mariner
Melissa Kurtz	
North American Electric Reliability Corp.	NERC
PacifiCorp	PacifiCorp
San Diego Gas & Electric Co.	SDG&E
Transmission Agency of Northern California	TANC
U.S. Army Corps of Engineers NNW	USACE NNW
U.S. Army Corps of Engineers Portland	USACE Portland
U.S. Army Corps of Engineers Seattle	USACE Seattle
Western Electricity Coordinating Council	WECC